European Journal of Taxonomy 940: 1–180
https://doi.org/10.5852/ejt.2024.940.2577

ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2024 · Wittmann K.J.

Monograph

urn:lsid:zoobank.org:pub:19DE5E4F-3A2C-41FF-A593-A4C74F7A9ABD

The Mysidae (Crustacea, Mysida) of the ANDEEP I–III expeditions to the Antarctic deep sea with the description of twelve new species, establishment of four new genera and with world-wide keys to the species of Erythropinae and Mysidellinae

Karl J. WITTMANN

Department of Environmental Health, Medical University of Vienna,
Kinderspitalgasse 15, 1090 Vienna, Austria.
Email: karl.wittmann@meduniwien.ac.at

urn:lsid:zoobank.org:author:C90E7BC4-A27A-4B41-93F3-6224D17795FF

Abstract. Twenty-one species of Mysidae were sampled by three ANDEEP expeditions to the Southern Ocean with epibenthic sledges dragged over the deep-sea floor in the realm of 58–71° S and 00–65° W, depth 774–5190 m. Previously known ranges are significantly extended southward for four species and to greater depth in the same four species plus two other species. Supplementary descriptions are given for *Amblyops tattersalli* and *Dactylamblyops murrayi*, and a first description of a (subadult) male for *Thalassomysis tattersalli*. The definitions of the genera *Amphiakrops* gen. nov., *Chelamblyops* gen. nov., *Desmocornea* gen. nov. and *Schizurakrops* gen. nov. are mainly based on the structure of the eyes as well as of the antennal peduncle, chelate second thoracic endopod and telson. These structures are also important for the descriptions of *Amblyops arianii* sp. nov., *A. bipapillatus* sp. nov., *Amblyopsoides fenestragothica* sp. nov., *A. lepidophthalma* sp. nov., *Amphiakrops brandtae* gen. et sp. nov., *Dactylamblyops benthophilus* sp. nov., *Desmocornea subchelata* gen. et sp. nov., *Paramblyops petrescui* sp. nov., *Schizurakrops meesi* gen. et sp. nov., *Scolamblyops muehlenhardtae* sp. nov., *Stellamblyops doryphorus* sp. nov. and *Mysidella antarctica* sp. nov. Six previously described taxa are recombined as *Amblyopsoides laticauda* comb. nov., *Amphiakrops bidigitatus* comb. nov., *A. japonicus* comb. nov., *Chelamblyops globorostris* comb. nov., *Meierythrops tattersalli* comb. nov. and *M. triangulatus* comb. nov. One species is revised back to the initial combination as *Dactylamblyops japonicus*. All except one (*Mysidella antarctica* sp. nov.) newly described (12), newly recombined (6) or back-combined (1) species belong to the Erythropinae. Keys to the resulting 61 genera and 263 species of Erythropinae and 18 species of Mysidellinae are given at the world-wide scale. Ocular papillae with a terminal pore (sensory pore organ) are recorded in nine ANDEEP species. The organ of Bellonci is identified on the reduced eyes in 16 species, among which *D. subchelata* gen. et sp. nov. has many ommatidia arranged in a self-contained ribbon which shows a banded rhabdom only in non-adults. Reduction of visual elements together with shrinking of ocular papillae during ontogenetic development suggest that non-adults of *D. subchelata* and *T. tattersalli* stay in the photic zone for feeding and growth and then descend only once during their lifetime to the abyss for reproduction.

Keywords. New genera, new species, sensory organs, abyssal zone, Southern Ocean.

Wittmann K.J. 2024. The Mysidae (Crustacea, Mysida) of the ANDEEP I–III expeditions to the Antarctic deep sea with the description of twelve new species, establishment of four new genera and with world-wide keys to the species of Erythropinae and Mysidellinae. *European Journal of Taxonomy* 940: 1–180.
https://doi.org/10.5852/ejt.2024.940.2577

Introduction

Crustaceans of the order Mysida Boas, 1883 were obtained by ANDEEP (ANtarctic benthic DEEP-sea biodiversity) campaigns conducted by the University of Hamburg and the Senckenberg Institute (Frankfurt) during *Polarstern* cruises in 2002 (ANDEEP I–II) and 2005 (ANDEEP III). A first report by Wittmann (2022) dealt with five species of the family Petalophthalmidae Czerniavsky, 1882. This second, final report deals with 21 species of the more species-rich family Mysidae Haworth, 1825, all of which were sampled on the deep-sea floor with self-closing devices. The sampling method may have contributed to the absence of the predominantly pelagic and planktonic order Lophogastrida Boas, 1883 in the collections.

An excerpt of the WoRMS database (Mees & Meland 2024) from 18 Jan. 2024 (see Acknowledgements) highlights 1166 species of Mysidae, not including the new ones described here, contributing 96% to the inventory of 1210 recent species of the order Mysida. The Mysidae show a great diversity of habitats from marine to freshwater, planktonic to benthic, littoral to hadal, epipelagic to bathypelagic and tropical to arctic. No strong predators and no parasitism have been reported. Petryashov (2014a) listed 64 species in 19 genera of Mysida (Mysidae plus Petalophthalmidae) for the Antarctic and sub-Antarctic realms in the Southern Ocean, including 51 endemics. The high degree of endemism together with so far sparse sampling in the Antarctic deep sea are reflected by the high yield documented below of twelve new species of Mysidae among a total of 21 sampled. In line with this high local endemism, the present yield of abyssal benthic Mysidae shows a narrow taxonomic range with 18 (86%) out of 21 species belonging to the subfamily Erythropinae, which otherwise contributes 263 species (22%) to the global inventory of 1178 species of Mysidae, including the new ones described here. According to the inventory by San Vicente (2010), the Erythropinae are the most species-rich subfamily in the Southern Ocean, with 15 out of 31 Antarctic Mysidae species and 16 out of 49 sub-Antarctic species, respectively. The secondmost species-rich subfamily, Heteromysinae, contributes 8 Antarctic and 11 sub-Antarctic species to this inventory. Descriptions of a total of three additional species by San Vicente (2011) and Wittmann & Chevaldonné (2021), along with the descriptions below of 11 new species boost the Antarctic Erythropinae from 15 to 29 species. This almost doubling of known species numbers in only 14 years (2011–2024) indicates that the exploration of Antarctic Erythropinae is at its very beginning.

The great number and diversity of the new taxa described below prompted the provision of world-wide keys to the species of the subfamilies involved, namely Erythropinae and Mysidellinae, which provide useful tools for taxonomy, biodiversity, benthic ecology research and species conservation in the Antarctic.

As in the treatise on Petalophthalmidae by Wittmann (2022), the present work on Mysidae contributes to the aims (Brandt *et al.* 2003) of the ANDEEP expeditions by describing a surprisingly great number of new species and by reporting morphological novelties, particularly the unusual eye structure with potential ecological implications in new species. This work and the examination of available materials from additional Antarctic expeditions will further contribute to consolidating and broadening our knowledge on the biodiversity of Mysida in deep polar waters.

Material and methods

Material

The sampling program, field methods and stations of the ANDEEP I-III expeditions are derived from Fütterer *et al.* (2003), Howe (2003, 2006), Fahrbach (2006) and Brandt *et al.* (2007). The nautical format (DMM) of geographic coordinates here adopted is as given by Fütterer *et al.* (2003) for stations of ANDEEP I, II and by Fahrbach (2006) for ANDEEP III. All mysids were taken with a self-closing epibenthic sledge equipped with an epinet and supranet, each with a mesh-size of 0.3 mm, as detailed by Brandt *et al.* (2006). Limitations due to small specimen numbers and broken appendages are inherent when working with material from the deep sea. In effect, two out of the twelve descriptions of new species given below are based on single specimens, in the view that rare findings from remote habitats such as the Antarctic should not be withheld from current knowledge on global biodiversity.

Methods

Laboratory methods, definitions and units of measurement are as in Wittmann (2020). Material examined is preserved in vials in ethanol unless explicitly indicated as mounted on slides. Expansion on slides makes the carapace appear broader (but not longer) with respect to the shape in loco. Figures of objects that are too large to fit in the frame of the micro-photographic equipment at required resolution are composed from several photographs stitched together. Eye compression is measured as length divided by thickness at the geometrical center of the eye surface in dorsal view. The tribus nomenclature in Erythropinae follows Wittmann *et al.* (2014). The terminology used is that outlined in extenso by Wittmann & Chevaldonné (2021). The thickened basal portion of the outer antennular flagellum with dense rows of aesthetascs (Fig. 5E) is termed 'callynophore' according to Lowry (1986). The female derivative of the appendix masculina ventrally on the terminal segment of the antennular peduncle is termed 'female lobe'. The sensorial pit-like depression (Fig. 5C–D) positioned dorsally on the basal segment of the antennula is named 'antennular bursa'. The dorsal lobe (Fig. 4B) situated behind the distal margin of the terminal segment of the antennular trunk is termed 'disto-median lobe'. The term 'anal lobe' is imported from entomology, where it indicates protrusions near the anus (Moyle & Byrne 2020); in the present context it designates a ventral lobe of the telson bearing the anus. For dimorphic features, the respective symbols for females and males are added to labels of figure panels.

Repository

ZMH = Zoological Museum Hamburg, also named Museum of Nature Hamburg, Germany; all specimens of Mysidae captured during the ANDEEP I-III expeditions are kept at the ZMH

Abbreviations

BL = body length measured from mid-anterior margin of carapace (if available, tip of rostrum) to terminal margin of telson without spines and setae
EBS = self-closing epibenthic sledge (Brandt *et al.* 2006)

Results

Order Mysida Boas, 1883
Family Mysidae Haworth, 1825
Subfamily Boreomysinae Holt & Tattersall, 1905
Genus *Boreomysis* M. Sars, 1869

Boreomysis* (*Boreomysis*) *sibogae Hansen, 1910

Boreomysis sibogae Hansen, 1910: 25–26, pl. ii figs 3a–e.

Material examined (non-types)

SOUTHERN OCEAN • 1 juv. (BL = 8.5 mm); South Sandwich Trench, SE of Montagu Island, ANDEEP-II station 143-1; 58°44.69′ S, 25°10.27′ W to 58°44.49′ S, 25°10.47′ W; depth 773.9–755.6 m; 25 Mar. 2002; EBS supranet • 1 ♀ imm. (BL = 11.1 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS epinet • 1 ♀ subad. (BL = 33.8 mm); same collection data as for preceding except for occurrence in supranet.

Type locality and distribution

Type locality by monotypy is station 185 of the Siboga Expedition, N Banda Sea, 3°20′ S, 127°22.9′ E; the types were taken with a non-closing net at depths of 1536–0 m (Hansen 1910). This species is panoceanic (including the Southern Ocean), mainly meso- and bathypelagic in depths of 50–4197 m. The ANDEEP records are within previously known distribution ranges.

Genus *Neobirsteiniamysis* Hendrickx & Tchindonova, 2020

Neobirsteiniamysis inermis (Willemoes-Suhm, 1874)

Petalophthalmus inermis Willemoes-Suhm, 1874: xv.

Material examined

SOUTHERN OCEAN • 1 ♀ ad. (BL = 72.9 mm); NE Weddell Abyssal Plain, near fracture zone, ANDEEP-II station 137-4; 63°44.99′ S, 33°47.74′ W to 63°44.78′ S, 33°47.81′ W; depth 4975.7–4975.1 m; 14 Mar. 2002; EBS supranet • 1 ♀ imm. (BL = 28.5 mm); NE Weddell Sea, Kosminski Fracture Zone deep, ANDEEP-II station 138-6; 62°58.09′ S, 27°54.54′ W to 62°58.02′ S, 27°54.25′ W; depth 4542.5–4541.1 m; 17 Mar. 2002; EBS supranet • 1 ♂ ad. (BL = 57.8 mm), 1 ♀ subad. (BL = 52.4 mm); eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, ANDEEP-III station 059-5; 67°29.74′ S, 00°01.93′ W to 67°29.61′ S, 00°02.19′ W; depth 4655–4655 m; 14 Feb. 2005; EBS supranet • 1 imm. (BL = 13.4 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 078-10; 71°09.39′ S, 13°59.30′ W to 71°09.36′ S, 13°58.81′ W; depth 2156–2147 m; 21 Feb. 2005; EBS supranet • 1 ♀ imm. (BL = 21.0 mm); Weddell Abyssal Plain, ANDEEP-III station 102-13; 65°34.32′ S, 36°31.32′ W to 65°34.40′ S, 36°31.07′ W; depth 4805–4803 m; 6 Mar. 2005; EBS epinet • 1 imm. (BL = 18.0 mm), 1 juv. (BL = 14.2 mm); Weddell Abyssal Plain, ANDEEP-III station 110-8; 65°00.52′ S, 43°02.09′ W to 65°00.68′ S, 43°02.16′ W; depth 4698–4696 m; 10 Mar. 2005; EBS supranet • 1 juv. (BL = 10.2 mm); Drake Passage, NW of Elephant Island, ANDEEP-I station 042-2; 59°40.29′ S, 57°35.43′ W to 59°40.42′ S, 57°35.27′ W; depth 3683–3680 m; 27 Jan. 2002; EBS epinet • 1 ♂ subad. (BL = 36.2 mm), 1 ♀ imm. (BL = 31.8 mm), 2 juv.; same collection data as for preceding; supranet • 1 ♀ subad. (BL = 45.5 mm); South Shetland area, NNW of Elephant Island, ANDEEP-I station 043-8; 60°27.12′ S, 56°05.10′ W to 60°27.24′ S, 56°05.25′ W; depth 3961.2–3962.4 m; 4 Feb. 2002; EBS epinet • 1 ♂ ad. (in 2 parts, BL = 47.8 mm), 2 ♂♂ imm. (BL = 17.1–20.9 mm), 1 ♀ imm. (BL = 19.9 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS epinet • 9 ♂♂ ad. (BL = 37.2–48.2 mm), 4 ♀♀ ad. (BL = 41.5, 46.2, 48.0, 48.9 mm), 6 subad., 11 imm., 52 juv.; same collection data as for preceding; supranet • 1 juv. (BL = 4.7 mm, in separate vial); same collection data as for preceding; supranet • 1 ♀ imm. (BL = 44.1 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 099-4; 61°06.41′ S, 59°16.55′ W to 61°06.24′ S, 59°16.79′ W; depth 5190.4–5190.4 m; 12 Feb. 2002; EBS supranet.

Type locality and distribution

In the original description, Willemoes-Suhm (1874) did not indicate which of the two potential localities near Crozet Island had yielded the new species. According to the station list of the Challenger Expedition (Murray 1895), this species was encountered only at station 147, i.e., 46°16′ S, 48°27′ E between Marion Island and Crozet Island, bottom (= trawling) depth 1600 fathoms (2926 m). This position is therefore regarded as the type locality. According to Hernández-Payán & Hendrickx (2020) and Daneliya (2023) this species is known from the Arctic, Atlantic, Mediterranean, Pacific and the Southern Ocean at depths of 728–7200 m. The ANDEEP records are within previously known distribution ranges.

Subfamily Erythropinae Hansen, 1910
Tribus Erythropini Hansen, 1910

Genus ***Dactylamblyops*** Holt & Tattersall, 1906

Dactylamblyops Holt & Tattersall, 1906b: 9 (Antarctic).
Chalcophthalmus Illig, 1906: 200, fig. 7 (junior synonym).

Dactylerythrops – Illig 1906: 199–200, fig. 6 (invalid generic assignment); 1930: 424 (in synonymy).
Dactylamblyops – W.M. Tattersall 1908: 29 (amended definition). — Tattersall & Tattersall 1951: 260–261 (diagnosis). — Ii 1964: 279–283 (key to species in the Far East, diagnosis). — Pillai 1965: 1706 (key to species in Indian waters, diagnosis). — Mauchline 1980: 27 (taxonomy, in key to genera). — Murano 1981: 275–278 (definition of species groups, key to species). — Kazmi *et al.* 1999: 149 (Arabian Sea, in taxa list, in key). — Nouvel *et al.* 1999: 79 (taxonomy, in list of genera). — San Vicente 2010: 44, 59 (Antarctic, diagnosis, key to species). — San Vicente & Cartes 2011: 463–464 (key to species of *hodgsoni*-group). — Petryashov 2014a: 149 (biogeography, Antarctic). — Wittmann *et al.* 2014: 334 (taxonomic assignment).— Wittmann & Chevaldonné 2021: 199, 208, 211 (morphology, sensory organs). — Mees & Meland 2024: Aphia-ID 119851 (accepted).
Chalcophthalmus – Illig 1930: 425 (in synonymy). — Mees & Meland 2024: Aphia-ID 226149 (unaccepted).

Diagnosis

Carapace normal. Eyes stalked, set apart, lateral margins not produced in a finger-like non-sensory process; stalk with ocular papilla; visual elements incomplete. Appendix masculina well developed. Antennal peduncle with three segments in linear arrangement; lateral margin of scale being bare up to an apical tooth or (in *D. latisquamosus*) only to a subapical tooth. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile, endopods 3–8 with unsegmented carpus separated from 1–2-segmented propodus by an oblique articulation. Female with three pairs of oostegites. Female pleopods reduced to uniramous setose plates. Male pleopods biramous, setose, no spines; endopod 1 unsegmented, endopods 2–5 and all exopods multi-segmented. Both rami of uropods unsegmented, setose all around; endopod with or without spine. Telson normal, no lateral constriction, no terminal incision, lateral margins not serrated; terminal and part of lateral margins with spines, no setae.

Type species

Dactylamblyops Hodgsoni Holt & Tattersall, 1906, by original designation according to ICZN (1999).

Revised combinations

Dactylamblyops laticauda Birstein & Tchindonova, 1958 is here recombined as *Amblyopsoides laticauda* (Birstein & Tchindonova, 1958) comb. nov. (see below). The binomen *Dactylamblyops japonica* Ii, 1964 is here acknowledged based on the species having an antennal scale with a bare lateral margin up to a large apical tooth. In contrast, the type species of *Hyperamblyops* Birstein & Tchindonova, 1958, i.e., *H. nana* Birstein & Tchindonova, 1958, shows an antennal scale with a setose outer margin not ending in a tooth. Accordingly, the recombination of *D. japonica* Ii, 1964 as *H. japonica* (Ii, 1964) by Murano (1975) is not acknowledged here.

Species included (16 species acknowledged)

- *D. atlanticus* Murano & Mauchline, 1999 from the NE Atlantic: Ireland Trough, 55° N 12° W, depth 2500 m (Murano & Mauchline 1999)
- *D. benthophilus* sp. nov. from the Southern Ocean: South Sandwich Trench, Weddell Sea, Powell Basin, Drake Passage, 58–71° S, 14–65° W, depth 756–4805 m
- *D. corberai* San Vicente & Cartes, 2011 from the Mediterranean, 38–41° N, 2–22° E, depth 358–1858 m (San Vicente & Cartes 2011; San Vicente 2017)
- *D. fervidus* Hansen, 1910 from the Indian Ocean: off Moluccas, 1° S, 127° E, depth ≤ 1500 m (Hansen 1910)
- *D. goniops* W.M. Tattersall, 1907 from the NE Atlantic: Ireland, Faroes, Bay of Biscay, 44–60° N, 2–12° W, depth 585–1331 m (W.M. Tattersall 1907; Tattersall & Tattersall 1951; Nouvel & Lagardère 1976; Frutos & Sorbe 2013; San Vicente *et al.* 2013; Rios *et al*. 2022)
- *D. hodgsoni* Holt & Tattersall, 1906 from the Southern Ocean, 44–75° S, 80° E–9° W–162° W, depth 200–4200 m (Holt & Tattersall 1906b; Zimmer 1914; Birstein & Tchindonova 1962; San Vicente & Cartes 2011; Wittmann & Ariani 2019; Wittmann & Chevaldonné 2021)
- *D. iii* Nouvel & Lagardère, 1976 from the NW Pacific: off Japan, 34–35° N, 138–140° E, depth 70–1300 m, ≤ 2000 m (Ii 1964; Nouvel & Lagardère 1976; Murano 1981; Wittmann & Ariani 2019; Wittmann & Chevaldonné 2021)
- *D. japonicus* Ii, 1964, from the NW Pacific: off Japan, 34–35° N, 138–139° E, depth ≤ 2300 m (Ii 1964)
- *D. latisquamosus* (Illig, 1906) from Indonesia: off Sumatra, 10–0° N, depth ≤800 m (Illig 1906, 1930)
- *D. murrayi* W.M. Tattersall, 1939 from the Arabian Sea and Weddell Sea, total range 35° N–63° S, 28° W–139° E, depth ≤480 to 4543 m (W.M. Tattersall 1939; San Vicente & Cartes 2011; Wittmann & Ariani 2019; Wittmann & Chevaldonné 2021; present paper: 7)
- *D. pellucidus* Birstein & Tchindonova, 1958 from the NW Pacific: off Japan, Kuril-Kamchatka Trench, 30–42° N, 137–152° E, depth 4400–5140 m (Birstein & Tchindonova 1958; Golovan *et al*. 2019). Specimens from about 1000 m off Japan reported by Murano (1981) as *D. pellucida* are not acknowledged due to their having fewer (0–1 vs 4) spines on the endopod of the uropods and more (32 vs 25) spines on the lateral margins of the telson, compared to the original description
- *D. sarsi* (Ohlin, 1901) from the Arctic Ocean: Spitzbergen (Ice Fjord), Amundsen Basin, 78–83° N, circumpolar (14° E–121° E–129° W), depth 50–4320 m (Ohlin 1901; Petryashov 1993, 2014b)
- *D. solivagus* Birstein & Tchindonova, 1958 from the N Pacific: Kurile-Kamchatka Trench, 50° N, 155° E, depth 500–640 m (Birstein & Tchindonova 1958)
- *D. stenurus* Murano, 1969 from the NW Pacific: off Japan, 32–35° N, 139–140° E, depth > 1000 m, ≤2300 m (Murano 1969, 1981)
- *D. tenellus* Birstein & Tchindonova, 1958, from the NW Pacific: off Japan, 28° N, 131° E, depth ≤6600 m (Birstein & Tchindonova 1958)
- *D. thaumatops* W.M. Tattersall, 1907 from the NE Atlantic: Iceland, Faroes to Bay of Biscay, 44–61° N, 2–17° W, depth 995–2295 m (W.M. Tattersall 1907; Tattersall & Tattersall 1951; Nouvel & Lagardère 1976; Corbari & Sorbe 2001; Astthorsson & Brattegard 2022)

Dactylamblyops murrayi W.M. Tattersall, 1939
Figs 1–2

Dactylamblyops murrayi W.M. Tattersall, 1939: 235–237, figs 9–10 (Arabian Sea).

Dactylamblyops murrayi – Ii 1964: 289–293, figs 74–75 (detailed description, NW Pacific). — Pillai 1964: 3 (in list of Indian species); 1965: 1706–1707, fig. 53 (diagnosis, in key). — Murano 1971: 47 (in species list for Central Japan); 1981: 281–282, fig. 8 (supplementary description). — Ariani *et al.* 1993: table 1 (statolith structure). — Kazmi *et al.* 1999: 149, fig. 31 (in illustrated key to Arabian Sea species). — San Vicente & Cartes 2011: 464, table 2 (in key to species of *Dactylamblyops*, distribution). — Wittmann & Ariani 2019: suppl. (statolith composition, record). — Wittmann & Chevaldonné 2021: table 1 (morphology, sensory structures). — Mees & Meland 2024: Aphia-ID 226736 (accepted).

Diagnosis

Covers adults of both sexes. All features within limits of generic diagnosis. Carapace with broad triangular rostrum almost extending to distal margin of proximal segment of antennular trunk. Eyes shortly set apart, dorsoventrally compressed, cornea not divided by a ledge; ocular papilla with length ⅓–½ cornea diameter. Antennal peduncle with oblique border between median and terminal segment (Fig. 1E). Scale unsegmented, length 4–5 times maximum width; scale extending ⅕–⅓ of its length beyond antennular trunk; mesial margin setose, bare outer margin ending in a tooth. Setose terminal lobe of scale not projecting beyond disto-lateral tooth. Thoracic endopods not subchelate. Females with three pairs of oostegites. Male pleopods with endopods 2–5 and all exopods 10-segmented, no modified setae. Endopod of uropods with a single spine on inner margin below statocyst. Telson linguiform, with slightly sigmoid lateral margins, and with convex, continuously rounded terminal margin; length twice maximum width near basis. Proximal half of telson with bare lateral margins, distal half of each lateral margin with 18–32 densely set spines increasing in length distally. Terminal margin with three pairs of spines in continuous series with the lateral spines; no small spine between pair of large paramedian spines. Telson with total of 43–70 spines.

Material examined (non-type)

SOUTHERN OCEAN • 1 ♀ ad. (damaged, estimated BL ≈15.6 mm); NE Weddell Sea, Kosminski Fracture Zone deep, ANDEEP-II station 138-6; 62°58.09′ S, 27°54.54′ W to 62°58.02′ S, 27°54.25′ W; depth 4542.5–4541.1 m; 17 Mar. 2002; EBS supranet.

Supplementary description

EYES (Fig. 1A–D). As in diagnosis. Eyes dorsoventrally compressed by a factor of 2.4, reaching beyond median segment of antennular trunk in obliquely lateral orientation. Eyes roughly pyriform in dorsal view but lens-shaped (bolster-shaped) in lateral view (Fig. 1D). Cornea transversely positioned distally on eyestalk. It contributes to about half of eye surface. Numerous, loosely set (Fig. 1B), imperfectly developed ommatidia reach surface. Eyestalk disto-laterally with large ocular papilla anteriorly extending beyond eye (Fig. 1A). Eye papilla ends in a toroid with pore in center (Fig. 1C). Organ of Bellonci near ocular papilla. Anterior margin of cephalon with subrostral, median process reaching only to proximal third of proximal segment of antennular trunk; this process wide-angled, distally bluntly rounded.

ANTENNAE (Fig. 1E). Antennula furnished with antennular bursa as in *D. benthophilus* sp. nov. Female lobe of *D. murrayi* with minute setae; this lobe smaller than that of *D. benthophilus* (Fig. 5B). Distal portions of antennal scale broken; its proximal fragment with setose mesial margin and bare lateral margin.

THORAX. Dorsal portions of thorax and carapace including rostrum broken. All thoracopods broken, only sympods and oostegites remaining. Presence of 1–2 long, thick, densely barbed setae on membranous joints between at least thoracic sternites 6–7 and their respective sympods.

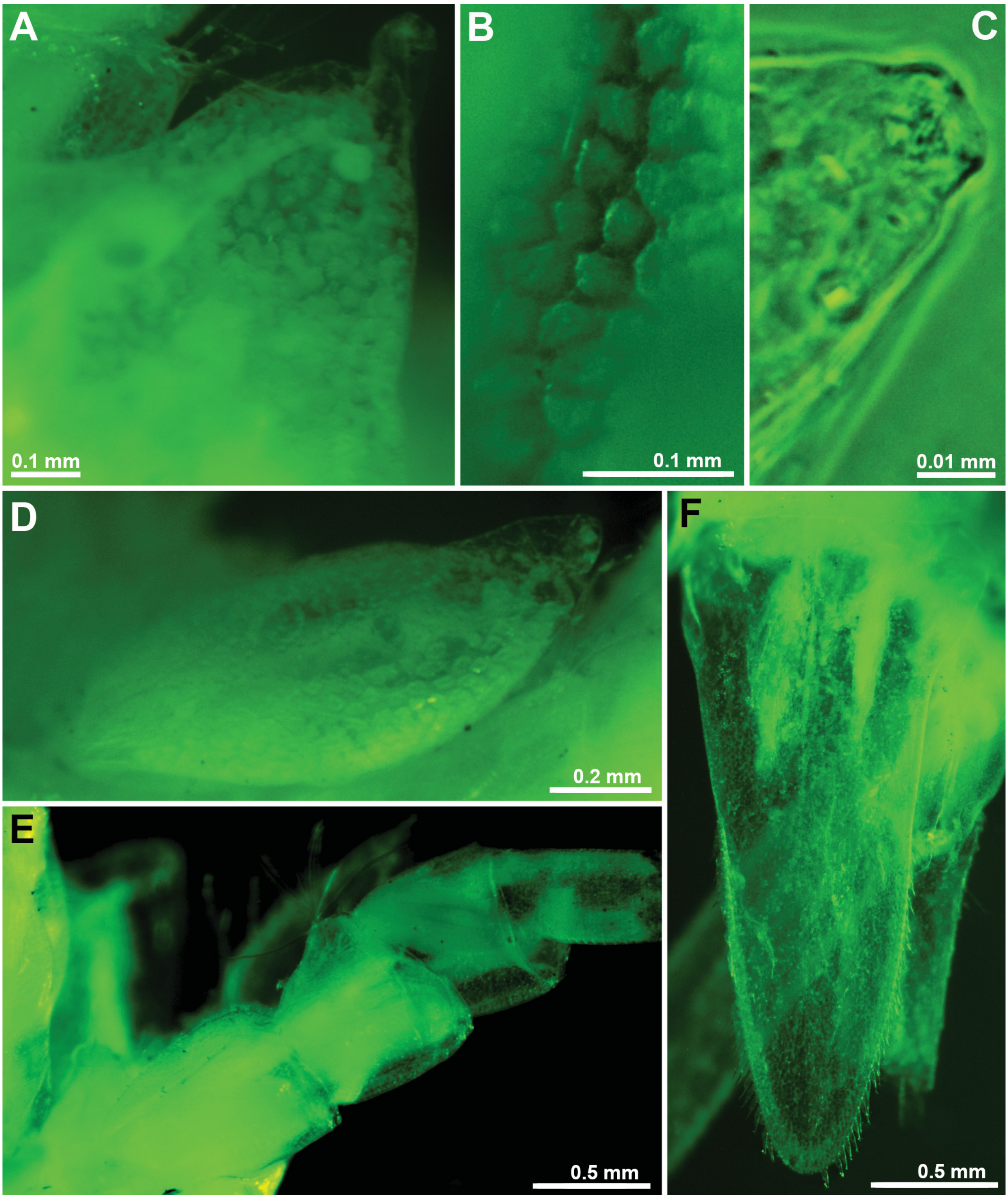

Fig. 1. *Dactylamblyops murrayi* W.M. Tattersall, 1939, adult female with BL of 15.6 mm. **A**. Distal ⅔ of right eye, dorsal view. **B**. Ommatidia, ventral view. **C**. Tip of ocular papilla, dorsal view. **D**. Right eye, lateral view. **E**. Antennal peduncle, ventral view. **F**. Telson, dorsal view.

Marsupium (Fig. 2A–C). Formed by three pairs of setose oostegites strongly increasing in size caudally. Each oostegite of present specimen proximally with brush of essentially smooth setae, some of which are distally armed with a few minute stiff bristles. Only oostegites 2–3 with series of setae along lower and caudal margins, these setae with caudally increasing incidence and size of barbs. Inner face of each oostegite with one flagellate seta showing no suture between thick handle and long slender flagellum. Only oostegite 1 with an additional smaller seta of that kind subbasally on lower margin. Only oostegite 3 with ≈ 30 slender whip setae (suture present between handle and flagellum) loosely scattered over outer face near ventral and caudal margins.

Pleon. Contributes 52% and telson 16% to estimated total length of 15.6 mm in this damaged adult female. Pleomeres 1–5 are 0.6, 0.5, 0.5, 0.5 and 0.4 times as long as pleomere 6, respectively; this value is 1.2 for telson. Female pleopods unsegmented setose rods with pseudobranchial lobe; pleopod length increases caudally.

Tail fan (Figs 1F, 2D). Exopod of uropods 1.5–2.0 times as long as telson, endopod 1.1–1.5 times as long as telson. Statoliths composed of fluorite. Telson linguiform with converging, slightly sigmoid lateral margins. Proximal half of each lateral margin bare, distal half with ≈32 spines, estimated based on remnants of broken spines (Fig. 1F), spines on average increasing in length distally; most spines of terminal margin broken.

Type locality and distribution

The type locality by monotypy is the Indian Ocean, northern Arabian Sea, 23°02.5′ N, 64°15.9′ E, oblique tow in 1500–0 m (W.M. Tattersall 1939; coordinates in Sewell 1935). This species was reported

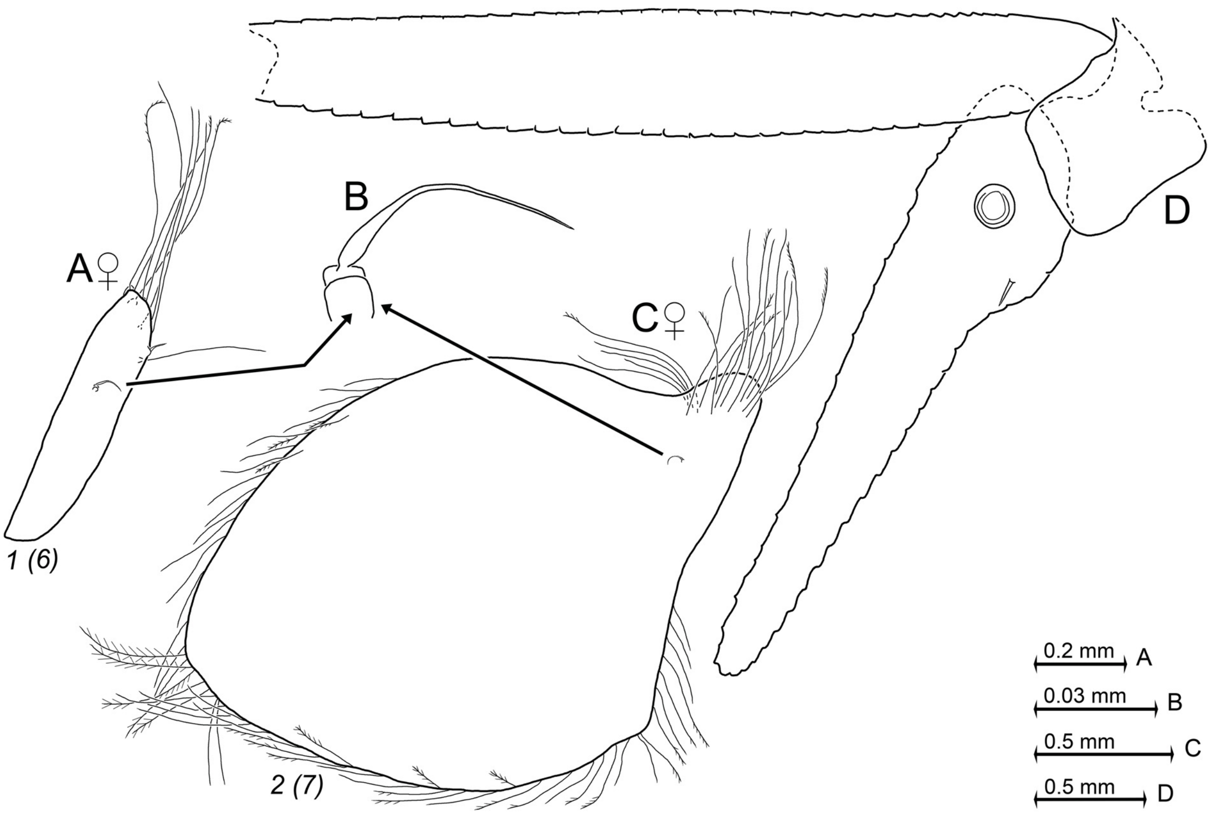

Fig. 2. *Dactylamblyops murrayi* W.M. Tattersall, 1939, adult female with BL of 15.6 mm. **A**. Oostegite 1, inner face. **B**. Detail of A, showing flagellate seta. **C**. Oostegite 2, inner face. **D**. Uropods, ventral view, setae omitted.

by Ii (1964), Murano (1981) and Wittmann & Chevaldonné (2021) from the NW Pacific, deep waters off Japan, 28° N–36° N, 129° E–140° E, depth 480–1200 m. All other previously published references refer to materials from these localities. The present ANDEEP record from the Southern Ocean, NE Weddell Sea, 63° S, 28° W, depth 4541–4543 m, represents strong latitudinal and bathymetric extensions of the known range. The species, so far classified as panthalassic in meso- to bathypelagic depths, has now also been recorded from bathybenthic habitats.

Dactylamblyops benthophilus sp. nov.
urn:lsid:zoobank.org:act:986D4F91-F730-429C-9071-BC6015BE7D26
Figs 3–8

Dactylamblyops sp. A – Wittmann & Chevaldonné 2021: fig. 24c–d.

Diagnosis

Covers adults of both sexes. All features within limits of generic diagnosis. Carapace with triangular, distally broadly rounded rostrum covering only small portion of eyestalks. Eyes shortly set apart, pyriform to sub-conical, dorsoventrally compressed; sub-conical cornea with residual visual elements, cornea not divided by a ledge; ocular papilla near antero-mesial edge, length of papilla ⅒–⅕ cornea diameter, not extending beyond cornea. Antennal peduncle with oblique border between median and terminal segment. Scale with small terminal segment, scale length 4.4–5.5 times maximum width; scale extending 0.3–0.4 of its length beyond antennular trunk; mesial margin setose, bare outer margin ending in a tooth. Setose terminal lobe of scale not projecting beyond disto-lateral tooth. Mouthparts normal, labrum rostrally rounded. Thoracic endopods not subchelate. Females with three pairs of oostegites. Endopods of male pleopods 1–5 with 1, 13–14, 14, 13–14 and 12–13 segments, exopods with 13–14, 14, 14, 14 and 14 segments, respectively. No modified setae on pleopods of both sexes. Endopod of uropods with one minute spine on inner margin below statocyst. Telson elongate triangular with slightly sigmoid, continuously converging lateral margins, length 1.6–1.9 times maximum width near basis; proximal half with bare lateral margins, distal half of each lateral margin with 24–31 densely set spines increasing in length distally; apex with three large spines in continuous series with lateral spines, no small spine and no seta between large apical spines; telson with total of 51–64 spines. Differentiation from similar taxa given in 'Discussion'.

Etymology

The species name is an adjective with Latinized masculine ending, underlining the more benthophilic habit compared with the sympatric, more pelagic congener *D. hodgsoni*.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♂ ad. (BL = 22.6 mm); South Sandwich Trench, E of Montagu Island, ANDEEP-II station 141-10; 58°25.08′ S, 25°00.77′ W to 58°24.93′ S, 25°00.95′ W; depth 2313–2281 m; 23 Mar. 2002; EBS supranet; ZMH 64669.

Paratypes

SOUTHERN OCEAN • 2 ♀♀ ad. (BL = 20.9–25.4 mm), 2 damaged juv.; same collection data as for holotype; ZMH 64672 • 1 ♂ ad. (BL = 19.9 mm); SE Weddell Sea, ANDEEP-III station 074-6; 71°18.35′ S, 13°57.71′ W to 71°18.28′ S, 13°57.31′ W; depth 1030–1040 m; 20 Feb. 2005; EBS supranet; ZMH 64673 • 1 ♀ ad. (BL = 23.9 mm), 1 ♀ subad. (in 2 parts, BL = 16.0 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 078-10; 71°09.39′ S, 13°59.30′ W to 71°09.36′ S, 13°58.81′ W; depth 2156–2147 m; 21 Feb. 2005; EBS epinet; ZMH 64675 • 1 ♂ ad. (fragment, BL = 17.0 mm, on slides); same collection data as for preceding; ZMH 64674 • 4 ♀♀ ad. (BL = 17.8–24.0 mm), 1 ♂ ad. (BL =

20.0 mm), 2 ♀♀ subad., 3 ♂♂ subad., 1 imm.; same collection data as for preceding except for occurrence in EBS supranet; ZMH 64677 • 1 ♀ ad. (BL = 21.8 mm, on slides); same collection data as for preceding; ZMH 64676 • 1 ♂ ad. (BL = 20.3 mm, on slides); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS supranet; ZMH 64670 • 1 ♂ ad. (BL = 24.4 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 114-4; 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W; depth 2914–2920 m; 18 Feb. 2002; EBS supranet; ZMH 64671 • 1 ♀ ad. (BL = 19.3 mm), 1 ♂ subad. (damaged, BL ≈ 15 mm); Bellingshausen Sea, NW of Anvers Island, ANDEEP-III station 153-7; 63°19.31′ S, 64°36.94′ W to 63°19.15′ S, 64°37.18′ W; depth 2092–2118 m; 29 Mar. 2005; EBS supranet; ZMH 64678.

Other material

SOUTHERN OCEAN • 1 juv. (BL = 6.7 mm); South Sandwich Trench, SE of Montagu Island, ANDEEP-II station 143-1; 58°44.69′ S, 25°10.27′ W to 58°44.49′ S, 25°10.47′ W; depth 773.9–755.6 m; 25 Mar. 2002; EBS epinet • 3 juv. (BL = 4.8–6.9 mm); same collection data as for preceding except for occurrence in supranet • 1 ♂ subad. (BL = 17.3 mm), 1 imm. (BL = 15.4 mm, in 2 parts), 1 juv.; NW Weddell Sea, ANDEEP-II station 132-2; 65°17.74′ S, 53°22.82′ W to 65°17.56′ S, 53°22.83′ W; depth 2086–2086 m; 6 Mar. 2002; EBS supranet • 1 ♀ subad. (BL = 16.7 mm); NW Weddell Sea, ANDEEP-II station 133-3; 65°20.15′ S, 54°14.35′ W to 65°20.06′ S, 54°14.51′ W; depth 1122–1119 m; 7 Mar. 2002; EBS supranet • 1 ♂ imm. (BL = 12.1 mm); Weddell Abyssal Plain, ANDEEP-III station 102-13; 65°34.32′ S, 36°31.32′ W to 65°34.40′ S, 36°31.07′ W; depth 4805–4803 m; 6 Mar. 2005; recovered from sediment in web mug • 1 ♀ imm. (BL = 7.9 mm); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 151-7; 61°45.52′ S, 47°07.68′ W to 61°45.42′ S, 47°08.04′ W; depth 1182–1185 m; 21 Mar. 2005; EBS epinet • 10 juv. (BL = 4.8–7.9 mm); same collection data as for preceding except for occurrence in supranet • 1 imm. (damaged, BL = 11.0 mm), 1 imm. (strongly damaged, BL ≈15 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS supranet • 1 juv. (BL = 6.7 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 105-7; 61°24.16′ S, 58°51.55′ W to 61°24.26′ S, 58°51.83′ W; depth 2297.9–2307.5 m; 12 Feb. 2002; EBS supranet.

Type locality and distribution

The type locality is ANDEEP II station 141-10: South Sandwich Trench, E of Montagu Island, 58°25.08′ S, 25°00.77′ W to 58°24.93′ S, 25°00.95′ W, depth 2313–2281 m. The species was recorded in most major parts of the W Antarctic examined, range 58–71° S, 14–65° W, depth 756–4805 m. It was captured in the supranet in 11 out of 14 successive mysid samples taken with a self-closing epibenthic sledge, suggesting a suprabenthic mode of life close above the deep-sea floor.

Description

Body length 17.8–25.4 mm (n = 9) in adult females, 17.0–24.4 mm (n = 6) in adult males. Rostrum measures 2–3% of BL, carapace without rostrum 31–36%, thorax 37–44%, pleon without telson 46–52% and telson 6–9%.

CARAPACE (Figs 3A, 4D). Normal, antero-lateral edges produced, broadly rounded (Fig. 4D). Cervical sulcus strong, cardial sulcus indistinct, posterior margin concave, terminal indentation broadly rounded. No pores seen (though not excluded). Carapace leaving ½–1½ thoracomeres mid-dorsally exposed.

EYES (Figs 3A, 4D, 5F). Ocular symphysis with unpaired, proximally trapeziform, distally triangular, apically rounded interocular lobe (Fig. 4D), in dorsal view mistakable with an anterior extension of rostrum. Eyestalks smooth all around, 0.7–0.9 times as long as terminal segment of antennular trunk. Cornea obliquely, laterally positioned on eyestalk (Figs 3A, 4D), kidney-shaped in dorsal view, apparent

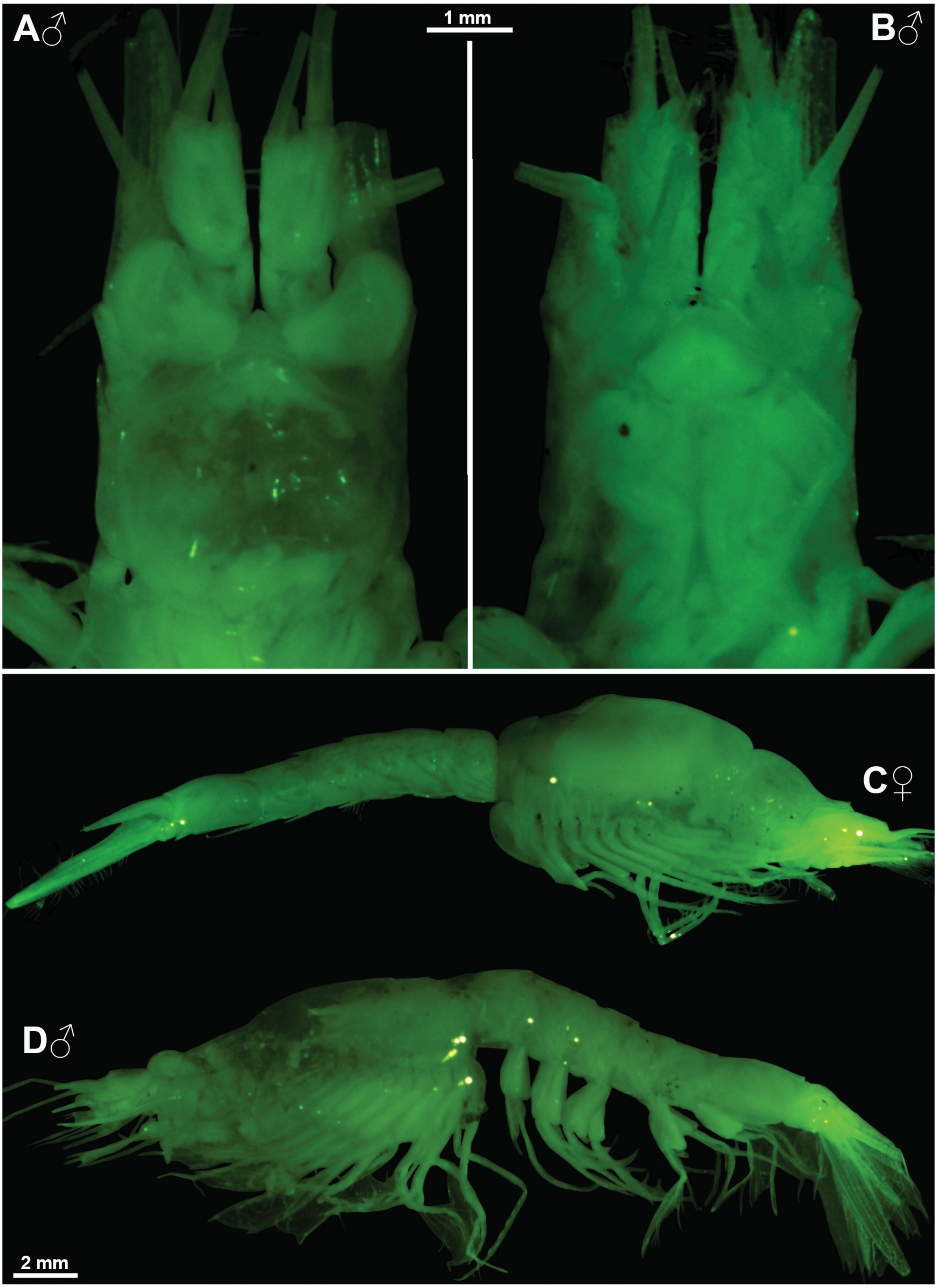

Fig. 3. *Dactylamblyops benthophilus* sp. nov. **A–B**. Cephalon of paratype, adult male with BL of 19.9 mm, dorsal (A) and ventral (B) views (ZMH 64673). **C**. Paratype, adult female 25.4 mm long, lateral view (ZMH 64672). **D**. Holotype, adult male 22.6 mm long, lateral view (ZMH 64669). A–D. Objects artificially separated from background.

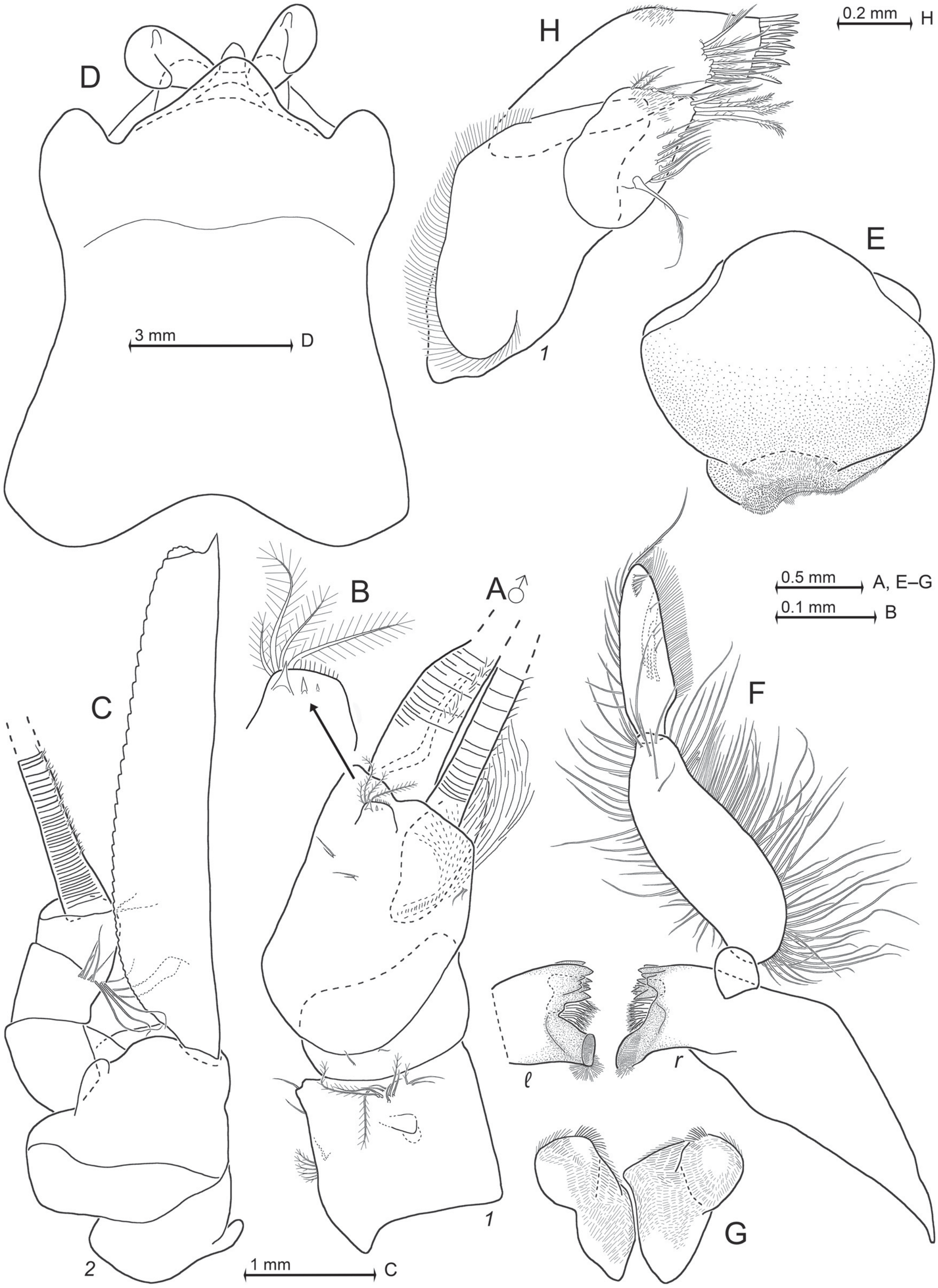

Fig. 4. *Dactylamblyops benthophilus* sp. nov., paratypes, adult males with BL of 20.3 mm (A–D, G: ZMH 64670), 17.0 mm (F, H: ZMH 64674) and adult female 21.8 mm (E: ZMH 64676). **A**. Male antennula, obliquely dorsal. **B**. Detail of A, showing disto-median lobe of antennular trunk. **C**. Antenna, dorsal view, setae of antennal scale omitted. **D**. Eyes and carapace expanded on slide, dorsal view. **E**. Labrum, ventral = aboral. **F**. Mandibles with right palpus, rostral view. **G**. Labium, caudal view; right lobe (visualized to the left) inclined with respect to the observation plane. **H**. Maxillula, caudal view.

length 0.7–0.8 of total eye length, width 0.3–0.4. Cornea appears whitish in ethanol-preserved material. Its antero-posterior extension 1.0–1.2 times length of terminal segment of antennular trunk. Eye papilla ends in a toroid with pore in center (Fig. 5F). Organ of Bellonci present near ocular papilla.

Antennula (Figs 4A–B, 5A–E). Antennular trunk measures 10–12% of BL. It extends half its length beyond eyes. Measured along dorsal midline, basal segment 0.3–0.4 of trunk length, median segment 0.1–0.2 and terminal segment 0.4–0.6. Length of basal segment 0.7–0.8 of width; mid-dorsally with deep antennular bursa (Figs 4A, 5C–D) leading down to a striated pad at bottom. Basal segment not produced at outer distal edge (Fig. 4A); no mid-ventral carina. Disto-median lobe (Fig. 4B) of terminal segment with three teeth increasing in size laterally, lobe disto-laterally with four barbed setae. Appendix masculina (Figs 4A, 5A) inserts ventrally near terminal margin of antennular trunk; appendix conical, apically rounded, 0.5–0.9 times as long as terminal segment of trunk, strongly setose. Female lobe (Fig. 5B) 0.3 times as long as terminal segment, well-developed, albeit less strongly setose. Wittmann & Chevaldonné (2021: fig. 24c–d) correctly figured this lobe as inserting ventrally but accidentally indicated it in text as inserting dorsally. Flagella large, width of outer flagellum measured near basis 1.3–1.7 times width of inner flagellum. Basal portion of outer flagellum with ventral callynophore bearing broad row of densely set aesthetascs (Fig. 5E) in both sexes. Callynophore 0.6–0.7 times as long as terminal segment of antennular trunk.

Antenna (Fig. 4C). With smooth cuticle all around, not considering setae and disto-lateral tooth of antennal scale. Sympod 2-segmented, with large end sac of antennal gland. Sympod angular on disto-lateral edge, not forming a tooth-like projection. Antennal scale measures 16–20% of BL, 1.4–1.7 times as long as antennular trunk and 2.2–2.4 times as long as antennal peduncle. Scale 4.4–5.5 times as long as wide. Peduncle 3-segmented, its basal segment contributes 41–44% to total length, median segment 28–31% and terminal segment 27–29%.

Labrum and labium (Fig. 4E, G). Labrum normal, rostrally forming a broad, rounded bulge; most caudal portions with strong lamellae and cover of scale-like fringes. Paired labia with stiff and normal setae, no spines, no teeth.

Mandibles (Fig. 4F). Palp 0.6–0.7 times as long as antennal scale. Palp not hispid, its basal segment without setae, remaining segments densely setose along mesial and lateral margins. Basal segment contributes 10–13%, median segment 49–54% and apical segment 37–40% to total palp length. Length of median segment 2.6–3.2 times maximum width; its mesial margin convex, lateral margin sigmoid. Length of apical segment 3.3–3.9 times maximum width. Masticatory part of mandibles normal, left and right mandibles alike: pars incisiva of both mandibles with 4–5 large teeth, and digitus mobilis with 5–9 teeth. Processus molaris with strong grinding lamellae not ending in teeth and with dense bundle of stiff bristles on proximal edge. Pars centralis of left mandible with series of 10–13 spines becoming more slender and with greater numbers of stiff bristles proximally, distalmost spine stout with few bristles. Pars centralis of right mandible with 6–9 slender, subequal spines bearing numerous stiff bristles.

Gut (Fig. 6). Foregut with lateralia, infoldings and superomedianum of cardiac chamber densely covered by smooth, slender setae and spines. Lateralia anteriorly with dense series of slender, apically coronate, bluntly pronged spines (Fig. 6B) of various length and with slender, mostly blunt spines, in part with minute apical tooth (Fig. 6C). Posterior part of lateralia on each side of foregut with a complex of three unilaterally finely serrated spines arising from a common base (Fig. 6D_2) and a second complex with four medium-sized plus at least three small spines of that kind (Fig. 6D_1). Dorsolateral infoldings on each side with a pair of larger, unilaterally more coarsely serrated, bent spines (Fig. 6E). Content of five foreguts mainly masticated, unidentifiable organic material (detritus), mineral particles, foraminifera and one fragment of a polychaete larva. Telson with ventrally prominent anal lobe (Fig. 6F–G, dashed

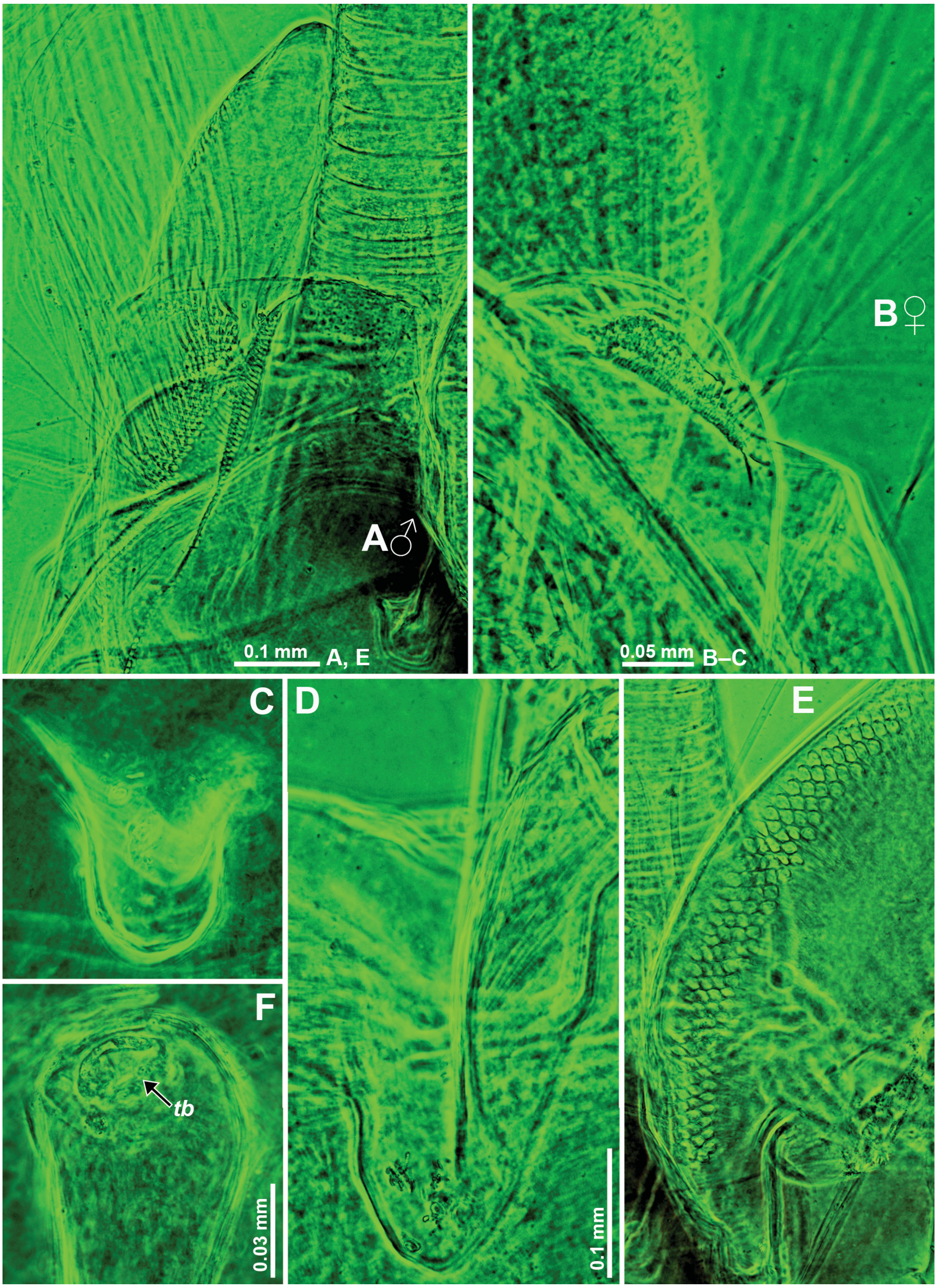

Fig. 5. *Dactylamblyops benthophilus* sp. nov., paratypes, adult males with BL of 20.3 mm (A, C, E: ZMH 64670), 17.0 mm (F: ZMH 64674) and adult female 21.8 mm (B, D: ZMH 64676). **A**. Appendix masculina, in dorsal view with focus on ventral face. **B**. Female lobe, ventrally on terminal segment of antennular trunk. **C–D**. Antennular bursa in median position at basal segment of antennular trunk, dorsal (C) and lateral (D) views. **E**. Longitudinal ribbon of setal bases (callynophore) on mesio-ventral face of lateral antennular flagellum, ventral view. **F**. Tip of ocular papilla, arrow points to toroidal bulge (*tb*).

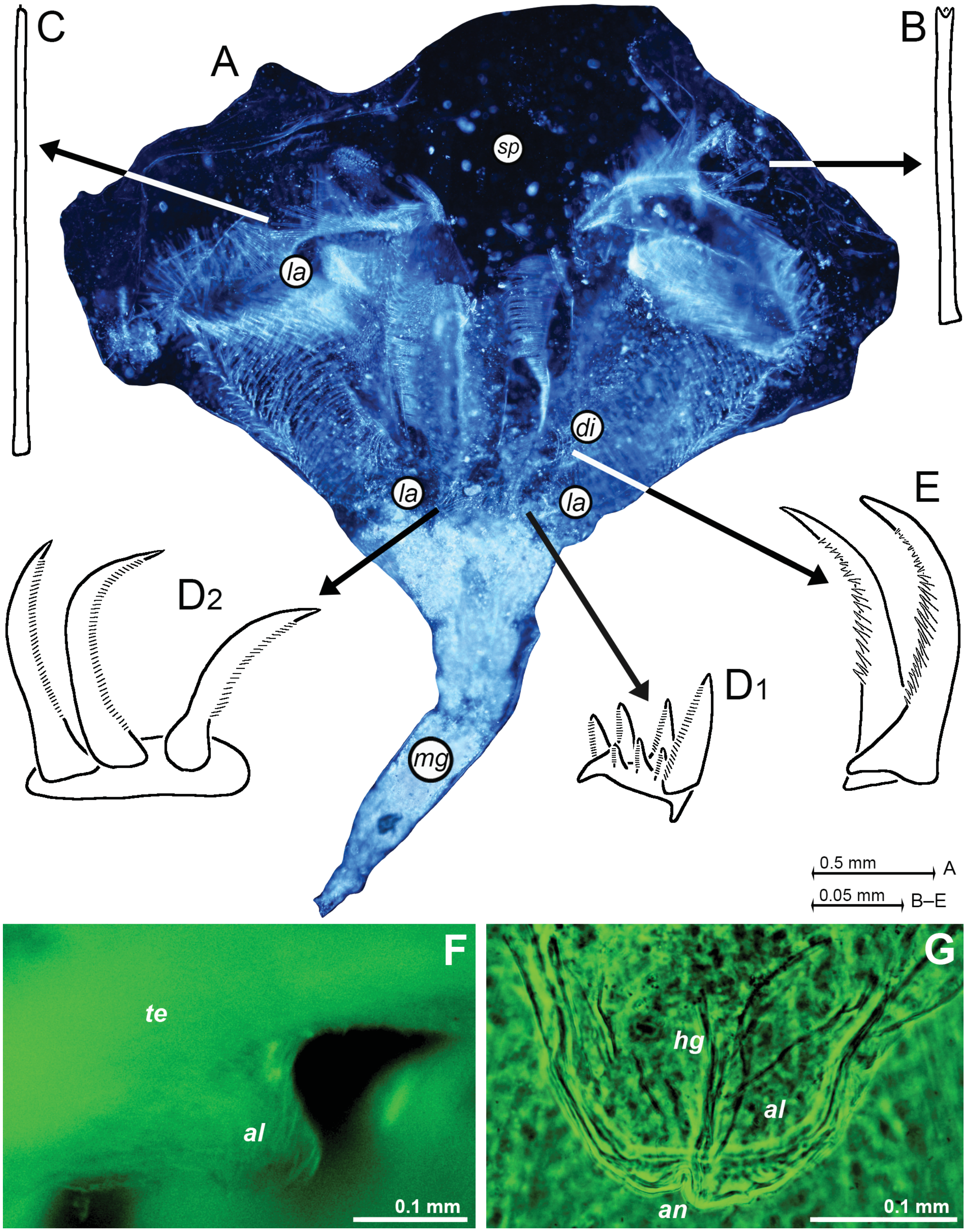

Fig. 6. Gut in *Dactylamblyops benthophilus* sp. nov., paratypes, adult males with BL of 20.3 mm (A, G: ZMH 64670), 17.0 mm (B–E: ZMH 64674) and subadult male 15 mm (F: ZMH 64678). **A**. Foregut expanded on slide, ventral view. **B–E**. Spines of foregut in another specimen. **F**. Basal portion of telson with anal lobe in loco, lateral view. **G**. Anal lobe expanded on slide; dorsal aspect of ventral structure focused through the artificially transparent telson. Abbreviations: *al* = anal lobe; *an* = anus; *di* = dorsolateral infolding; *hg* = hindgut; *la* = lateralia; *mg* = midgut; *sp* = storage space; *te* = telson. A. Object artificially separated from background.

line in Fig. 8G). Lobe caudally bifid with thick cuticle, superficially resembling glutei separated by an intergluteal furrow (Fig. 6G).

Maxillula (Fig. 4H). Distal segment with 10–12 strong spines on transverse terminal margin, several spines subterminally serrated on outer margin. This segment subterminally with 7–10 setae bearing stiff barbs; total of 7–9 pores flanking outer (= most ventral = aboral) seta on both its sides. Endite of maxillula terminally with three large, distally spiny setae, on both sides accompanied by numerous less strong setae. As a striking feature, most proximal seta of endite long, slender and curved backward.

Maxilla (Fig. 7A). Sympod with four mesial lobes, densely setose along their disto-mesial margins. Large proximal lobe with large, dense fan of simple setae. Only one large seta extends beyond this fan, on caudal face, at margin near distally neighboring lobe; this seta bears a dense unilateral series of stiff barbs along its distal half. It is proximally followed by loose series of 7–13 shorter, thin setae unilaterally microserrated at least on their distal half (these setae covered by fan in Fig. 7A); this series extends over ⅔ of fan length. All four lobes with furry stripes of fine hairs on mesial portions of only caudal face; this is below drawing plane, thus stripes not visualized in Fig. 7A. Exopod of maxilla ends shortly before terminal margin of basal segment of palp. Exopod with total of 24–33 plumose setae all along lateral margin, subapically with only 0–1 seta on mesial margin; tip with 1–2 comparatively large setae; lateral margin with 19–26 intermediate-sized setae, subequal among each other, plus 3–5 large setae in most basal position. Mesial margin bare except, if any, for above-mentioned subapical seta. Maxillary palp with apical segment contributing 55–64% to palp length, no spines. Apical segment 1.6–1.8 times as long as maximum width. Basal segment less wide, subbasally with mesial bulge (endite) bearing 5–7 barbed, basally thick setae. Distal ¾ of apical segment all around with barbed setae except for a bare sector along central third of terminal margin. Mesial third of this segment with furs of tiny hairs on rostral and caudal faces (only rostral fur visualized in Fig. 7A).

Thorax (Figs 3C–D, 7B–K). Intersegmental joints between sternites and sympod 2 with basally thick, all along barbed seta accompanied by five smaller barbed setae (Fig. 7F). Sympods 3–8 with one large seta accompanied by one smaller seta of that type (Fig. 7H). No such setae on sympod 1. Thoracic sternites to various extent covered by fur of minute hairs in both sexes (shaded areas in Fig. 7B). Basal plates of thoracic exopods with smooth cuticle, length twice maximum width (Fig. 7B), plates widening distally up to ⅔ of length, plates with rectangular disto-lateral corner. Epipod 1 leaf-like, about as long as combined ischium, merus and carpus of endopod 1, no seta (Fig. 7B). Endopods with smooth cuticle, not considering setae and pores. Coxa of endopod 1 (Fig. 7B) with small mesial lobe apically bearing one barbed seta; basis with large, setose endite, remaining segments without endite; dactylus with field of about 40–60 pores, diameter <2 µm, on caudal face (Fig. 7C, E). Endopods 1–2 with six segments (Fig. 7B, F), remaining endopods with eight segments counting from basis to dactylus (Fig. 7H). Carpus 3–8 unsegmented; strongly oblique suture between carpus and propodus; less oblique, almost transverse suture between two segments of propodus (Fig. 7H). Dactyli 3–8 more slender than dactyli 1–2. Dactylus 1 with almost straight, subapically slightly serrated nail (Fig. 7C–D); dactylus 2 not reflexed; dactyli 2–8 with short, more slender, slightly bent, smooth nail (Fig. 7G, I). Endopod 3 extends shortly beyond antennular trunk when stretched anteriorly, endopod 8 to mandibles. Endopod 8 extends to pleomere 4 when stretched posteriorly. Penes (Fig. 7K) with subterminal ejaculatory opening, with setose, terminally rounded caudal lobe, and with non-setose, terminally rugose, triangular rostral lobe.

Marsupium (Fig. 7J). Empty in all females of this material. Oostegite length increases by a factor of 2.8 from oostegite 1 to 3. Basal portions of dorsal margin without setae in oostegites 1–2 and from basal to subapical portions in oostegite 3. All oostegites with smooth cuticle, not considering setae. Their ventral and anterior margins plus part of posterior margin with dense series of barbed setae. Posterior parts of oostegites 1–3 on inner face with comparatively long setae microserrated on their distal half.

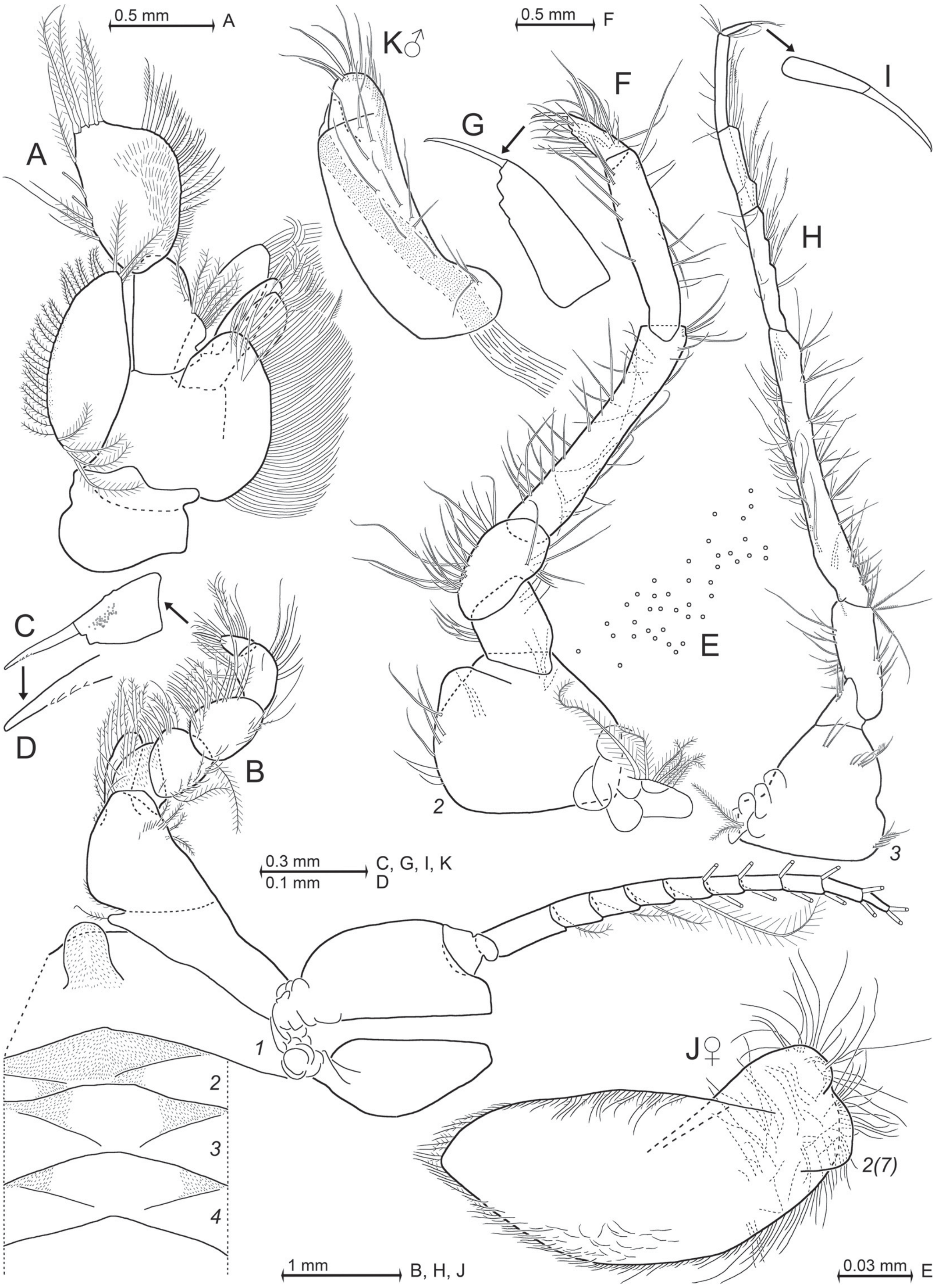

Fig. 7. *Dactylamblyops benthophilus* sp. nov., paratypes, adult males with BL of 20.3 mm (A, F–G: ZMH 64670), 17.0 mm (H–I, K: ZMH 64674) and adult female 21.8 mm (B–E, J: ZMH 64676). **A**. Maxilla, rostral view. **B**. Thoracopod 1 with epipod (caudal) and sternites 1–4 (ventral). **C–D**. Details of B, showing dactylus with nail and pore field (C), secondary detail (D) showing tip of nail. **E**. Detail of C showing pore field of dactylus 1, pore diameters not to scale. **F–G**. Thoracic endopod 2 with sympod (F), rostral view; detail (G) showing dactylus with nail, setae omitted. **H–I**. Thoracic endopod 3 with sympod (H), rostral view; detail (I) showing dactylus with nail, setae omitted. **J**. Oostegite 2, outer face. **K**. Penis, caudal view.

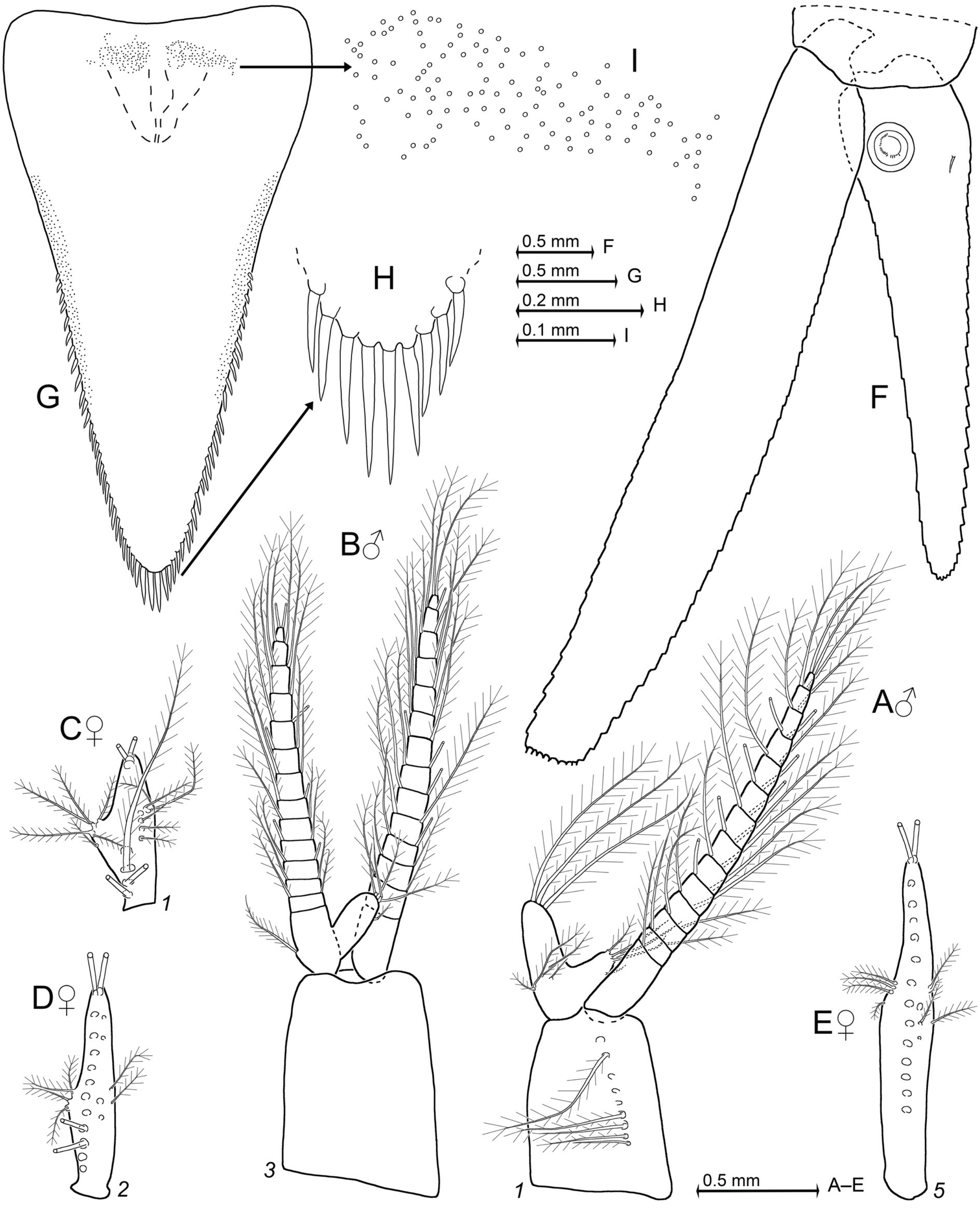

Fig. 8. *Dactylamblyops benthophilus* sp. nov., paratypes, adult males with BL of 17.0 mm (A–B: ZMH 64674), 20.3 mm (F–I: ZMH 64670) and adult female 21.8 mm (C–E: ZMH 64676). **A**. Male pleopod 1, rostral = lateral view. **B**. Male pleopod 3, caudal = mesial view. **C**. Female pleopod 1, rostral view. **D–E**. Female pleopods 2 and 5, rostral view, most setae broken. **F**. Uropods, ventral, setae omitted. **G–I**. Telson including its ventral (dashed) anal lobe visible through the artificially transparent tissue (G), dorsal view; details showing apical spines (H) and right pore field (I). G, I. Pore diameters and scales of telson not to scale.

Only oostegites 2–3 with numerous, on average shorter, slender smooth setae on outer face. These setae positioned all along ventral portions in large oostegite 3, and only in median to subapical portions on ventral fifth of oostegite 2.

Pleon (Figs 3C–D, 8A–E). Length of pleomeres 1–5 is 0.5–0.8, 0.6–0.8, 0.5–0.6, 0.4–0.6 and 0.5–0.7 times length of pleomere 6, respectively. Pleomere 6 shorter than combined length of pleomeres 4–5. Male pleopods with longitudinal series of setae on lateral (= rostral) face of sympod 1 (Fig. 8A), no setae on sympods 2–5 (Fig. 8B). Basal segment of endopod in all male pleopods with subrectangular, terminally rounded, setose pseudobranchial lobe; exopods of subequal size. Size of female pleopods increasing caudally. Female pleopod 1 with residual differentiation of pseudobranchial lobe (endopod), in pleopods 2–5 represented only by a short setose bulge. Scutellum paracaudale well rounded, sinusoid.

Tail fan (Fig. 8F–I). Telson, endopod and exopod of uropods are 1.0–1.2, 1.2–1.4 and 1.8–2.1 times length of sixth pleomere, respectively. Exopod of uropods (Fig. 8F) straight, 1.8–2.1 times as long as telson, endopod 1.1–1.5 times as long as telson and 0.7 times as long as exopod. Exopod extends 0.3–0.4 times its length beyond endopod and 0.5–0.6 times beyond telson; endopod extends 0.3 times its length beyond telson. Exopod with slightly convex, almost straight lateral margin and with weakly convex mesial margin. Both margins about parallel on proximal half, then converging up to truncate terminus with rounded edges. Margins of endopod converging in a V-shaped manner up to narrowly blunt terminus. Uropods (Fig. 8F) with smooth cuticle, not considering setae and single spine. Statoliths composed of fluorite, form sub-hemispherical with roughly plane fundus, as also found in other Erythropinae by Wittmann *et al.* (1993). Diameter 0.25–0.35 mm (n = 6), thickness ⅔ of diameter; no tegmen differentiated. Statolith formula 1 + 3 + (5–6) + (10–19) = (20–29) (n = 4). Telson (Fig. 8G, I) with pair of paramedian subbasal fields of 90–125 pores (Fig. 8G–I), pore diameters < 3 µm. Telson with 2–7 µm long and 0.5–0.8 µm wide triangular scales (as in Fig. 36B) organized in clusters of about 10–25 scales. Clusters together form a narrow longitudinal ribbon (nearly as in Fig. 19D but shorter and partly broader) proceeding close to each lateral margin along ⅓–⅔ of telson length from basis (shaded areas in Fig. 8G).

Tribus Thalassomysini Nouvel, 1942
Genus *Thalassomysis* W.M. Tattersall, 1939

Thalassomysis tattersalli Nouvel, 1942
Figs 9–10

Thalassomysis tattersalli Nouvel, 1942: 6–8, figs 12–17 (preliminary diagnosis).

Thalassomysis Tattersalli – Nouvel 1943: 59–61, figs 85–102 (detailed description).
Thalassomysis tattersalli – Murano & Krygier 1985: 692–693, fig. 4 (range extension, supplementary description). — San Vicente 2017: table 1 (distribution range). — Mees & Meland 2024: AphiaID 931983 (accepted).

Diagnosis

Covers adult female and non-adult males (the latter described here for the first time). Carapace normal, anterior margin with semicircular projection covering part of eyestalks. Eyes separately set in sublateral position, dorsally with papilla. Eye structure and size of papilla varying with body size (see Notes below and 'Discussion'). Antennular trunk with three segments separated by transverse articulations. Antennal peduncle 4-segmented with oblique border between small third and larger, dorsally overlapping fourth segment. Antennal scale entire, setose all around, extending half its length beyond antennal peduncle and ⅖ beyond antennular trunk. Scale six times as long as wide, setose lateral margins parallel, tip rounded, no tooth. Labrum rostrally rounded, caudally strongly asymmetrical due to mesially rugose, distally rounded caudal projection from lateral third of caudal margin. Labium with transverse distal margin. Thoracic endopods 1–2 normal; endopods 3–8 and all exopods unknown. Female with four pairs of oostegites. Pleopods 1–5 of subadult male setose, no spines; pleopod 4 biramous, remaining pleopods uniramous. Female pleopods reduced to uniramous setose plates increasing in length caudally. Pleomere 6 with pair of carinae running along ventro-lateral edge and narrowing caudally. Both rami of uropods unsegmented, setose all around, no spines. Telson triangular, slender, 3.2–3.7 times as long as maximum width at basis, and 15–22 times as long as maximum width at convex terminus, lateral margins not serrated, with 11–17 spines on distal ⅔, spines distally somewhat discontinuously increasing in length and width; narrow terminal margin with four spines; total of 27–37 spines, no setae.

Material examined

SOUTHERN OCEAN • 1 ♂ imm. (BL = 13.4 mm, on slides); northern Weddell Abyssal Plain, ANDEEP-II station 135-4; 65°00.06′ S, 43°01.19′ W to 64°59.97′ S, 43°00.91′ W; depth 4677.6–4678.2 m; 11 Mar. 2002; EBS supranet • 1 ♀ imm. (BL = 10.3 mm); eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, ANDEEP-III station 059-5; 67°29.74′ S, 00°01.93′ W to 67°29.61′ S, 00°02.19′ W; depth 4655–4655 m; 14 Feb. 2005; EBS supranet • fragment of one subad. ♂ (posterior ⅔ of body, estimated BL ≈ 14 mm, on slides); Weddell Abyssal Plain, ANDEEP-III station 088-8; 68°03.66′ S, 20°27.90′ W to 68°03.61′ S, 20°27.52′ W; depth 4929–4931 m; 27 Feb. 2005; EBS supranet.

First description of (non-adult) males

Eyes proximally connected by a large transverse symphysis (Fig. 10B). Cornea opaque, eyestalk with pattern of transparent and opaque parts. Ommatidia without rhabdom, nonetheless forming a compact laterally positioned cornea (Fig. 10D) delimited from eyestalk. Eyestalk (Fig. 10B, D–E) with large ganglion mass. Eye dorsally with ocular papilla measuring ⅕ of antero-posterior eye extension, in loco facing upwards (Fig. 10A). Small pore at tip of ocular papilla (Fig. 10C). Organ of Bellonci (Fig. 10E) close to basis of papilla; this organ with numerous sensory cells with a neck and (out of focus in Fig. 10E) large vacuole. Antennular trunk without antennular bursa. Vestigial appendix masculina in dissected immature male with BL 13.4 mm. Four barbed setae disto-laterally on disto-median lobe of antennular trunk, no teeth. Eyes bolster-shaped (Fig. 10A), dorsoventrally compressed by a factor of 1.9. Foregut with unidentifiable masticated material, abundant crustacean remains fragmented to small pieces and a minor number of small mineral particles. Ingested setal fragments thicker than found elsewhere in this mysid, so potential ingestion of own exuvia excluded in this case. Thoracic sternite 1 with rounded mid-anterior projection. Thoracomeres 2–8 without mid-sternal processes.

Eyes and antennula not available in fragment of subadult male with estimated BL ≈ 14 mm. This specimen with pyriform penes (Fig. 9B); several setae associated with terminal ejaculatory opening; spermatozoa visible in efferent ducts. Pleopods 1–3, 5 (Fig. 9E–F) of both available non-adult males represent uniramous setose plates increasing in length caudally; pleopod 4 longest, biramous with unsegmented, plate-like, setose endopod. Exopod 4 (Fig. 9D) 2–3-segmented only in subadult male. The still rudimentary aspect of this exopod suggests a much larger (multi-segmented?) exopod 4 in the so far unknown adult male. Exopod of uropods extending 0.2–0.3 times its length beyond endopod and 0.1–0.2 times beyond telson. Endopod not forming an external suture. Statocyst chamber well delimited by internal cuticle only. Statoliths distinct, without mineral (probably accidentally demineralized in present material). No setae, pores or scales detected on telson. Anal lobe distinct, weakly cuticularized.

Notes on immature female

Non-dissected immature female with BL 10.3 mm (Fig. 9A), showing pyriform eyes, dorsoventrally compressed by a factor of 1.4. Ocular papilla measuring ⅓ of antero-posterior eye extension. Cornea

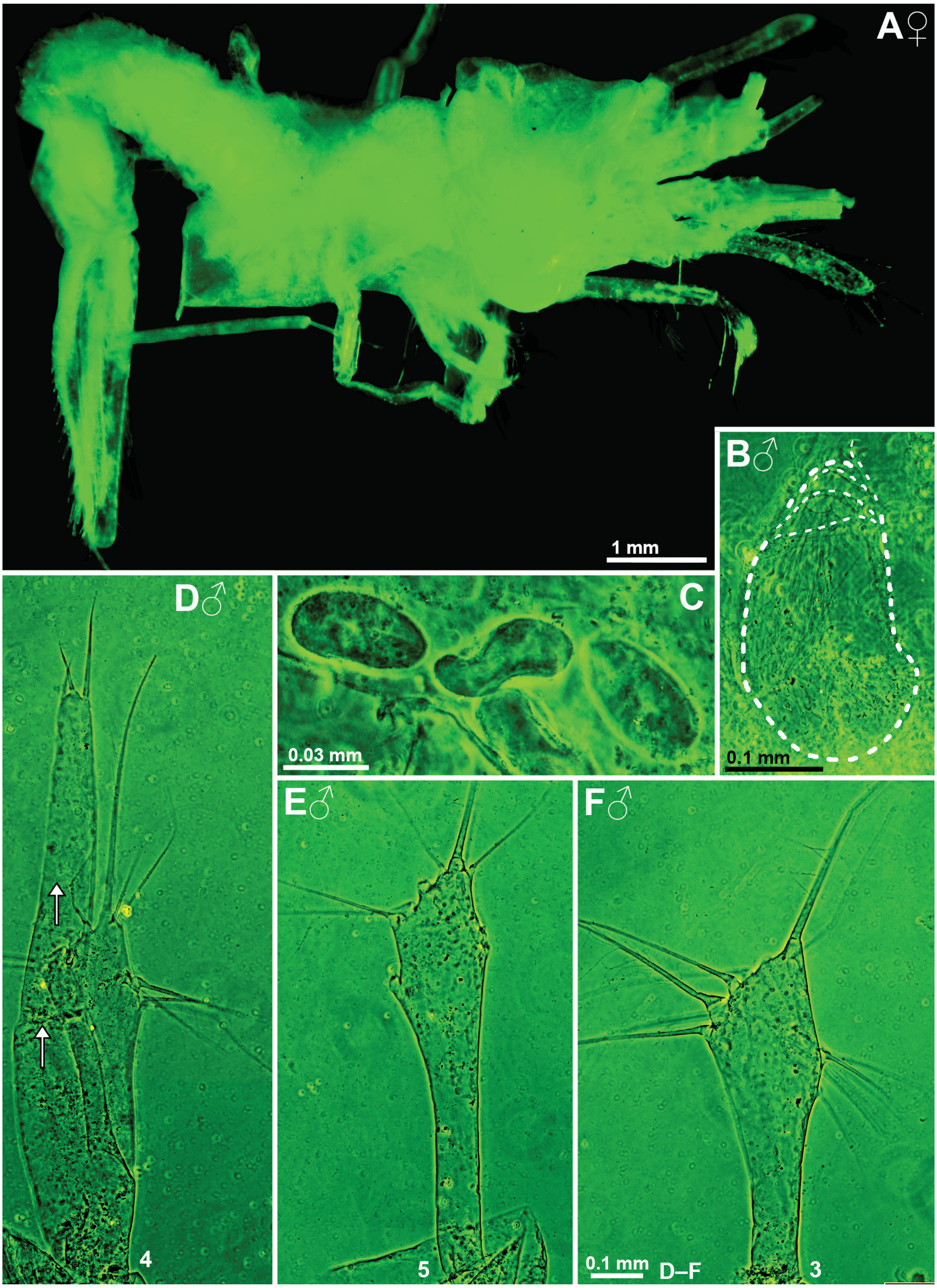

Fig. 9. *Thalassomysis tattersalli* Nouvel, 1942, immature female with BL of 10.3 mm (A) and subadult male ≈ 14 mm (B–F). **A**. Immature female in toto, obliquely lateral. **B**. Penis, caudal view; dashed lines enhance contours of penis and its setae. **C**. Ellobiopsid spores settled on third thoracic sternite. **D**. Fourth pleopod of subadult male, lateral aspect, arrows point to segmental borders. **E–F**. Fifth (E) and third (F) pleopods of subadult male, mesial aspect. A. Object artificially separated from background.

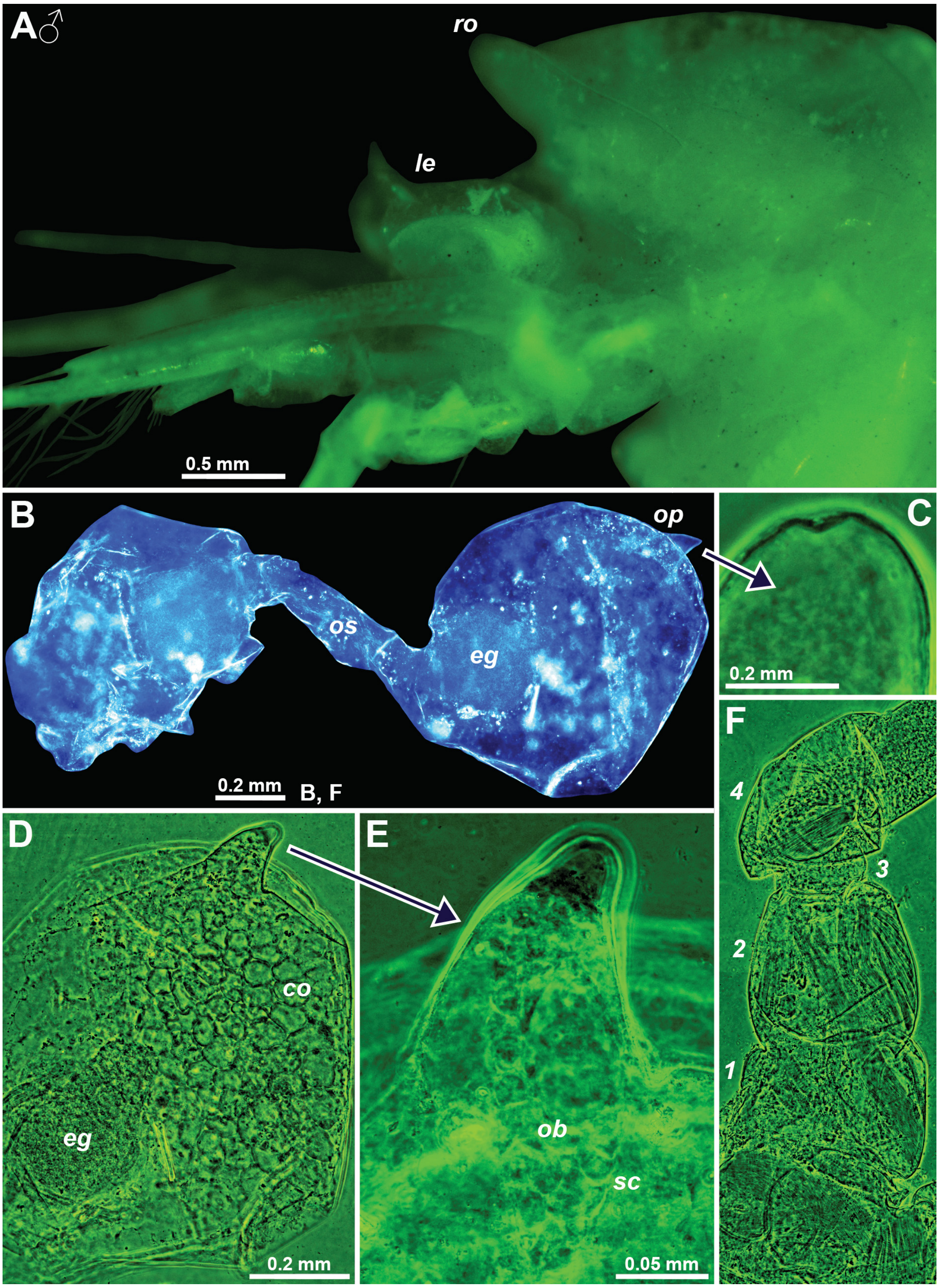

Fig. 10. *Thalassomysis tattersalli* Nouvel, 1942, immature male with BL of 13.4 mm. **A**. Cephalon, lateral view. **B**. Eyes connected by ocular symphysis, right eye dorsal, left eye (distorted) ventral; ocular symphysis distorted upside down close to left eye. **C**. Detail of B, showing tip of ocular papilla. **D**. Right eye with focus on ocular papilla. **E**. Detail of D, showing ocular papilla and organ of Bellonci. **F**. Right antennal peduncle with indication of segmental numbers (*1–4*), lateral view. Abbreviations: *co* = cornea; *eg* = eyestalk ganglia; *le* = left eye; *ob* = organ of Bellonci; *op* = ocular papilla; *os* = ocular symphysis; *ro* = rostrum; *sc* = sensory cells with a neck. A–B. Objects artificially separated from background.

compact, well delimited from eyestalk, with ommatidia reaching surface. Cornea brown, well contrasting from opaque eyestalk even after 18 years of preservation in ethanol. Pigmented cornea with ommatidia reaching surface, together with ganglion mass present in eyestalk, suggesting some visual abilities (see 'Discussion'). No female lobe detected. Thoracic endopod 2 very long (bent in Fig. 9A), extending beyond antennular trunk when stretched anteriorly. Endopods 3–8 broken, as in other conspecific specimens in ANDEEP material.

'Ovoid organ'

Nouvel (1942, 1943) reported "un petit organe ovoïd longuement pédonculé" on a seta of the maxillula in *T. tattersalli*. Murano & Krygier (1985) found no such structure in material of this mysid species and assumed that the structure reported by Nouvel could be a "small parasite or tumor" rather than an organ of a mysid. In fact, such ovoids (Fig. 9C) were also found in the present material and identified as settled spores of ellobiopsids (phylum Myzozoa: Ellobiopsida). The dissected subadult male with a total of twelve such spores on thoracic sternites, no spores elsewhere. The immature male with a single spore fixed to a seta of pleopod 2, four spores to the joint between the mandibles and labrum, and several spores on the antennular trunk. The available immature female not examined (not dissected) in this respect.

Type locality and distribution

This species was first described by Nouvel (1942, 1943) based on a single adult female taken during Cruise 1910 of the 'Campagnes du Prince Albert 1er de Monaco', station 2983 in the Gulf of Biscay, 45°28′ N, 5°43′ W, vertical haul 4500–0 m, here regarded as type locality by monotypy. Murano & Krygier (1985) published one adult and three non-adult females from three samples in the NE Pacific, about 100–750 km off the Oregon coast, 44–45° N, 125–134° W, taken with a beam trawl at depths of 2926–3724 m. The ANDEEP records are the first with (non-adult) males and are the first from the southern hemisphere: these specimens were taken with an epibenthic sledge on the Weddell Abyssal Plain at three stations at depths of 4655–4931 m, 65–68° S, 00°–43° W. The great distances between the three sea areas recorded so far point to a panoceanic abyssal distribution.

Tribus Amblyopsini Tchindonova, 1981

Genus ***Amblyops*** G.O. Sars, 1872

Amblyopsis G.O. Sars, 1869: 328–330 (junior homonym of the blind cave fish *Amblyopsis* De Kay, 1842).
Amblyops G.O. Sars, 1872a: 3–4 (replacement name for the junior homonym *Amblyopsis*, definition).

Pseudomma – M. Sars 1869: 262 (partim, in species list).
Amblyopsis – Stebbing 1893: 269 (in synonymy). — Hernández-Payán & Hendrickx 2020: 178 (morphology, in comparison).
Amblyops – Banner 1948a: 382 (diagnosis). — Tattersall & Tattersall 1951: 246–247 (description). — O.S. Tattersall 1955: 103–104 (comparison of species); 1965: 14–15 (list of generic characters, Antarctic). — Ii 1964: 271–272 (diagnosis; comparison with *Amblyopsoides*). — Birstein & Tchindonova 1970: 284 (inventory, distribution). — Kathman *et al.* 1986: 95 (key to species, Northeast Pacific). — Tchindonova 1993: 153, 157 (taxonomy; distribution). — Murano 2012: 50–51 (diagnosis, revision). — Wittmann *et al.* 2014: 336, figs 18, 42 (morphology, taxonomy). — Meland *et al.* 2015: 4, 23 (eye morphology, biogeography). — Petryashov & Frutos 2017: 404–405 (taxonomy, in key). — Wittmann & Chevaldonné 2021: 211 (morphology, sensory organs). — Mees & Meland 2024: AphiaID 119832 (accepted).

Diagnosis

Carapace normal, no rostrum. Eye rudiments immotile, without stalks, closely set though separate, not connected by membranous integument, dorsoventrally compressed, reduced to essentially horizontal pads, no tooth-like non-sensory projection. Eyes without any or with strongly reduced ommatidia; ocular papilla present in most species. Antennal peduncle 4-segmented with oblique border between second and dorsally overlapping third segment. Scale with small apical segment; lateral margin bare up to a large tooth, in most species mesially accompanied by small teeth or spines; bare portion contributes more than ¾ of scale length. Thoracomeres and pleomeres normal. Thoracic endopods not prehensile, endopods 3–8 with unsegmented carpus separated from 2-segmented propodus by an oblique articulation. Female with 2–3 pairs of well-developed oostegites. Male pleopods biramous, setose, no spines; any ramus of pleopod 4 may bear modified setae. Endopod 1 unsegmented, all exopods and endopods 2–5 multi-segmented. Female pleopods reduced to uniramous setose plates with pseudobranchial lobe. Both rami of uropods unsegmented, setose all around; endopod without or with a few spines. Telson normal, no terminal incision, no lateral constriction, lateral margins not serrated. Most species with spines on lateral margins and with pair of setae flanked by spines on terminal margin.

Type species

Amblyopsis abbreviata G.O. Sars, 1869, by original designation according to ICZN (1999), Article 68.2.1. G.O. Sars (1872a) explicitly replaced the preoccupied generic name *Amblyopsis* G.O. Sars, 1869, with the modified name *Amblyops* G.O. Sars, 1872. The subsequent designation of the nomenclatorial combination *Amblyops abbreviatus* (G.O. Sars, 1869) as type species by Murano (2012) does not fully conform to the Code; however, it is tautological in practice. The taxon is currently acknowledged as *Amblyops abbreviatus* (G.O. Sars, 1869). As previously unknown features, the ocular papilla bears a terminal toroidal bulge surrounding a central pore, and the basal segment of the antennular trunk shows a dorsal antennular bursa, as revealed by the present inspection of six specimens from the Hjeltefjord in Norway, NE Atlantic, 61°35′ N, 4°55′ E, depth 260 m, 4 July 1978, leg. Jan Helge Fosså and Torleiv Brattegard. In both sexes of this material the length of the ocular papilla shows a wide range of 1⁄20–1⁄5 of the antero-posterior extension of the eye rudiments.

Nomenclatorial notes

The terms '*cauda*' and '*spina*' are Latin nouns rather than adjectives, so the original spellings of *A. tenuicauda* W.M. Tattersall, 1911, and *A. aequispina* Birstein & Tchindonova, 1958, are here retained according to ICZN (1999: Art. 32.3). The use of these species names as adjectives would have required explicit statements upon first description (Art. 31.2.2). Due to the absence of such statements, the adjectives *'tenuicaudus*' and *'aequispinus'* are considered incorrect subsequent spellings. The invalid spellings were recently used by Murano (2012), San Vicente (2017) and Astthorsson & Brattegard (2022), the original spellings by San Vicente *et al.* (2013), Petryashov & Frutos (2017), ITIS (2019), Golovan *et al.* (2019), Wittmann (2020) and Mees & Meland (2024). Therefore, the potentially prevailing use of incorrect spellings does not match with ICZN (1999: Art. 33.3.1).

Species included (24 species acknowledged)

– *A. abbreviatus* (G.O. Sars, 1869) from boreal and arctic waters of the N Atlantic: Bay of Biscay, Ireland, Norway, Iceland Basin, off Greenland, Cape Cod area, Canadian Atlantic, 40–81° N, 13–72° W, depth 150–1400 m (Tattersall & Tattersall 1951; Brandt *et al*. 1996; Dewicke 2002; Vanquickelberghe 2004; Murano 2012; Astthorsson & Brattegard 2022), whereas Pacific populations were attributed to *A. pacificus* in the original description of the latter species by Murano (2012)
– *A. aequispina* Birstein & Tchindonova, 1958 from the NW Pacific: Kurile-Kamchatka Trench, 43–56° N, 152–162° E, depth 4830–5780 m (Birstein & Tchindonova 1958; Golovan *et al.* 2019)

- *A. amamiensis* Murano, 2012 from the NW Pacific: Amami-Ohshima Island, SW Japan, 29° N, 130° E, depth about 1000 m (Murano 2012)
- *A. antarcticus* O.S. Tattersall, 1955 from the Southern Ocean: South Sandwich Islands, South Shetland Islands, Ross Sea, Weddell Sea, 57–78° S, depth 567–810 m (O.S. Tattersall 1955; San Vicente 2010)
- *A. arianii* sp. nov. from the western Southern Ocean: Bellingshausen Sea, Drake Passage, South Sandwich Trench, Weddell Sea, Cape Basin, 41–63° S, 9° E–64° W, depth 2092–4698 m
- *A. australiensis* Murano, 2012 from the E Indian Ocean: Sahul Shelf, Timor Sea, 13° S, 123° E, depth 535–547 m (Murano 2012)
- *A. bipapillatus* sp. nov. from the western Southern Ocean: Weddell Slope, Powell Basin, 62–71° S, 15–47° W, depth 1182–3103 m
- *A. durbani* O.S. Tattersall, 1955 from the SW Indian Ocean: off Durban, SE Africa, 29° S, 32° E, depth ≤416 m (O.S. Tattersall 1955; Mauchline & Murano 1977)
- *A. ewingi* Băcescu, 1967 from widely separated localities in the Pacific: off Japan, Peru Trench, 8° S–42° N, 80° W–144° E, depth 1997–2519 m (Mauchline & Murano 1977; Fukuoka 2009)
- *A. izuensis* Murano, 2012 from the NW Pacific: Sagami Bay, central Japan, about 35° N, 139° E, depth 1685–1708 m (Murano 2012)
- *A. kashimensis* Murano, 2012 from the NW Pacific: Kashima Sea, central Japan, detailed coordinates and depth unknown (Murano 2012)
- *A. kempi* (Holt & Tattersall, 1905) from the N Atlantic: Bay of Biscay, W Ireland, Iceland Basin, Canadian Atlantic, 44–65° N, 6–58° W, depth 200–1464 m (Wright 1973; Anadón 1993; Vanquickelberghe 2004; Astthorsson & Brattegard 2022)
- *A. longisquamosus* Murano & Mauchline, 1999 from the NE Atlantic: Rockall Trough, 57° N, 10° W, depth 1500–1809 m (Murano & Mauchline 1999)
- *A. magnus* Birstein & Tchindonova, 1958 from the N Pacific: Kurile-Kamtchatka Trench, Japan Trench, Mariana Trench, 11–49° N, 141–159° E, depth 4480–7260 m (Birstein & Tchindonova 1958; Fukuoka 2009; Kou *et al.* 2018)
- *A. manazuruensis* Murano, 2012 from the NW Pacific: Sagami Bay, central Japan, 35° N, 139° E, depth 360–460 m (Murano 2012)
- *A. okinawensis* Murano, 2012 from the NW Pacific: NE of Okinawa Island, SW Japan, 27° N, 129° E, depth 870–945 m (Murano, 2012)
- *A. pacificus* Murano, 2012 with a wide range in the N Pacific, 39–57° N, 155° E–131° W, depth 180–1543 m (Murano 2012; as *A. abbreviata* in Banner 1948a, Birstein & Tchindonova 1958 and Petryashov 2005)
- *A. sagamiensis* Murano, 2012, from the NW Pacific: Sagami Bay, central Japan, 35° N, 139° E, depth ≤1000 m (Murano 2012)
- *A. spiniferus* Nouvel & Lagardère, 1976 from the NE Atlantic: Bay of Biscay, Iceland Basin, 43–63° N, 2–27° W, depth 280–1500 m (Nouvel & Lagardère 1976; Meland & Brattegard 2007; Frutos & Sorbe 2013; San Vicente *et al.* 2013)
- *A. surugensis* Murano, 2012 from the NW Pacific: Izu Peninsula, central Japan, about 35° N, 139° E, depth 1770–1780 m (Murano 2012)
- *A. tattersalli* Zimmer, 1914 is circum-Antarctic, 41–78° S, depth 385–4931 m (Price 2001; Dewicke 2002; San Vicente *et al.* 2013; Wittmann 2020; Astthorsson & Brattegard 2022)
- *A. tenuicauda* W.M. Tattersall, 1911 from the E Atlantic: Angola Basin, Bay of Biscay, W Ireland, Iceland Basin, 22° S–63° N, 5° E–22° W, depth 450–5433 m (Price 2001; Dewicke 2002; San Vicente *et al*. 2013; Wittmann 2020; Astthorsson & Brattegard 2022)
- *A. timorensis* Murano, 2012 from the E Indian Ocean: Timor Sea, 10° S, 128° E, depth 465–490 m (Murano 2012)
- *A. trisetosus* Nouvel & Lagardère, 1976 from the NE Atlantic: Bay of Biscay, Iceland Basin, 44–62° N, 2–17° W, depth 680–2300 m (Nouvel & Lagardère 1976; Meland & Brattegard 2007; San Vicente *et al.* 2013)

Amblyops tattersalli Zimmer, 1914
Figs 11–13

Amblyops tattersalli Zimmer, 1914: 390–391, pl. xxiii figs 13–16 (coast of E Antarctica).

Amblyops tattersalli – W.M. Tattersall 1923: 275, 277, 285 (short description, record, Ross Sea). — O.S. Tattersall 1965: 15–16, figs 1–4 (description, record, Ross Sea). — Birstein & Tchindonova 1970: 284–285 (in species list). — Ariani *et al.* 1993: table 1 (mineral composition of statoliths). — Wittmann 1995: fig. 1 (reproductive adaptations). — Brandt *et al.* 1998: table 1 (biogeography, endemism). — Petryashov 2006: 1409, fig. 5 (distribution, in key). — San Vicente *et al.* 2006: table 2 (biodiversity, new records, Southern Ocean). — San Vicente 2010: 42, table 4, fig. 35 (distribution, diagnosis, in key). — Murano 2012: 84 (in key). — Petryashov 2014a: 150, map 10 (biogeography). — Wittmann & Ariani 2019: suppl. (fluorite statoliths, biogeography). — Mees & Meland 2024: Aphia-ID 227029 (accepted).

Diagnosis

Based on adults of both sexes. All features within limits of generic diagnosis. Carapace with rounded, obtusely angled anterior margin. Eye rudiments without visual elements, roughly trapeziform with widely rounded lateral margin and with roughly linear, oblique anterior margin. Ocular papilla with ¼–⅓ of antero-posterior extension of eye rudiments. Disto-lateral edge of antennal sympod with only one large tooth. Antennal scale length 2.6–3.2 times maximum width. Scale extends 0.4–0.6 times its length beyond antennular trunk. Scale with small apical segment; bare portion of lateral margin ending at ⁹⁄₁₀ of scale length in a large tooth, mesially tightly accompanied by 2–3 small spines. Setose terminal lobe of scale well projecting beyond large tooth. Mouthparts normal, labrum rostrally rounded. Thoracic exopod 1 with 9-segmented flagellum, exopods 2–8 with 10-segmented flagellum. Endopods 3–8 with unsegmented carpus separated from propodus by a strongly oblique articulation, two segments of propodus separated by a less oblique articulation. Female with three pairs of oostegites contributing to wall of marsupium. Male pleopods 1–5 biramous; endopods with 1, 18, 16–17, 16 and 15–16 segments, exopods with 17, 17, 17–18, 18 and 18 segments, respectively. Pleopods of both sexes with normal setae only. Both rami of uropods undivided, setose all around, endopod with one spine on mesial margin below statocyst. Telson linguiform, distal ⅔ with weakly converging, slightly sigmoid lateral margins and with broad, slightly flattened, convex terminal margin, disto-lateral edges rounded; length 1.7–1.9 times maximum width. Proximal ⅖ of telson with bare lateral margins, distal ⅗ of each lateral margin with dense series of 18–23 normal-shaped spines discontinuously increasing in length distally. Terminal margin with pair of paramedian setae tightly flanked by a pair of small spines, in turn flanked by 2–3 pairs of large spines, the latter forming a continuous series and gradually changing in length with proximally adjoining lateral spines; innermost large spine ⅑–⅙ of telson length. Telson with total of 42–54 spines plus two barbed setae.

Material examined

SE ATLANTIC • 1 ♂ subad. (BL = 16.4 mm); Cape Basin, ANDEEP-III station 016-10; 41°07.06′ S, 9°54.88′ E to 41°06.99′ S, 9°54.75′ E; depth 4687–4669 m; 26 Jan. 2005; EBS epinet.

SOUTHERN OCEAN • 1 juv. (BL = 7.7 mm); NW Weddell Sea, ANDEEP-II station 131-3; 65°19.83′ S, 51°31.62′ W to 65°19.95′ S, 51°31.41′ W; depth 3049–3050 m; 5 Mar. 2002; EBS supranet • 1 ♀ ad. (fragmented, BL ≈ 27.3 mm, bearing nauplioid larvae), 1 ♂ ad. (BL = 22.7 mm), 3 juv.; NW Weddell Sea, ANDEEP-II station 133-3; 65°20.15′ S, 54°14.35′ W to 65°20.06′ S, 54°14.51′ W; depth 1122–1119 m; 7 Mar. 2002; EBS epinet • 1 imm. (BL = 8.7 mm); Weddell Abyssal Plain, ANDEEP-III station 088-8; 68°03.66′ S, 20°27.90′ W to 68°03.61′ S, 20°27.52′ W; depth 4929–4931 m; 27 Feb. 2005;

EBS supranet • 1 juv. (BL = 6.2 mm); Weddell Abyssal Plain, ANDEEP-III station 102-13; 65°34.32′ S, 36°31.32′ W to 65°34.40′ S, 36°31.07′ W; depth 4805–4803 m; 6 Mar. 2005; EBS supranet • 2 ♂♂ ad. (BL = 24.6, 27.7 mm), 1 ♀ subad. (BL = 17.4 mm); Powell Basin, ANDEEP-III station 133-2; 62°46.49′ S, 53°03.50′ W to 62°46.38′ S, 53°03.98′ W; depth 1584–1579 m; 16 Mar. 2005; EBS epinet • 1 ♂ ad. (BL = 22.8 mm, on slides); same collection data as for preceding • 1 ♀ subad. (BL = 11.1 mm); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 151-7; 61°45.52′ S, 47°07.68′ W to 61°45.42′ S, 47°08.04′ W; depth 1182–1185 m; 21 Mar. 2005; EBS epinet • 1 imm. (BL = 6.5 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 114-4; 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W; depth 2914–2920 m; 18 Feb. 2002; EBS epinet • 1 ♀ ad. (BL = 20.9 mm), 1 imm., 1 juv.; same collection data as for preceding except for occurrence in supranet • 1 juv. (BL = 4.6 mm); South Sandwich Trench, E of Montagu Island, ANDEEP-II station 141-10; 58°25.08′ S, 25°00.77′ W to 58°24.93′ S, 25°00.95′ W; depth 2313–2281 m; 23 Mar. 2002; EBS supranet.

Supplementary description

All features within the limits of the above diagnosis.

Carapace (Figs 11A–B, 13B). Anterior margin convex, posterior margin weakly concave. Median pore group 6% of carapace length in front of posterior margin. This group is constituted by eight (2 × 4) pores flanking a larger pore-like structure, together in M-like arrangement (Fig. 13B).

Eyes (Fig. 11A–E). Eye rudiments dorsoventrally compressed by a factor of 1.5–1.9 measured near center. Eye surface mostly hispid by minute, slender triangular scales (Fig. 11C–D); on average largest scales (Fig. 11C) in median portions of anterior margin. Dorsal face covered only partly by somewhat shorter scales (Fig. 11D) scattered over surface, for methodological reasons best visible along accidental folds produced by forcing eye rudiments into a plane. Each eye with large, distally broadly rounded ocular papilla (Fig. 11B, E) closely behind anterior margin at ⅓ of eye width from mesial margin. Papilla ends in a toroid with central pore. Organ of Bellonci near papilla.

Antennae s. lat. (Figs 11F–G, 13A). Basal segment of antennula dorsally with striated sensory cushion well visible at bottom of an almost empty antennular bursa (Fig. 11F); such striation not visible in a bursa filled with extraneous material (Fig. 11G). Terminal segment of antennular trunk without female lobe. Disto-median lobe of trunk armed with four teeth increasing in size laterally, lobe disto-laterally with four barbed setae. The 2–3 tooth-like structures mesially adjoining disto-lateral tooth of antennal scale show a clear basal articulation (Fig. 13A) and thus represent true spines (or spiniform setae), as already concluded by W.M. Tattersall (1923), but not representing the "secondary denticles" [translation] indicated by Zimmer (1914) in the original description of this species.

Mandibles. Compared with left mandible (as in Fig. 21C–D), right mandible (as in Fig. 21E) bears smaller, serrate digitus mobilis and more strongly tooth-like spines of pars centralis.

Gut (Fig. 12). Similar to that of *A. bipapillatus* sp. nov. (Fig. 22). Dissected adult male of *A. tattersalli* differs from this species by presence of small denticles on distal fourth of apically coronate spines (Fig. 12B), posterior part of lateralia on each side with cluster of fewer (eight vs eleven) unilaterally serrated spines rather than with stiff bristles (Fig. 12D), and by dorsolateral infoldings on each side with cluster of fewer (five vs six) spines, more homogeneous in length (Fig. 12E). Lateral setae of superomedianum are basally much thicker (Fig. 12F) than slender normal setae in caudal position. All setae of superomedianum distally microserrated. Storage volume poorly filled with crustacean remains (mainly setae), a few very large mineral particles and very little masticated material. Midgut almost empty. Anal lobe distinct, weakly cuticularized (dashed line in Fig. 13C).

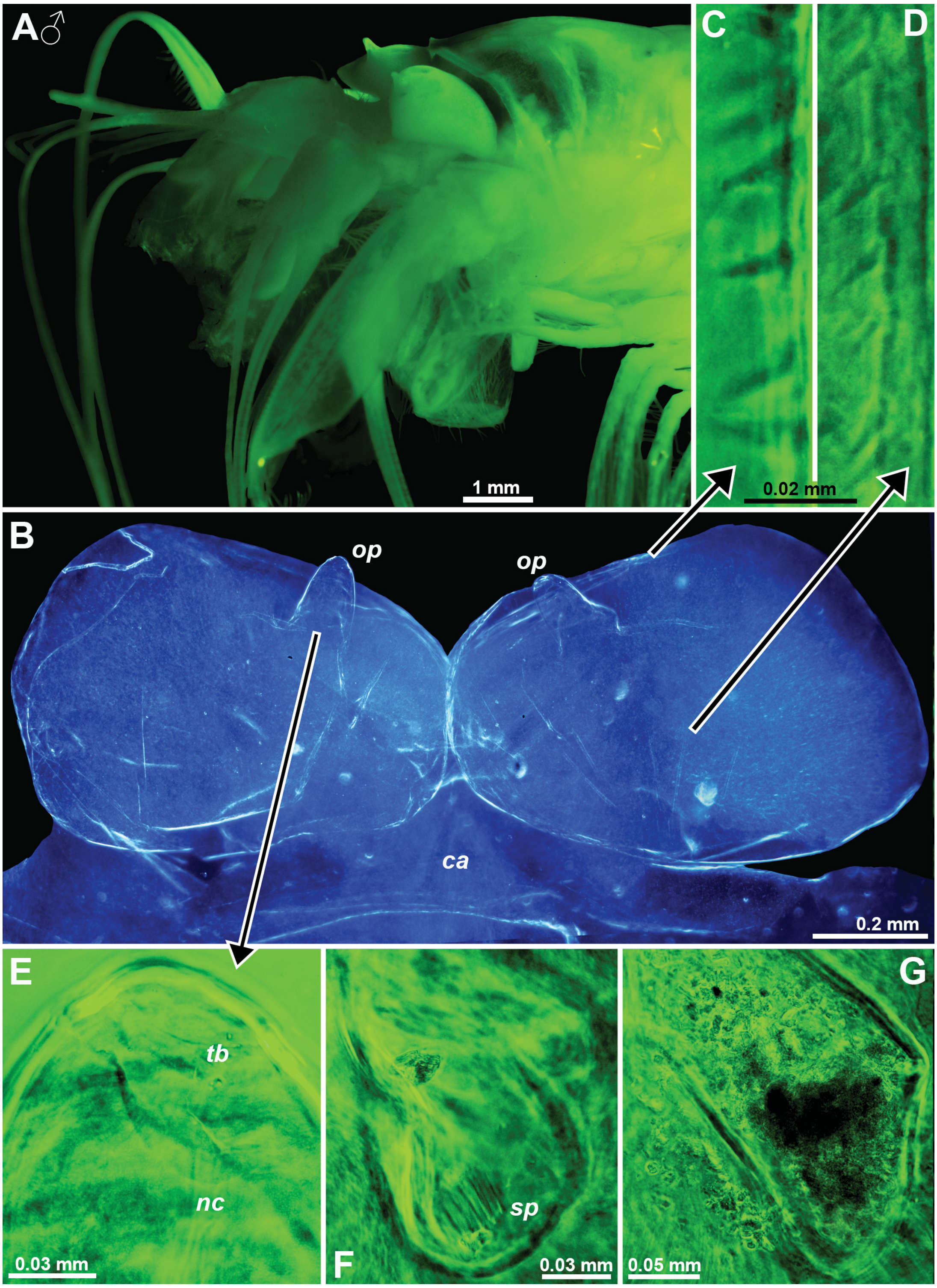

Fig. 11. *Amblyops tattersalli* Zimmer, 1914, adult males with BL of 27.7 mm (A), 22.8 mm (B–F) and adult female 27.3 mm (G). **A**. Cephalon, lateral view. **B**. Eyes expanded on slide, dorsal view. **C–D**. Details of B, showing spiniform scales on anterior margin (C) and on mid-dorsal face (D). **E**. Detail of B, showing tip of ocular papilla. **F–G**. Left antennular bursae in two specimens, dorsal view; note striated pad (F: *sp*) and bursa (G) filled with extraneous material. Abbreviations: *ca* = carapace; *nc* = nerve cord; *op* = ocular papilla; *sp* = striated pad; *tb* = toroidal bulge. A–B. Objects artificially separated from background.

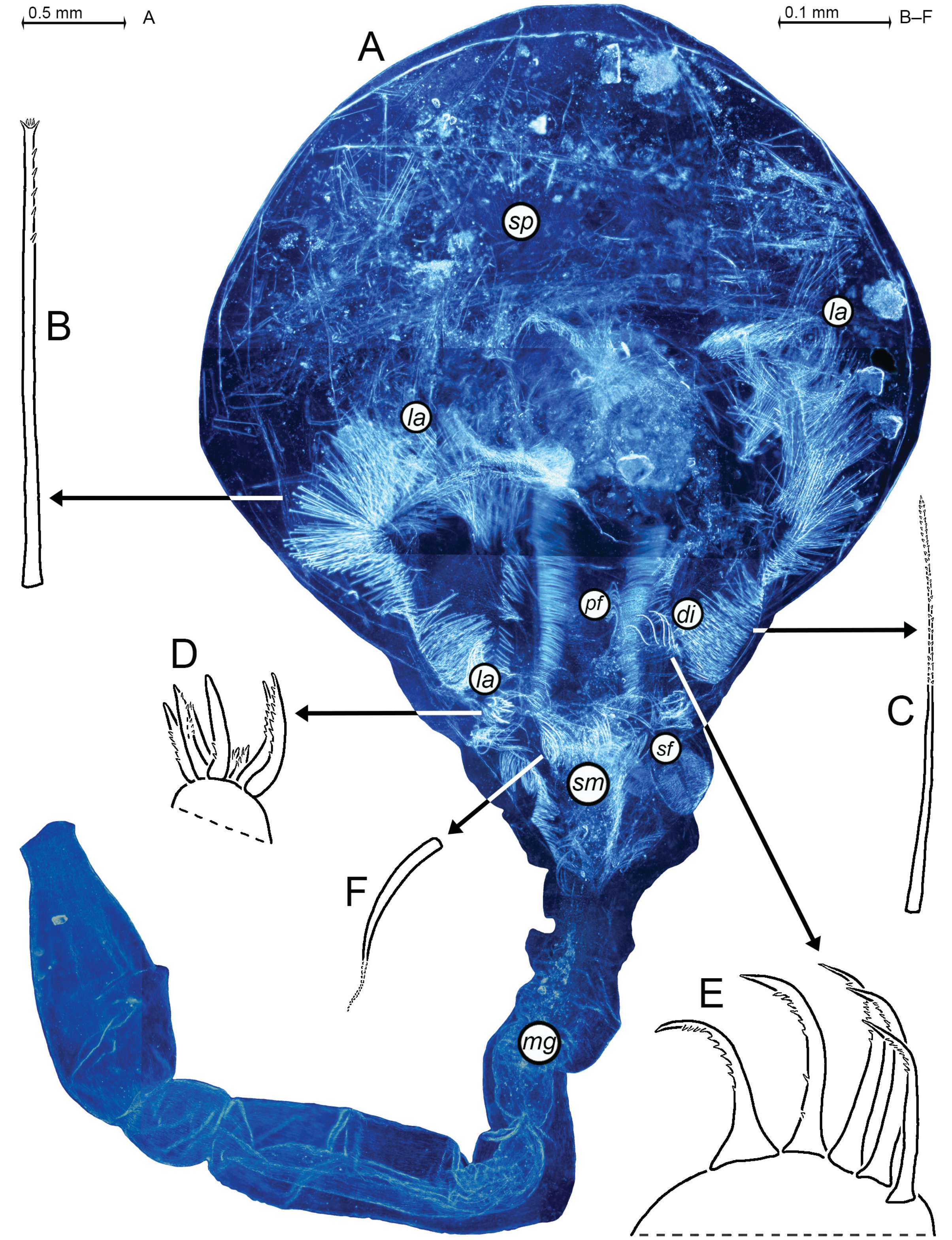

Fig. 12. Foregut and midgut in *Amblyops tattersalli* Zimmer, 1914, adult male with BL of 22.8 mm. **A**. Foregut expanded on slide, dorsal view. **B–F**. Details of A, arrows point to modified spines (B–E) and seta (F) of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *pf* = primary cardiac filter; *sf* = secondary pyloric filter; *sm* = superomedianum; *sp* = storage space. A. Object artificially separated from background.

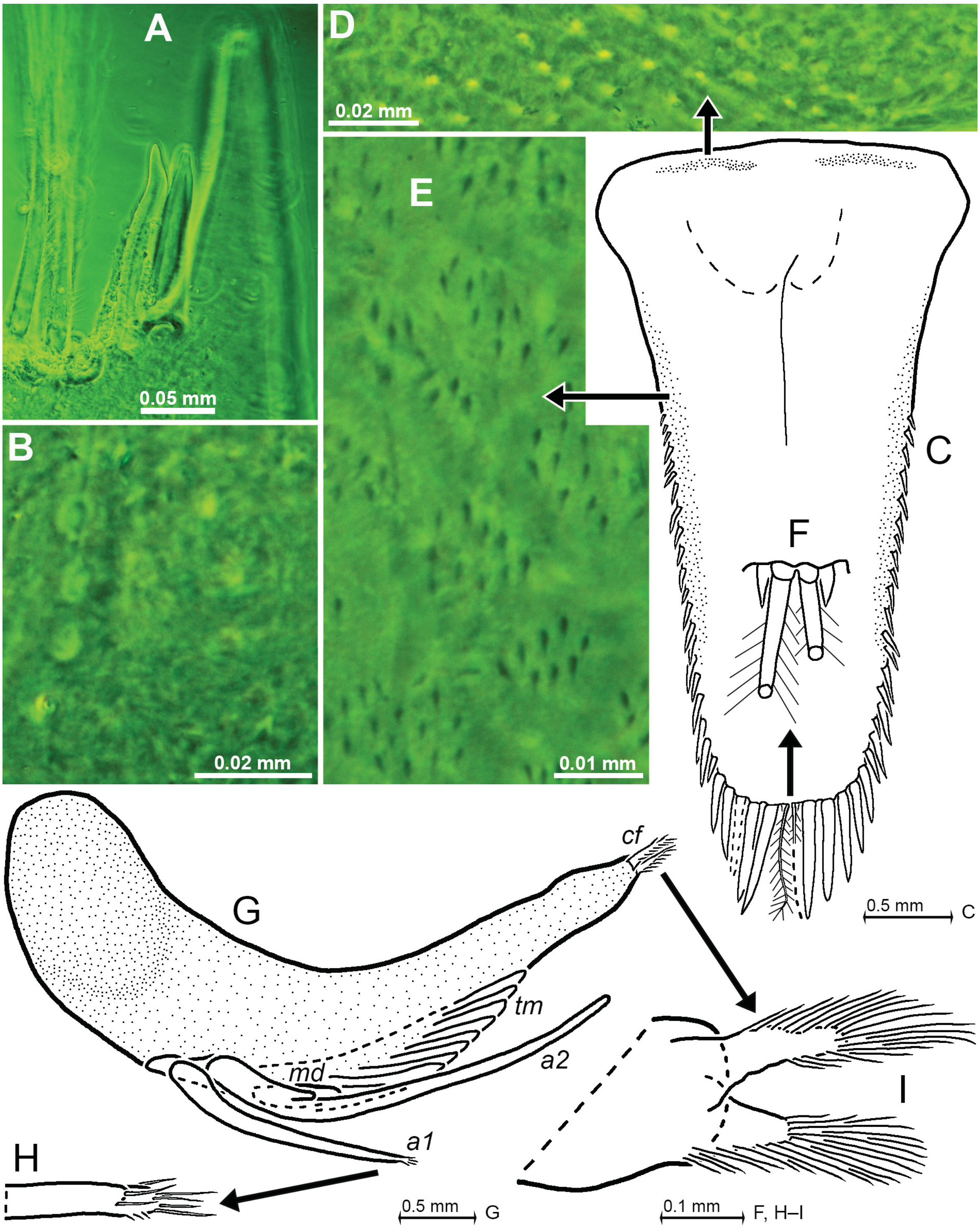

Fig. 13. *Amblyops tattersalli* Zimmer, 1914, adult male with BL of 22.8 mm (B–F), adult female 27.3 mm (A) and three of its nauplioid larvae (G–I). **A**. Disto-lateral angle of antennal scale, dorsal view. **B**. Pore group near caudal margin of carapace, dorsal view. **C–F**. Telson, dorsal view; details showing pore field close to caudal margin (D), groups of triangular scales along lateral margin (E) and pair of minute paramedian spines plus basal portion of setae on terminal margin (F). **G**. Nauplioid larva with BL of 4.6 mm, lateral view. **H**. Tip of antennula in another nauplioid, lateral view. **I**. Caudal furca in another nauplioid, dorsal view. Abbreviatios: *a1* = antennula; *a2* = antenna; *cf* = caudal furca; *md* = left mandible; *tm* = thoracomeres.

Thorax. Basal plate of exopods 1–8 with minute knob at subrectangular disto-lateral edge. Dactylus of endopod 2 not reflexed; oriented about perpendicular to carpopropodus. Endopods 3–8 long and slender. Endopod 8 when stretched reaches anteriorly to tip of antennal scale, posteriorly to end of pleomere 6. Penes with ⅘ length of ischium 8.

Pleon. Length of pleomeres 1–5 is 0.6–0.7, 0.6, 0.5, 0.5–0.7 and 0.5–0.6 times length of pleomere 6, respectively, telson 1.1–1.2 times length of pleomere 6. Pleomere 6 shorter than combined pleomeres 4–5. Female pleopods increasing in length caudally. Exopods of male pleopods 1–5 subequal in length. Scutellum paracaudale triangular with narrowly blunt apex.

Tail fan (Fig. 13C–F). Exopod of uropods 1.5 times endopod length and 1.5–1.7 that of telson; endopod 0.9–1.0 length of telson. Exopod extends 0.3–0.4 times its length beyond endopod and 0.4–0.6 beyond telson. Statoliths composed of fluorite, diameter 0.18–0.29 mm (n = 5). Telson dissected in two specimens: both spines flanking pair of paramedian setae minute (0.05 mm) in adult male with BL 22.8 mm (Fig. 13F); only right paramedian spine that small in adult female with BL 27.8 mm, left spine five times that size, i.e., one third of adjacent large spine. Telson with a pair of paramedian subbasal fields (visualized as shadowed areas in Fig. 13C) with 68–83 pores (n = 4; not all pores in focus in Fig. 13D). Telson with 2–3 µm long triangular scales organized in groups of up to twenty, mostly about ten scales (Fig. 13E); groups together forming narrow longitudinal ribbon proceeding close to each lateral margin between ⅕ and ⅘ telson length from basis (visualized as shadowed lateral areas in Fig. 13C).

Nauplioid larvae (Fig. 13G–I). Female with BL 27.3 mm carried 15 nauplioid larvae at substage N3. Body length of larvae 4.0–4.6 mm. Nauplioid abdomen ends in furcal appendages, each armed with a fan of 18–22 spine-setae increasing in length distally (n = 5; Fig. 13I). Tip of larval antennula with 9–12 mostly shorter spine-setae, not arranged in series (n = 5; Fig. 13H). Remaining parts of body with smooth cuticle. Remaining features in Fig. 13G–I typical of stage of development.

Type locality and distribution

The type locality is the winter station (= Gauss Station) of the Deutsche Südpolar-Expedition 1901–1903, coast of East Antarctica, 66°02′ S, 89°38′ E, depth 385 m. This circum-Antarctic species was reported by Petryashov (2006, 2014a) from 55–78° S, depth 510–860 m and by San Vicente (2010) from 66–75° S, depth 385–547 m. The ANDEEP records are from Cape Basin, Weddell Abyssal Plain, NW Weddell Sea, Powell Basin, South Sandwich Trench and Drake Passage in the range of 41–68° S, 10° E–61° W, depth 1119–4931 m, thus representing strong latitudinal and bathymetric range extensions. Resulting total ranges 41–78° S, 90° E anticlockwise to 61° W, depth 385–4931 m.

Amblyops arianii sp. nov.

urn:lsid:zoobank.org:act:255ECB18-09AF-4B64-9C92-1CD618131C02

Figs 14–19

Diagnosis

Based on adult and subadult females. Fitting within ranges of generic diagnosis. Carapace with broadly rounded, obtuse-angled, uptilted anterior margin. Uptilted portion half as long as terminal segment of antennular trunk, covering part of eye rudiments. Eye rudiments without visual elements, subovate, converging at mesial third; all around hispid by scales. Ocular papilla with ⅕–¼ of antero-posterior extension of eye rudiments. Antennal sympod disto-laterally with large dorsal and large ventral tooth, plus distally blunt, triangular projection. Antennal scale with short apical segment, total scale length 2.6–2.8 times maximum width. Scale extends 0.5–0.6 times its length beyond antennular trunk. Setose terminal lobe of scale very short, not reaching tip of disto-lateral tooth; no accessory spines beneath this tooth. Mouthparts normal, labrum rostrally rounded. Female with three pairs of oostegites contributing to outer wall of marsupium. Endopod of uropods with one minute spine on mesial margin below statocyst. Telson about trapeziform with transversely flattened, convex terminal margin; length 1.9 times maximum width. Telson proximally with bare lateral margins, distal ⅖–⅗ of each lateral margin with dense series of 9–11 normal-shaped spines distally gradually increasing in size; terminal margin with pair of paramedian setae flanked by 2–3 pairs of large spines with mesially increasing size, innermost large spines only ≈1⁄17 of telson length, no minute median spines. Telson with total of 22–28 spines and two setae.

Etymology

The species name is a noun with Latinized masculine ending in genitive singular, dedicated to Antonio P. Ariani (Univ. Naples) in recognition of his important contributions to the taxonomy, biogeography and biomineralogy of mysids.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 25.8 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS supranet; ZMH 64653.

Paratypes

SOUTHERN OCEAN • 1 ♀ subad. (BL = 24.2 mm, on slides); same collection data as for holotype; ZMH 64655 • 1 ♀ imm. (damaged, BL = 20.7 mm), 1 juv. (damaged, BL = 7.1 mm); Drake Passage, NW of Elephant Island, ANDEEP-I station 042-2; 59°40.29′ S, 57°35.43′ W to 59°40.42′ S, 57°35.27′ W; depth 3683–3680 m; 27 Jan. 2002; EBS supranet; ZMH 64654 • 1 imm. (BL = 16.5 mm, in 2 parts); eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, ANDEEP-III station 059-5; 67°29.74′ S, 0°01.93′ W to 67°29.61′ S, 00°02.19′ W; depth 4655–4655 m; 14 Feb. 2005; EBS supranet; ZMH 64657 • 1 imm. (BL = 18.0 mm, in 2 parts); Weddell Abyssal Plain, ANDEEP-III station 110-8; 65°00.52′ S, 43°02.09′ W to 65°00.68′ S, 43°02.16′ W; depth 4698–4696 m; 10 Mar. 2005; EBS supranet; ZMH 64658 • 1 ♀ ad. (damaged, BL = 21.8 mm); South Sandwich Trench, E of Montagu Island, ANDEEP-II station 139-6; 58°14.10′ S, 24°21.22′ W to 58°14.18′ S, 24°20.94′ W; depth 3941.7–3926.8 m; 20 Mar. 2002; EBS supranet; ZMH 64656.

Other material

SE ATLANTIC • 1 imm. (BL = 8.6 mm); Cape Basin, ANDEEP-III station 016-10; 41°07.06′ S, 9°54.88′ E to 41°06.99′ S, 9°54.75′ E; depth 4687–4669 m; 26 Jan. 2005; EBS epinet.

SOUTHERN OCEAN • 1 ♀ subad. (damaged, BL ≈ 13.9 mm); SE Weddell Sea, ANDEEP-III station 074-6; 71°18.35′ S, 13°57.71′ W to 71°18.28′ S, 13°57.31′ W; depth 1030–1040 m; 20 Feb. 2005; EBS epinet.

Type locality and distribution

The type locality is ANDEEP I station 046-7: Drake Passage, South Shetland area, NE of Elephant Island, 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W, depth 2893.6–2893.2 m. This species is widely distributed in the western Southern Ocean: Bellingshausen Sea, Drake Passage, South Sandwich Trench and Weddell Sea. It was also found in the single sample from the SE Atlantic: Cape Basin. Total range 41–63° S, 9° E anticlockwise to 64° W, depth 2092–4698 m.

Description

Holotype (♀)

All features visible without dissection are within limits of specific diagnosis. Adult female with BL 25.8 mm. Cephalothorax contributes 45%, pleon (without telson) 40% and telson 14% to total BL.

Carapace (Fig. 14C, G). Normal, length 44% of BL, cervical sulcus strong, cardial sulcus weak. Disto-lateral edges about rectangular, distally narrowly rounded. Concave posterior margin of carapace leaving ultimate thoracomere only marginally dorsally exposed.

Eyes (Fig. 15). Eye rudiments dorsoventrally compressed by a factor of 1.7–1.8. Rostral projection ending in a single triangular ocular papilla at one third of eye width from mesial margin (Fig. 15C). Antero-posterior extension of eyes 0.7 of maximum width (= transverse extension) and 1.2 times length of terminal segment of antennular trunk. Spiniform scales covering eyes also extend over papilla (Fig. 15D). Papilla ends in a toroid with pore in center. Organ of Bellonci near mesio-basal edge of eye.

Antennula (Fig. 16A). Trunk measures 9% of BL. It extends ⅘ of its length beyond eyes. Roughly transverse articulations between three segments of trunk. Measured along dorsal midline, basal segment 0.4 of trunk length, median 0.2 and terminal 0.4. Length of basal segment 0.7 times width; segment dorsally with antennular bursa, no ventral carina. This segment produced into a short lobe at disto-lateral edge, lobe apically with five setae. Two setose dorsal apophyses (dashed lines in Fig. 16A) shortly extending beyond its rostral margin. Median segment also with two setose dorsal apophyses. Length of terminal segment 0.8 times width in dorsal view, 0.7 in ventral view. Terminal segment without female lobe. Disto-median lobe of terminal segment armed with three small teeth increasing in size laterally, lobe disto-laterally with four barbed setae (as in Fig. 4B). Width of outer antennular flagellum measured near basis 1.2 times width of inner flagellum.

Antenna (Fig. 16C). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Segments 1–4 of peduncle contribute 26%, 13%, 25% and 36% to total length in dorsal view, vs 27%, 31%, 18% and 24% in ventral view, respectively. Differences between dorsal and ventral views mainly due to lengthwise oblique border between second segment and dorsally overlapping third segment.

Cephalothorax. Clypeus (Fig. 16B) with low longitudinal ridge marginally extending beyond frontal lobe. Mouthparts essentially as in other species of *Amblyops* treated here. Thoracic endopods 1–2 with six segments (Fig. 18A, C), dactylus with slender nail (Fig. 18B, D). Dactylus of endopod 2 not reflexed (Fig. 18C–D). Thoracic exopod 1 with nine segments, exopod 2 with 9–10 and exopods 3–8 with ten.

Pleon and tail fan (Fig. 19). Length of pleomeres 1–5 is 0.6, 0.5, 0.5, 0.5 and 0.6 times length of pleomere 6, respectively. Pleopods increase in length caudally. Scutellum paracaudale large, sinusoid. Uropods with smooth cuticle, not considering setae and single spine of endopod. Exopod with convex mesial margin; its terminus broadly rounded, convex. Exopod 1.2–1.4 times as long as endopod and 1.6–1.8 times as long as telson; endopod 1.2–1.4 times as long as telson. Margins of endopod converge in narrow V-shaped manner up to blunt apex. Telson length 1.2 times as long as ultimate pleomere; width at terminus (measured between lateral margins of latero-terminal spines) is 23% of maximum width and 12% of telson length.

Paratypes

Covers features requiring dissection. Uptilted portion of carapace (Fig. 14C) on each side with transverse field of about 80–90 pores (only few pores visualized in Fig. 14D). No pores detected (though not excluded) near posterior margin of carapace.

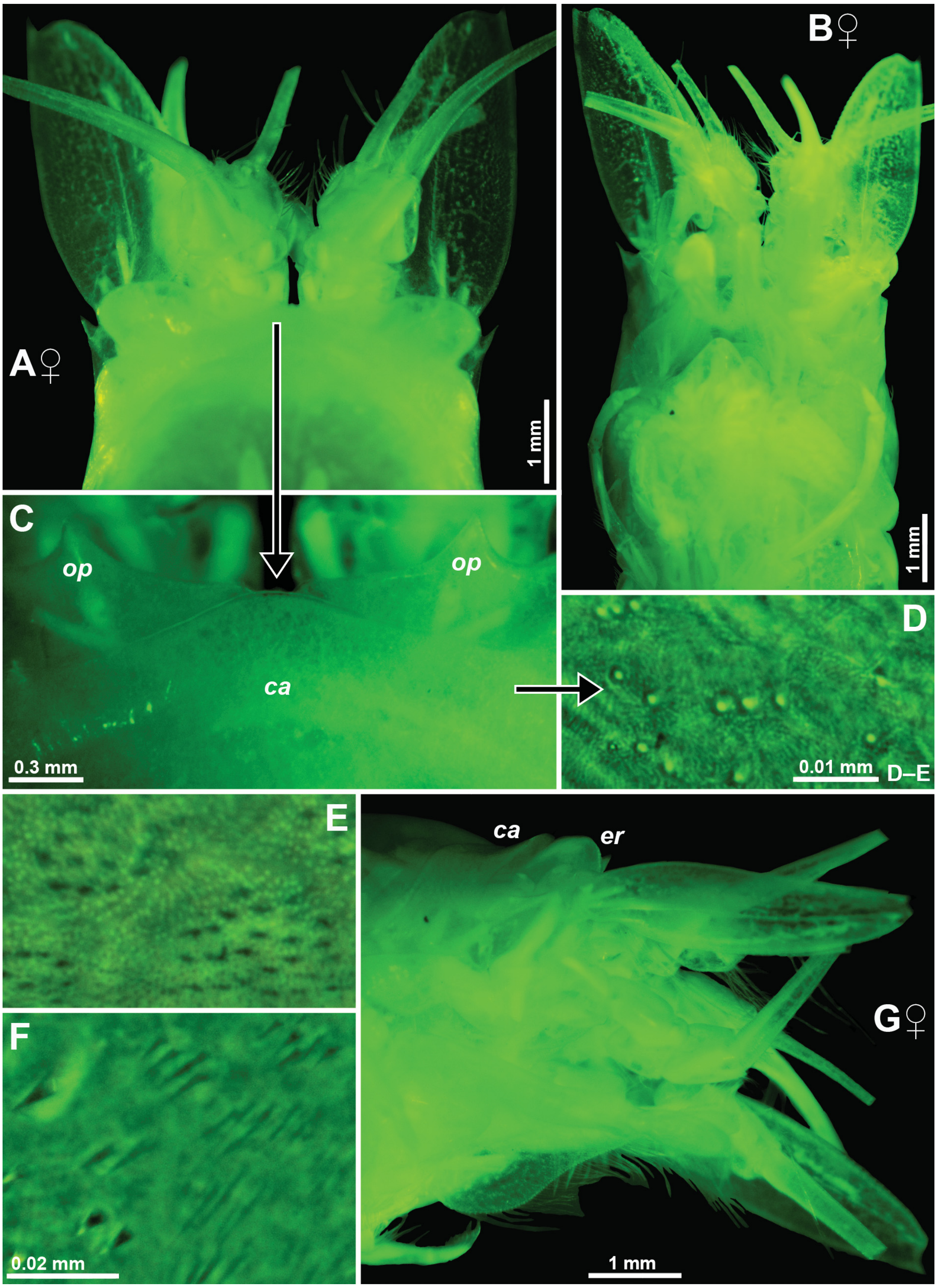

Fig. 14. *Amblyops arianii* sp. nov., holotype, adult female with BL of 25.8 mm (A–C, G: ZMH 64653) and paratype, subadult female 24.2 mm (D–F: ZMH 64655). **A–B**. Cephalon, dorsal (A) and ventral (B) views. **C**. Detail of A, showing rostrum and disto-mesial portion of eye rudiments. **D**. Detail of C, showing part of pore field sublaterally on rostrum in another specimen. **E**. Scale field close to lateral margin of telson, dorsal view. **F**. Scales near proximal margin of exopod of maxilla, caudal view. **G**. Cephalic region, latero-ventral view. Abbreviations: *ca* = carapace; *er* = eye rudiment; *op* = ocular papilla. A–B, G. Objects artificially separated from background.

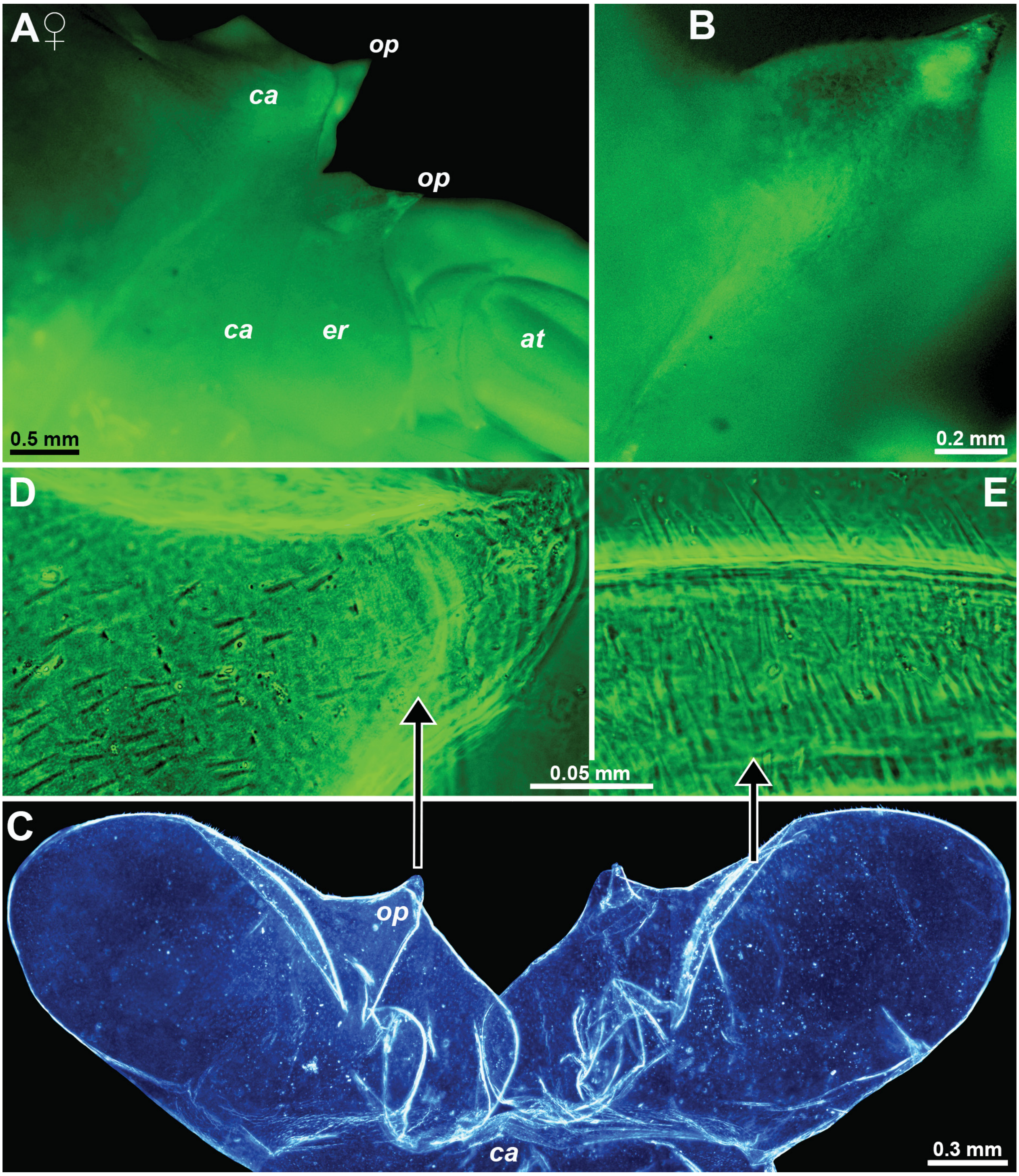

Fig. 15. Eyes in *Amblyops arianii* sp. nov., holotype, adult female with BL of 25.8 mm (A–B: ZMH 64653) and paratype, subadult female 24.2 mm (C–E: ZMH 64655). **A**. Anterior margin of cephalon in loco, lateral view. **B**. Detail of A showing left ocular papilla with focus on nerve cord, dorsal view. **C**. Eye rudiments expanded on slide, dorsal view. **D**. Detail of C showing left ocular papilla, focus on dorsal face. **E**. Detail of C showing hair-like scales covering surface of eye rudiments. Abbreviations: *at* = antennular trunk; *ca* = carapace; *er* = eye rudiment; *op* = ocular papilla. A, C. Objects artificially separated from background.

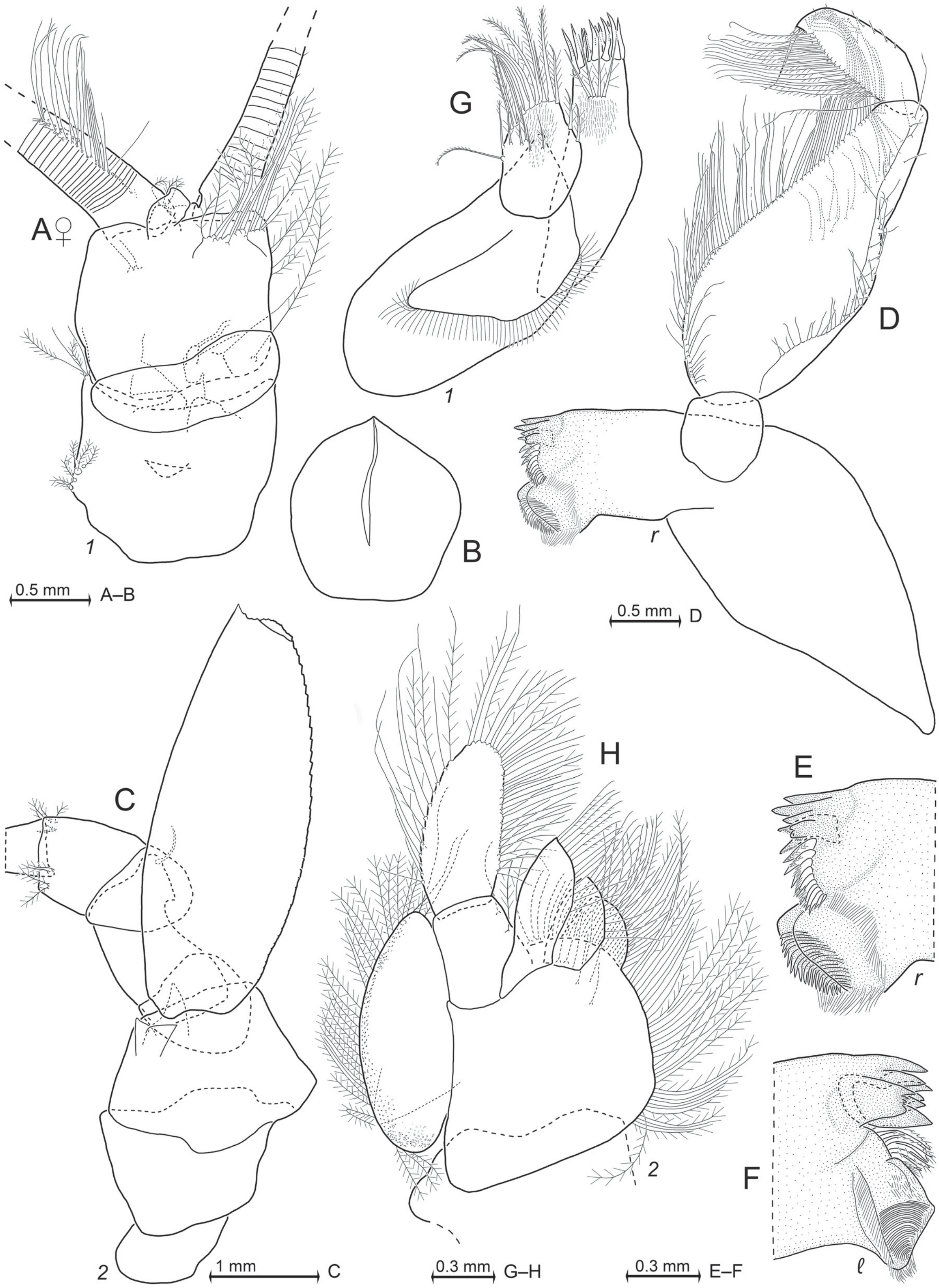

Fig. 16. *Amblyops arianii* sp. nov., paratype, subadult female with BL of 24.2 mm (ZMH 64655). **A**. Right antennula, ventral view. **B**. Clypeus, ventral view. **C**. Antenna, its sympod with end sac of antennal gland, dorsal view, setae of antennal scale omitted. **D**. Right mandible with palpus, rostral view. **E–F**. Masticatory part of right (E) and left (F) mandibles, rostral view. **G**. Maxillula, caudal view. **H**. Maxilla, caudal view.

Mandibles (Fig. 16D–F). Basal segment of palp contributes 14–16%, median segment 61–64% and apical segment 21–23% to total palp length. Median segment 2.3–2.6 times as long as wide, mesial and lateral margins convex, lateral margin folded mesially. Length of apical segment 2.6–2.9 times maximum width. Palp not hispid, its basal segment without setae, median segment strongly setose along mesial margin and less strongly along lateral margin, apical segment densely setose along mesial margin and with only few short setae along lateral margin. Distal half of median segment in addition with linear series of setae along midline of caudal face. Masticatory part of right mandible (Fig. 16E): pars incisiva with four large plus one medium-sized tooth; digitus mobilis with two large teeth, each serrated by series of small secondary teeth. Pars centralis with ten acute spines in dense series, continuously decreasing in size proximally: two largest, most ventral (= aboral) spines serrated by small denticles, remaining spines armed with stiff bristles. Processus molaris of right mandible and complete masticatory part of more normal left mandible (Fig. 16F) as in *A. bipapillatus* sp. nov. (Fig. 21C–E).

Gut (Fig. 17). Foregut with normal gross structure. Anterior part of lateralia with many distally all around strongly dentate spines (Fig. 17B). Long slender spines cactus-like along distal 6–10% (Fig. 17B2), shorter, less slender spines prickly along distal ¼–½ (Fig. 17B1). Anterior part of lateralia in addition with fewer slender, proximally smooth, subapically sparsely dentate and apically coronate spines (Fig. 17B3). Central part of lateralia with slender, apically pronged spines (Fig. 17C) densely coated with minute teeth along about distal half of shaft. Posterior part of lateralia on each side with dense cluster of ten strongly dentate spines (Fig. 17D). Dorsolateral infoldings on each side with cluster of five spines increasing in size laterally, these spines unilaterally serrated along most of distal third to half (Fig. 17E). All setae of superomedianum slender and distally microserrated; lateral setae (Fig. 17F) longer than caudal setae. Storage volume almost empty in dissected specimen. Sparse presence of unidentifiable organic materials (detritus) and small mineral particles in both foregut and midgut. Anal lobe caudally strongly cuticularized (dashed lines in Fig. 19D).

Maxillula (Fig. 16G). Distal segment with eleven strong spines on transverse terminal margin, these spines unilaterally serrated mostly along median portions. This segment subterminally with four setae bearing long stiff barbs; no nearby pores detected. Endite of maxillula terminally with six large, distally spiny setae, on both sides accompanied by numerous less strongly barbed setae. Most proximal seta backward curved.

Maxilla (Figs 14F, 16H). Sympod with three mesial lobes, densely setose along disto-mesial margins. Convex mesial portion of sympod may be interpreted as additional lobe bearing large, dense fan of setae. One large seta extends shortly beyond this fan, on caudal face, at margin near distally neighboring lobe; this seta apically and subapically with series of short, stiff barbs. Exopod of maxilla reaches to terminal margin of basal segment of palp. Exopod with dense series of plumose setae all along lateral margin; largest seta (dashed line in Fig. 16H) at tip of exopod. Mesial margin bare except for one subapical seta. Ribbon of triangular scales all along lateral margin, on distal half constituted by series of about 5–10 µm long scales, each accompanied by mostly only one small, 2–5 µm long scale, on proximal half with higher incidence of small triangular scales. Basal sinus of exopod with triangular scales together with slender, bristle-like scales (Fig. 14F). The smaller and more slender scales are, the more they tend to occur in clusters of 3–8 scales. Maxillary palp with distal segment contributing ⅗ of palp length. This segment two times as long as maximum width, densely setose all along distal ⅘, no spines. Mesial margin of proximal segment with three normal-shaped barbed setae (partly below drawing plane in Fig. 16H).

Thorax (Fig. 18). Sternite 1 with distally rounded median lobe as normal in Mysidae. One large, basally thick barbed seta closely accompanied by 6–8 smaller such setae (Fig. 18C) on intersegmental joint between sympod 2 and its sternite. Basal plate of exopods with smooth cuticle, length 1.8–2.0 times maximum width, plates with minute tooth-like projection on disto-lateral edge, projection unapparent

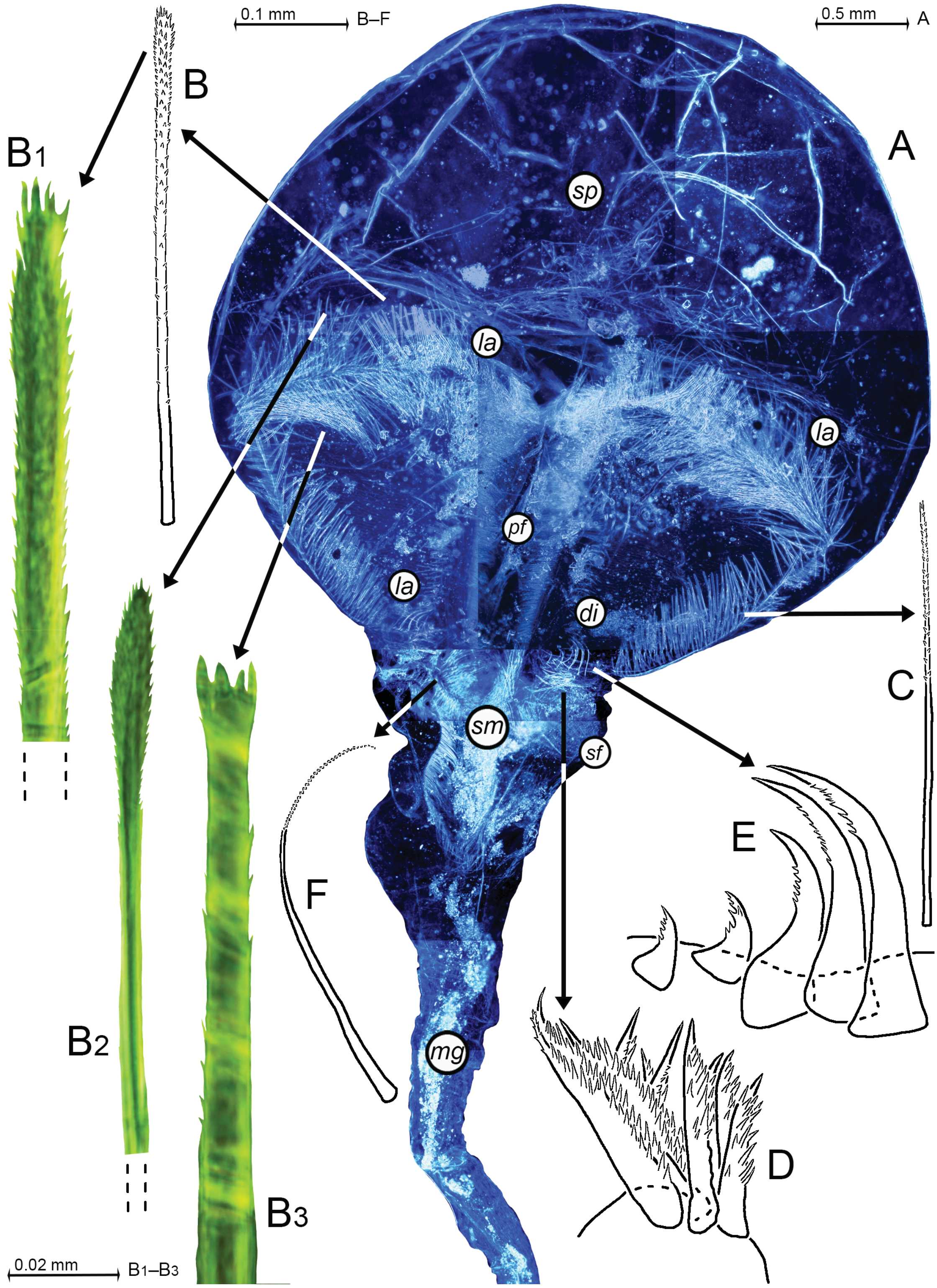

Fig. 17. Foregut and midgut in *Amblyops arianii* sp. nov., paratype, subadult female with BL of 24.2 mm (ZMH 64655). **A**. Foregut expanded on slide, dorsal view. **B–F**. Details of A, arrows point to modified spines (B–E) and seta (F) of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *pf* = primary cardiac filter; *sf* = secondary pyloric filter; *sm* = superomedianum; *sp* = storage space. A. Figure composed from small photos. A, B1–B3. Objects artificially separated from background. B1, B3. The transverse stripes are phase-contrast artefacts from other objects out of focus.

in Fig. 18C due to its small size. Flagellum of exopod 2 with only nine segments in dissected subadult female (Fig. 18C) vs ten in adult holotype. Epipod 1 leaf-like, longer than combined ischium, merus and carpus of endopod 1; no seta (Fig. 18A). Endopods 1–2 and 8 available in subadults and immatures, remaining endopods broken. Endopods 1–2 with six segments (Fig. 18A, C), endopod 8 with eight segments counting from basis to dactylus (Fig. 18F). Thoracic endopod 8 with its three carpopropodus segments separated from each other by oblique articulations (Fig. 18F). Available endopods with smooth cuticle not counting setae; no pores detected. Coxa of endopod 1 (Fig. 18A) with small mesial lobe apically bearing one small barbed seta; basis with large, setose endite, remaining segments without clear endite. All available dactyli with slender, weakly curved acute nail; nail 8 short (Fig. 18G), nail 1 normal-sized (Fig. 18B), nail 2 longest (Fig. 18D); nails 1–2 microserrated along median to subapical portions of weakly concave mesial (= inner) margin (Fig. 18B, D–E), nail 8 smooth (Fig. 18G).

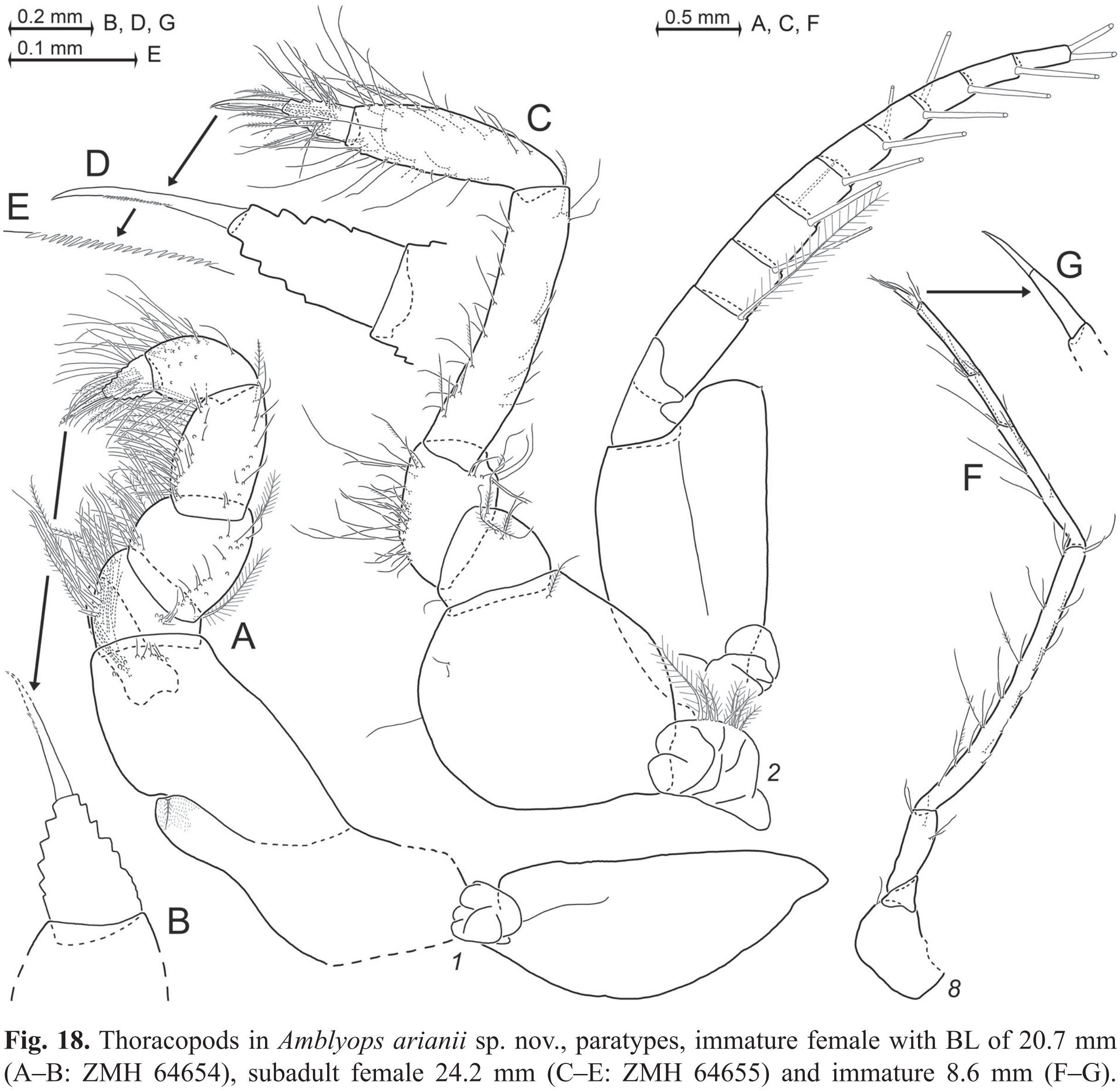

Fig. 18. Thoracopods in *Amblyops arianii* sp. nov., paratypes, immature female with BL of 20.7 mm (A–B: ZMH 64654), subadult female 24.2 mm (C–E: ZMH 64655) and immature 8.6 mm (F–G). **A**. Thoracic endopod 1 with epipod 1, caudal view (exopod broken). **B**. Detail of A, showing dactylus 1 with nail, setae omitted. **C**. Thoracopod 2, caudal view. **D**. Detail of C, showing dactylus 2 with nail, setae omitted. **E**. Detail of D, showing serrated mesial margin of nail. **F**. Thoracic endopod 8, caudal view. **G**. Detail of F, showing dactylus 8 with nail, setae omitted.

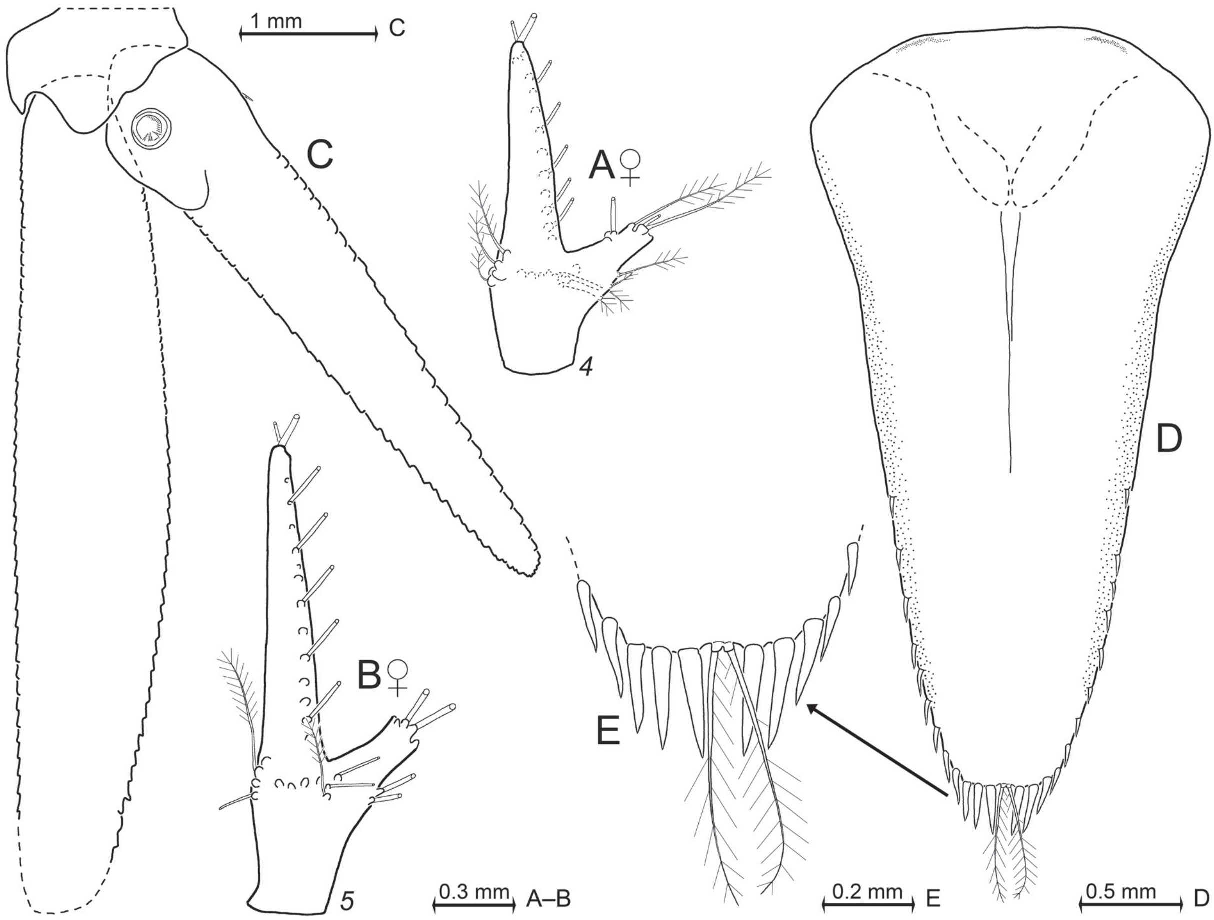

Fig. 19. Pleopods and tail fan in *Amblyops arianii* sp. nov., holotype, adult female with BL of 25.8 mm (C: ZMH 64653) and paratype, subadult female 24.2 mm (A–B, D–E: ZMH 64655). **A**. Pleopod 4, mesial (= caudal) view, most setae broken. **B**. Pleopod 5, lateral (= rostral) view, most setae broken. **C**. Uropods, dorsal view, setae omitted. **D**. Telson, dorsal view. **E**. Detail of D, showing terminus of telson.

Tail fan (Figs 14E, 19C–E). Exopod of uropods extends 0.3–0.4 times its length beyond endopod and 0.4–0.6 times beyond telson. Statoliths composed of fluorite, diameter 0.12–0.28 mm (n = 4). Telson near basal margin with a pair of transverse pore fields flanking midline; each field with ≈100 pores with diameter < 2 µm as in Fig. 14D (<100 pores visualized as dots in Fig. 19D). Telson with about 2 µm long triangular scales along most of its lateral margins. Scales organized in clusters of up to thirty (Fig. 14E). Together, clusters form narrow longitudinal ribbon (shaded areas in Fig. 19D) proceeding close to each lateral margin along $\frac{1}{12}$–$\frac{11}{12}$ telson length from basis.

Amblyops bipapillatus **sp. nov.**
urn:lsid:zoobank.org:act:D3C59570-163A-4707-A043-F889EA94456A
Figs 20–24

Diagnosis

Based on adult female. Fitting within ranges of generic diagnosis. Carapace with broadly rounded anterior margin. Eye rudiments with complex structure (Figs 20, 21A), no visual elements; eyes converging mesially, dorsoventrally compressed by a factor of 1.3–1.5. Each eye rudiment with two basally wide ocular papillae; length of distal papilla 28–31% of length of antero-posterior extension of eye rudiment, proximal papilla 21–26%. Distal papilla mid-rostrally forming part of anterior margin, and proximal papilla at distal third from mesial margin. Disto-lateral edge of antennal sympod produced into one large tooth. Antennal scale with setose mesial margin and bare lateral margin up to remaining, available scale length (apex broken). Mouthparts normal, labrum rostrally rounded. Thoracic exopod 1 with 9-segmented flagellum, exopods 4–8 with 10-segmented flagellum (exopods 2–3 broken). Three carpopropodus segments separated from each other by oblique articulations in thoracic endopods 5 and 8 (endopods 3–4 and 6–7 broken). Female with three pairs of oostegites contributing to outer wall of marsupium, first pair small but functional. Endopod of uropods with one minute spine on mesial margin below statocyst. Telson linguiform, distal half subtriangular with nearly continuously converging lateral margins, narrow terminal margin flattened; telson length 2.2 times maximum width. Lateral margins proximally bare, their distal $\frac{4}{7}$ armed with 29–32 normal-shaped spines, distally gradually increasing in size; terminal margin with small median spine flanked by slightly subterminally inserting pair of setae, in turn flanked by two pairs of large spines, among which submedian spines largest, only ≈$\frac{1}{15}$ of telson length. Telson with total of ≈66 spines and two setae.

Etymology

The species name is an adjective with masculine ending, formed by amalgamation of the Classic Latin adverb ‘*bis*’ (‘twice’) with the adjective ‘*papillatus*’ (‘papillary’), referring to the pair of papillae on each eye rudiment (Fig. 20A–C).

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 16.7 mm, on slides); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 080-9; 70°39.07′ S, 14°43.36′ W to 70°39.22′ S, 14°43.39′ W; depth 3103–3102 m; 23 Feb. 2005; EBS epinet; ZMH 64659.

Other material

SOUTHERN OCEAN • 1 juv. (BL = 5.8 mm, in 2 parts); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 151-7; 61°45.52′ S, 47°07.68′ W to 61°45.42′ S, 47°08.04′ W; depth 1182–1185 m; 21 Mar. 2005; EBS epinet.

Type locality and distribution

The type locality is ANDEEP III station 080-9: eastern Weddell Slope, Kapp Norvegia, SW of Wegener Canyon, 70°39.07′ S, 14°43.36′ W to 70°39.22′ S, 14°43.39′ W, depth 3103–3102 m. Also found in the Powell Basin. Total range 62–71° S, 15–47° W, depth 1182–3103 m.

Description

Holotype (♀)

All features as in specific diagnosis. Adult female with empty marsupium, BL = 16.7 mm. Carapace measures 31% of BL, cephalothorax 36%, pleon without telson 48% and telson 16%. Small, distally rectangular subrostral process extends shortly beyond anterior margin of carapace. Clypeus with short median projection anteriorly, not reaching half-length of basal segment of antennular trunk (Fig. 21A).

Carapace (Figs 20E, 21A). Normal, cervical sulcus strong, no cardial sulcus visible; disto-lateral edges rounded; posterior margin concave, terminal indentation shallow, broadly rounded. Carapace leaves 1½ thoracomeres mid-dorsally exposed. No pores detected (though not excluded). Large parts of carapace indicated as shadowed areas in Fig. 21A covered by roughly ellipsoidal cuticular structures (Fig. 20E), representing minute depressions in part (accidentally) filled with external material.

Eyes (Figs 20A–D, 21A). Antero-posterior extension of eye rudiments 0.8 of maximum width and about as long as terminal segment of antennular trunk. Organ of Bellonci near distal papilla. Rudiments with smooth cuticle all around except for pore at tip of ocular papillae and slender tooth-like scales (Fig. 20D) along mesially declining diagonal margin which separates thicker proximo-lateral portion from disto-mesial portion of eye rudiment; no other scales on eye rudiments.

Antennula (Fig. 21A). Trunk measures 9% of BL. It extends ¾ of its length beyond eyes. Transverse articulation between three trunk segments. Measured along dorsal midline, basal segment 0.4 of trunk length, median 0.2 and terminal 0.4. Length of basal segment 0.7 times width. Basal segment produced in short lobe at disto-lateral edge, lobe apically with four setae; antennular bursa distinct, no ventral carina. Length of terminal segment 0.8 of width in dorsal view, 0.9 in ventral view. This segment with

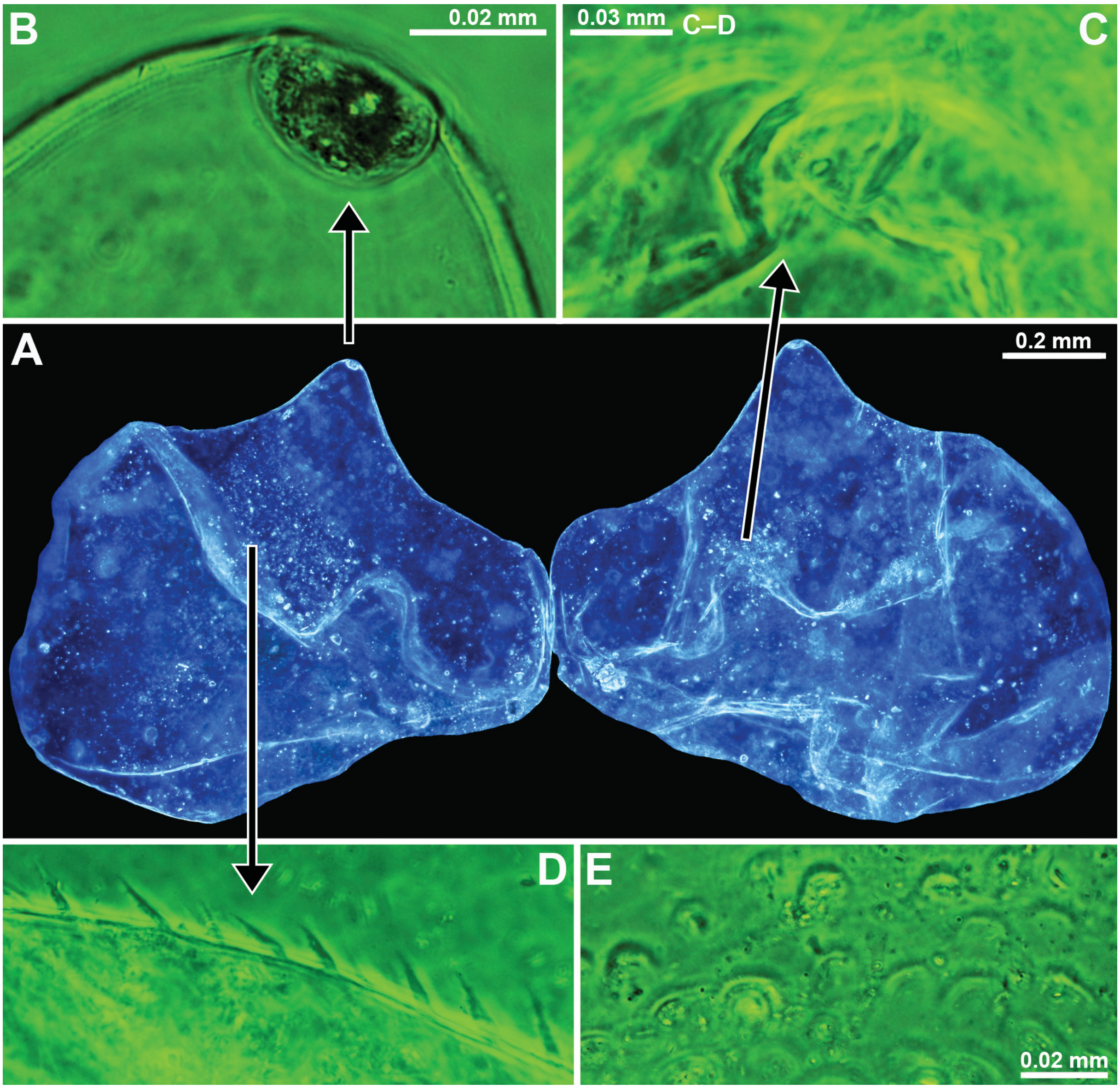

Fig. 20. *Amblyops bipapillatus* sp. nov., holotype, adult female with BL of 16.7 mm (ZMH 64659). **A**. Eyes expanded on slide, dorsal view. **B–C**. Details of A, showing tip of distal (B) and proximal (C) papilla. **D**. Detail of A, showing scales along distal margin of dorsal elevation. **E**. Cuticle structures covering part of carapace. A. Object artificially separated from background.

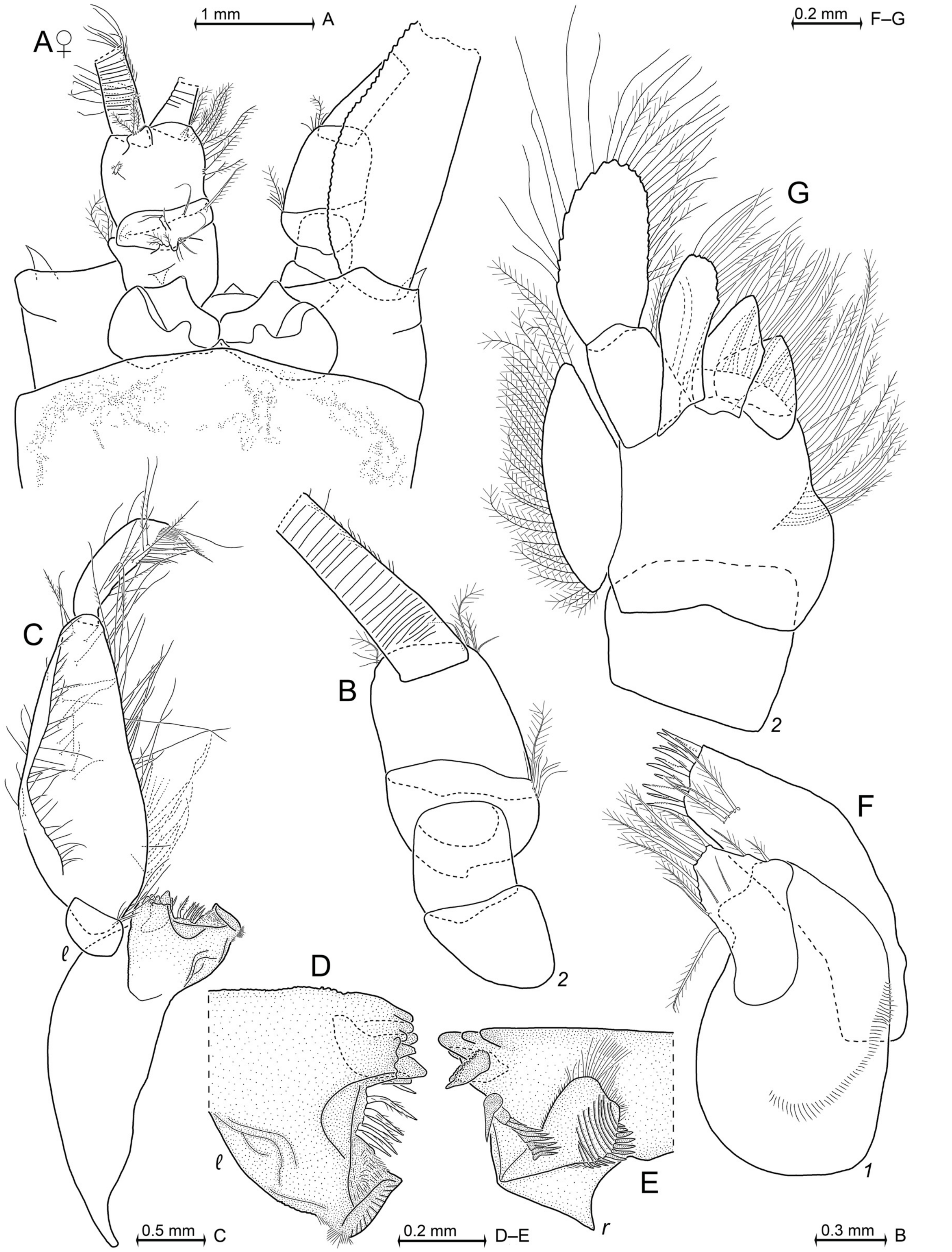

Fig. 21. *Amblyops bipapillatus* sp. nov., holotype, adult female with BL of 16.7 mm (ZMH 64659). **A**. Cephalic region, dorsal view; right antennula, left antenna and setae of antennal scale omitted. **B**. Right antennal peduncle, ventral view. **C**. Left mandible with palpus, rostral view; broken setae on lower third of mesial margin of median segment were restored based on right palpus and visualized by dashed lines. **D–E**. Masticatory part of left (D) and right (E) mandibles, rostral view. **F**. Maxillula, caudal view. **G**. Maxilla, caudal view.

disto-median lobe armed with three small teeth increasing in size laterally, lobe disto-laterally with four barbed setae as in Fig. 4B; no female lobe, no callynophore (Fig. 21A). Width of outer antennular flagellum measured near basis about same as width of inner flagellum.

Antenna (Fig. 21A–B). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Segments 1–4 contribute 27%, 12%, 18% and 42% to total length of peduncle in dorsal view, vs 28%, 28%, 13% and 31% in ventral view, respectively. Differences between dorsal and ventral views mainly reflect strongly oblique border between second segment and dorsally overlapping third segment. Tip of antennal scale broken in both available specimens.

Mandibles (Fig. 21C–E). Basal segment of palp contributes 9–10%, median segment 64–66% and apical segment 25–26% to total palp length. Median segment 2.4–2.6 times as long as wide, mesial and lateral margins convex, lateral margin bent mesially (Fig. 21C). Length of apical segment 3–4 times maximum width. Palp not hispid, its basal segment without setae, median segment densely setose along lateral and mesial margins, apical segment densely setose along mesial margin and only sparsely setose along lateral margin. Masticatory part of right mandible (Fig. 21E): pars incisiva with four large teeth; digitus mobilis serrated by numerous small teeth over most of its mesial margin, its disto-mesial edge extended into one large tooth. Pars centralis with eight acute, smooth spines: most ventral (= aboral) spine very large, these spines set apart dorsally (orally) followed by dense series of one small and six intermediate-sized spines. Processus molaris folded ventrally, bearing strong grinding lamellae proximally ending in teeth and dense bundle of stiff bristles on distal margin including proximal edge. Masticatory part of left mandible (Fig. 21C–D): pars incisiva with four large and several small teeth; digitus mobilis with four large teeth, pars centralis with six slender spines armed with stiff bristles; processus molaris with short grinding lamellae proximally not ending in teeth and with dense cover of stiff bristles on proximal (= oral) edge.

Gut (Fig. 22). Foregut with normal gross structure. Lateralia with brushes of slender, proximally smooth, apically coronate spines (Fig. 22B) of various length and with slender, apically pronged spines (Fig. 22C), only latter type of spines densely coated with minute teeth along at least distal half of shaft. Posterior part of lateralia on each side with cluster of 11–12 spines armed with stiff bristles, peripheral spines larger than central spines (Fig. 22D). Dorsolateral infoldings on each side with cluster of two large spines at some distance mesially accompanied by 3–4 smaller spines, all these spines unilaterally serrated along distal third to half (Fig. 22E). Storage volume about half-filled with mainly masticated, unidentifiable organic materials (detritus) and abundant large mineral particles, plus remains of at least one copepod. Midgut with unidentified organic material and with many mineral particles, on average smaller than those of foregut. Anal lobe distinct (dashed lines in Fig. 24F), weakly cuticularized.

Maxillula (Fig. 21F). Distal segment with eleven strong spines on transverse terminal margin, these spines unilaterally serrated mostly along median portions. This segment subterminally with three setae bearing long stiff barbs; no nearby pores detected. Endite of maxillula terminally with three large, distally spiny setae, on both sides accompanied by numerous less strong setae. Most proximal seta backward curved.

Maxilla (Fig. 21G). Sympod with three mesial lobes, densely setose along their disto-mesial margins. Convex mesial portion of sympod may be interpreted as additional lobe bearing large, dense fan of setae. One large seta extends shortly beyond this fan, on caudal face, at margin near distally neighboring lobe; this seta apically and subapically with unilateral series of short, stiff barbs. Exopod of maxilla just barely not reaching terminal margin of basal segment of palp. Exopod with dense series of plumose setae all along lateral margin; largest seta at tip of exopod. Mesial margin bare. Maxillary palp with distal segment contributing ⅗ of palp length. This segment two times as long as maximum width; segment densely setose all along distal ⅔, no spines. Mesial margin of proximal segment with three normal-shaped barbed setae (below drawing plane in Fig. 21G, therefore visualized by dashed lines).

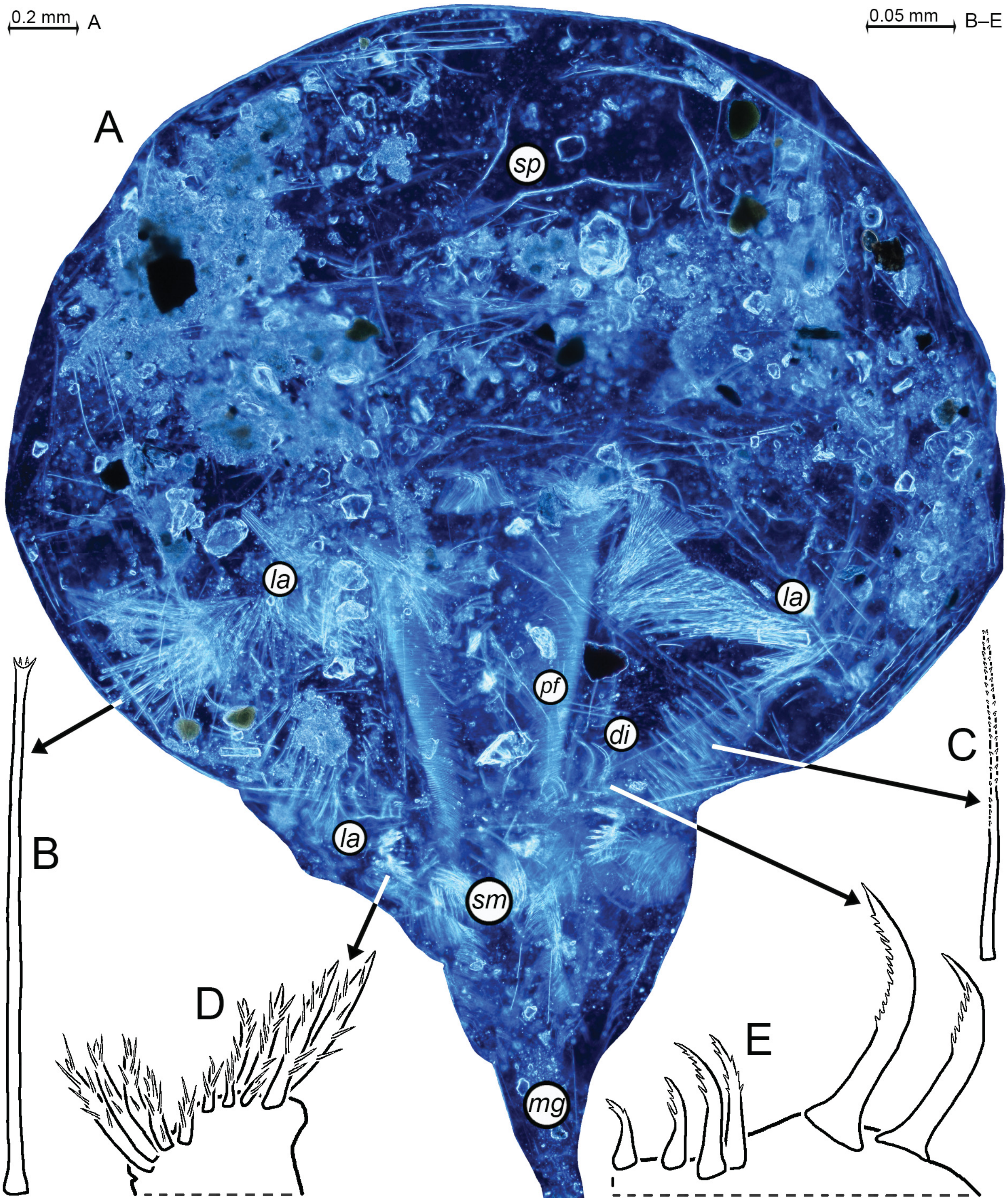

Fig. 22. Foregut in *Amblyops bipapillatus* sp. nov., holotype, adult female with BL of 16.7 mm (ZMH 64659). **A**. Foregut expanded on slide, dorsal view. **B–E**. Details of A, arrows point to modified spines of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *pf* = primary cardiac filter; *sm* = superomedianum; *sp* = storage space. A. Object artificially separated from background.

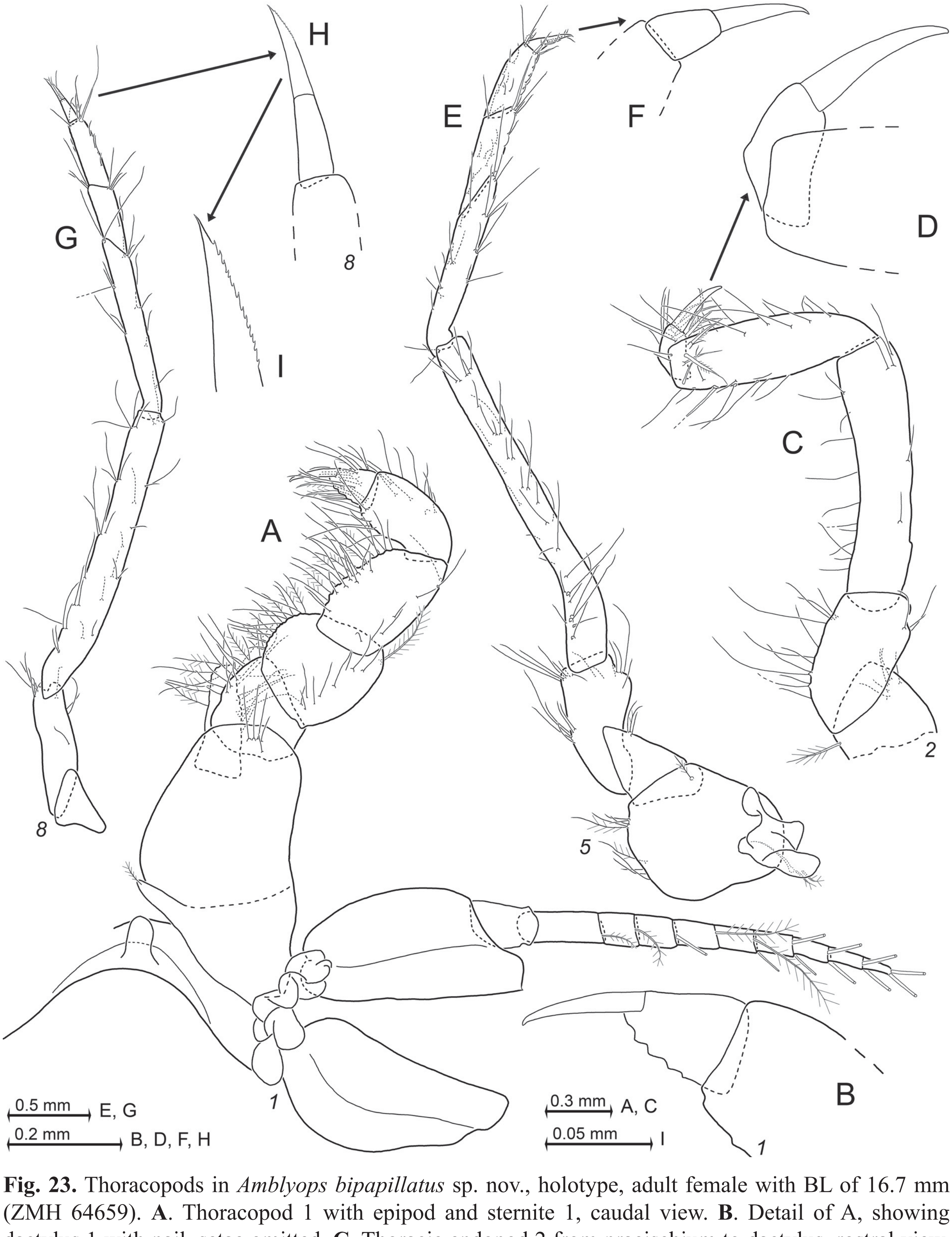

Fig. 23. Thoracopods in *Amblyops bipapillatus* sp. nov., holotype, adult female with BL of 16.7 mm (ZMH 64659). **A**. Thoracopod 1 with epipod and sternite 1, caudal view. **B**. Detail of A, showing dactylus 1 with nail, setae omitted. **C**. Thoracic endopod 2 from praeischium to dactylus, rostral view. **D**. Detail of C, showing dactylus 2 with nail, setae omitted. **E**. Thoracic endopod 5, caudal view. **F**. Detail of E, showing dactylus 5 with nail, setae omitted. **G**. Thoracic endopod 8 from praeischium to dactylus, caudal view. **H**. Detail of G, showing dactylus 8 with nail, setae omitted. **I**. Detail of H, showing distal half of nail 8.

THORAX (Fig. 23). Sternite 1 with distally rounded median lobe as normal in Mysidae. One large, basally thick, barbed seta closely accompanied by 2–4 smaller such setae (most parts below drawing plane, visualized by dashed lines in Fig. 23E) on intersegmental joint between sternites 4–7 and respective sympods (sternites 2–3 and 8 damaged). Exopods 1 and 4–8 available, remaining exopods broken. Available basal plates with smooth cuticle, length twice maximum width, plates with minute tooth-like distal projection on disto-lateral edge, projection unapparent in Fig. 23A due to its small size. Epipod 1 leaf-like, about as long as combined ischium and merus of endopod 1; no seta. Endopods 1–2, 5 and 8 available, remaining endopods broken. Available endopods with smooth cuticle, not counting setae; no pores detected. Coxa of endopod 1with small mesial lobe apically bearing one small barbed seta; basis with large, setose endite, remaining segments without clear endite. Endopods 1–2 with six segments (Fig. 23A, C), endopods 5 and 8 with eight segments counting from basis to dactylus (Fig. 23E). Dactylus of endopod 2 reflexed (Fig. 23C–D). All available dactyli with basally wide, weakly curved acute nail; nails 5 and 8 short (Fig. 23F, H), nail 1 normal-sized (Fig. 23B), nail 2 longest (Fig. 23D); nails 1–2 and 5 smooth (Fig. 23B, D, F), nail 8 microserrated along distal fourth of its convex lateral (= outer) margin (Fig. 23I). Serration of outer rather than inner margin appears exceptional in Mysidae.

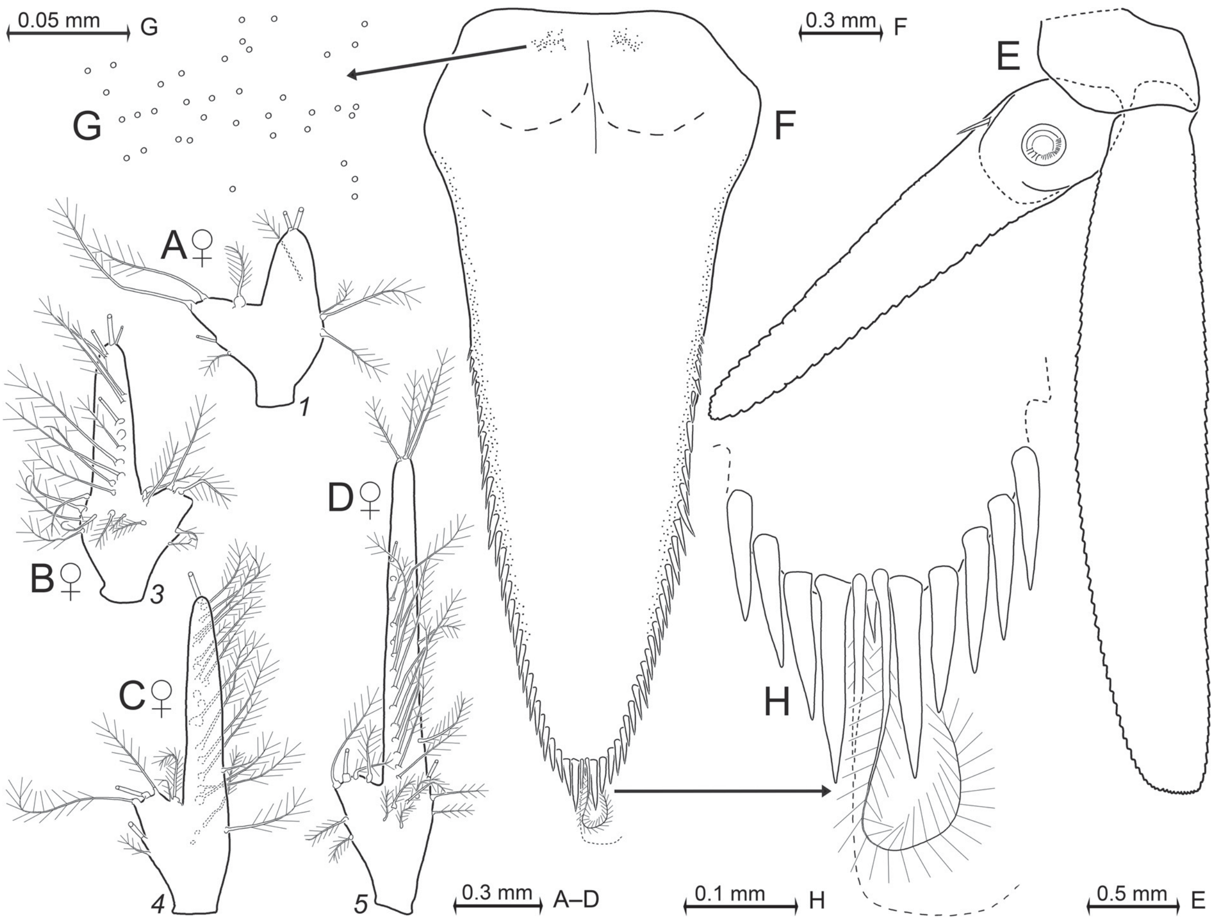

Fig. 24. Pleopods and tail fan in *Amblyops bipapillatus* sp. nov., holotype, adult female with BL of 16.7 mm (ZMH 64659). **A**. Pleopod 1, mesial = caudal. **B**. Pleopod 3, lateral = rostral view. **C**. Pleopod 4, mesial view. **D**. Pleopod 5, lateral view. **E**. Uropods, ventral view, setae omitted. **F**. Telson, dorsal view. **G**. Detail of F, showing left pore field close to base of telson. **H**. Detail of F, showing terminus of telson. F–G. Pore diameters not to scale.

Pleon (Fig. 24A–D). Length of pleomeres 1–5 is 0.6, 0.6, 0.5, 0.5 and 0.6 times length of pleomere 6, respectively. Pleopods increasing in length caudally. Scutellum paracaudale subtriangular with weakly convex margins and blunt apex.

Tail fan (Fig. 24E–H). Uropods with smooth cuticle, not considering setae and single spine. Margins of endopod converge in narrow V-shaped manner up to blunt apex. Exopod with almost straight lateral margin and convex mesial margin; its terminus broadly rounded, convex. Exopod measures 1.3 times endopod length and also 1.3 times that of telson; endopod about as long as telson. Exopod extends 0.3 times its length beyond endopod and 0.4 beyond more rostrally inserting telson. Statoliths composed of fluorite, diameter 10–11 µm, thickness 7–8 µm (n = 2). Telson length 1.3 times that of ultimate pleomere; width at terminus (measured between lateral margins of latero-terminal spines) is 12% of maximum width and 6% of telson length. Dorsal face of telson subbasally with paramedian fields with 34 and 37 pores, respectively (Fig. 24F–G), pore diameters <3 µm. Telson with triangular scales organized in clusters as in Fig. 14E. Clusters together form narrow longitudinal ribbon (shaded lateral areas in Fig. 24F) proceeding close to each lateral margin between ⅙ and ⅚ of telson length from basis.

Desmocornea **gen. nov.**
urn:lsid:zoobank.org:act:7A9D3ED7-5555-44F5-93E8-520164BEECE7

Type species

Desmocornea subchelata gen. et sp. nov. by monotypy and present designation.

Diagnosis

Based on adult female. Carapace normal. Bilobate eyes set laterally apart, not connected by membranous integument, no definite eyestalk. Adult eye with incomplete ommatidia (unlike in well-developed eye of juvenile). Lateral third of eyes occupied by lobe containing ommatidia in linear arrangement, together forming self-contained ribbon. Eye with one sensory papilla, no tooth-like non-sensory projection. Antennal peduncle 4-segmented with oblique border between second segment and dorsally overlapping third segment. Antennal scale with small apical segment; mesial margin setose, lateral margin all along bare, scale with large apical tooth; setose apical lobe not reaching tip of this tooth. Mouthparts normal, labrum rostrally rounded. Thoracomeres and pleomeres normal. Thoracic endopod 2 ending in subchela formed by reflexed, strongly elongate dactylus with claw facing carpopropodus. Female with three pairs of well-developed oostegites. Female pleopods reduced to uniramous setose plates with pseudobranchial lobe. Both rami of uropods unsegmented, setose all around. Lateral margins of telson converging laterally, not serrated; no lateral constriction, no terminal incision; lateral margins and transverse terminal margin with spines.

Etymology

The genus name is a noun with feminine ending, formed by fusion of the Classic Greek 'δεσμός' ('ribbon') with the morphological term 'cornea' referring to the cornea of the lateral eye lobe forming a self-contained ribbon (Fig. 27B).

Desmocornea subchelata **gen. et sp. nov.**
urn:lsid:zoobank.org:act:3B26DF92-6C03-4CC6-A5FE-0097382D8D57
Figs 25–30

Diagnosis

Based on adult female. All features as in generic diagnosis. Eyes bilobate, differentiated in a bulbous, dorsoventrally flattened mesial lobe and a smaller, roughly calotte-shaped lateral lobe. Eyestalk fused only with mesial lobe. Reduced ommatidia of mesial lobe face centripetally; modified, in some way functional ommatidia of lateral lobe face laterally, tightly set in parallel orientation, together forming self-contained ribbon. One large tooth close to acute disto-lateral edge of antennal sympod. Antennal scale extends 0.6 times its length beyond antennular trunk and 0.3–0.4 times beyond antennal peduncle. Total scale length three times maximum width; its disto-lateral tooth mesially closely accompanied by two short spines. Thoracic exopod 1 with 9-segmented flagellum, exopods 2, 5–6 and 8 with 10-segmented flagellum (exopods 3–4 and 7 broken). Carpopropodus 2 weakly elongate, longer than merus; reflexed dactylus strongly elongate, > 4 times as long as wide, claw stout and short, ⅖ as long as dactylus. Endopod of uropods with one small slender spine close to mesial margin below statocyst. Telson trapeziform, length 1.7 times maximum width; distal half with continuously converging lateral margins. Proximal 45% of lateral margins without spines, distally remaining portion with about 13–14 normal-shaped spines increasing in length caudally. Transversely truncate terminal margin with very shallow median indentation lined with pair of setae flanked by pair of minute spines; indentation in turn flanked by two pairs of large latero-terminal spines, submedian spines largest, measuring about ¼ of telson length. Telson with total of ≈33 spines and two setae.

Etymology

The species name is a Latinized adjective with feminine ending, referring to the subchelate second thoracic endopod.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 18.5 mm, on slides); Bellingshausen Sea, NW of Anvers Island, ANDEEP-III station 153-7; 63°19.31′ S, 64°36.94′ W to 63°19.15′ S, 64°37.18′ W; depth 2092–2118 m; 29 Mar. 2005; EBS supranet; ZMH 64679.

Paratypes

SOUTHERN OCEAN • 1 ♂ imm. (most thoracopods and pleopods broken, BL ≈9.7 mm, on slides); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 151-7; 61°45.52′ S, 47°07.68′ W to 61°45.42′ S, 47°08.04′ W; depth 1182–1185 m; 21 Mar. 2005; EBS supranet; ZMH 64681 • 1 juv. (damaged, BL = 5.3 mm); South Sandwich Trench, E of Montagu Island, ANDEEP-II station 140-8; 58°15.98′ S, 24°53.72′ W to 58°16.13′ S, 24°53.87′ W; depth 2947–2970 m; 22 Mar. 2002; EBS supranet; ZMH 64680.

Type locality and distribution

The type locality is ANDEEP III station 153-7: Bellingshausen Sea, NW of Anvers Island, 63°19.31′ S, 64°36.94′ W to 63°19.15′ S, 64°37.18′ W, depth 2092–2118 m. Also recorded from South Sandwich Trench, E of Montagu Island and from the Powell Basin. Total ranges 58–63° S, 25–65° W, depth 1182–2970 m.

Description

Holotype (♀)

All features as in specific diagnosis. Adult female with empty marsupium, BL = 18.5 mm, completely dissected. Carapace measures 28% of BL, cephalothorax 34%, pleon without telson 54% and telson 12%. Clypeus with mid-ventral carina rostrally passing into distally rounded median projection reaching to median segment of antennular trunk.

Carapace (Figs 25E, 28A). With short, broadly rounded, uptilted anterior margin, rostrum indistinct (though distinct in juvenile). Uptilted portion of carapace as long as 9% of terminal segment of antennular trunk. Disto-lateral edges well-rounded; concave posterior margin leaving ultimate 1.5

thoracic segments dorsally exposed. Eight pores flanking a larger donut-like structure (Fig. 25E) in mid-sub-caudal position (arrows in Fig. 28A) on carapace.

Eyes (Figs 25B, 26). Both eyes strictly symmetrical. Bilobate structure evident in loco (Fig. 26A), but lobate shape accidentally disappeared upon expansion on slides (Figs 26B, 27C). Lateral eye lobe with self-contained ribbon formed by parallel-oriented, laterally directed ommatidia (Fig. 26B) without rhabdom-like striation. Mesial eye lobe with few, throughout vestigial, mostly inconspicuous ommatidia (Fig. 26B) not reaching surface, no rhabdom detected. Antero-posterior extension of mesial eye lobe about equal to its maximum width and 0.8 times as long as terminal segment of antennular trunk; lobe dorsoventrally flattened by a factor of about 1.4 (Fig. 25B). Distally rounded subtriangular papilla positioned dorsally close to mesial margin of mesial eye lobe (Fig. 26B). Papilla measuring ⅕ of antero-posterior extension of mesial eye lobe. Papilla with terminal pore, no scales. Organ of Bellonci spherical, near papilla. Tooth-like scales, mostly 15–25 μm long, along anterior margin of mesial eye lobe (as in Fig. 27C) and along low ridge (emphasized by long arrow in Fig. 26B–C) associated with ocular papilla.

Antennula (Fig. 28B–C). Trunk measures 9% of BL. It extends ⅔ of its length beyond eyes. Transverse articulation between three trunk segments. Measured along dorsal midline, basal segment with 0.4 of trunk length, median 0.2 and terminal 0.4. Length of basal segment 0.7 width in dorsal view. This segment mid-dorsally with antennular bursa, no ventral carina. Segment produced into short lobe at disto-lateral edge, lobe distally with four setae. Basal segment with two dorsal setose apophyses in paramedian position near rostral margin; median segment with one setose, approximately mid-dorsal apophysis also near rostral margin. Length of terminal segment 0.8 times width in dorsal view, 0.9 in ventral view; difference due to lengthwise weakly oblique segmental border between median and terminal segments. Terminal segment with disto-median lobe armed with four barbed setae and large subterminal tooth mesially accompanied by two minute teeth and laterally by one intermediate-sized tooth (Fig. 28C). Terminal segment without female lobe, no callynophore. Width of lateral antennular flagellum measured near basis 1.3–1.5 times width of mesial flagellum. Basal 6–7 segments of mesial flagellum (Fig. 28B) separated by transverse sutures, followed by consecutive clusters of oblique sutures with 1–3 transverse sutures in between; series of clusters demonstrable up to segment 20, more distal segments broken.

Antenna (Fig. 28D). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Segments 1–4 contribute 22%, 9%, 33% and 36% to total length of peduncle in dorsal view, vs 30%, 20%, 25% and 25% in ventral view, respectively. Difference between these views mainly reflects strongly oblique border between second segment and dorsally overlapping third segment. Two spine-like structures mesially accompanying large distal tooth of antennal scale show basal articulations (Fig. 25G), confirming that these structures are spines and not teeth.

Mandibles (Fig. 28E–G). Palp accidentally turned to show its rostral face, whereas the masticatory part shows its caudal face in Fig. 28E. Basal segment contributes 8–10%, median segment 61–62% and apical segment 29–30% to total palp length. Median segment 2.8–2.9 times as long as wide, mesial margin slightly sigmoid; lateral margin convex, bent mesially. Length of apical segment 3.1–3.4 times maximum width. Palp not hispid, its basal segment without setae, median segment strongly setose along mesial margin and less strongly along mesially bent lateral fold, only few setae on lateral margin, apical segment densely setose along mesial margin and with only few setae along lateral margin. Masticatory part of right mandible (Fig. 28F): pars incisiva with three large plus one medium-sized teeth; digitus mobilis with two large and eight small teeth, only largest tooth with two small humps on its concave face. Pars centralis with nine acute spines armed with a few stiff bristles, three distal spines basally thick and decreasing in length proximally, dorsally (= orally) followed by six more slender spines in dense series increasing in length proximally. Processus molaris with strong grinding lamellae distally

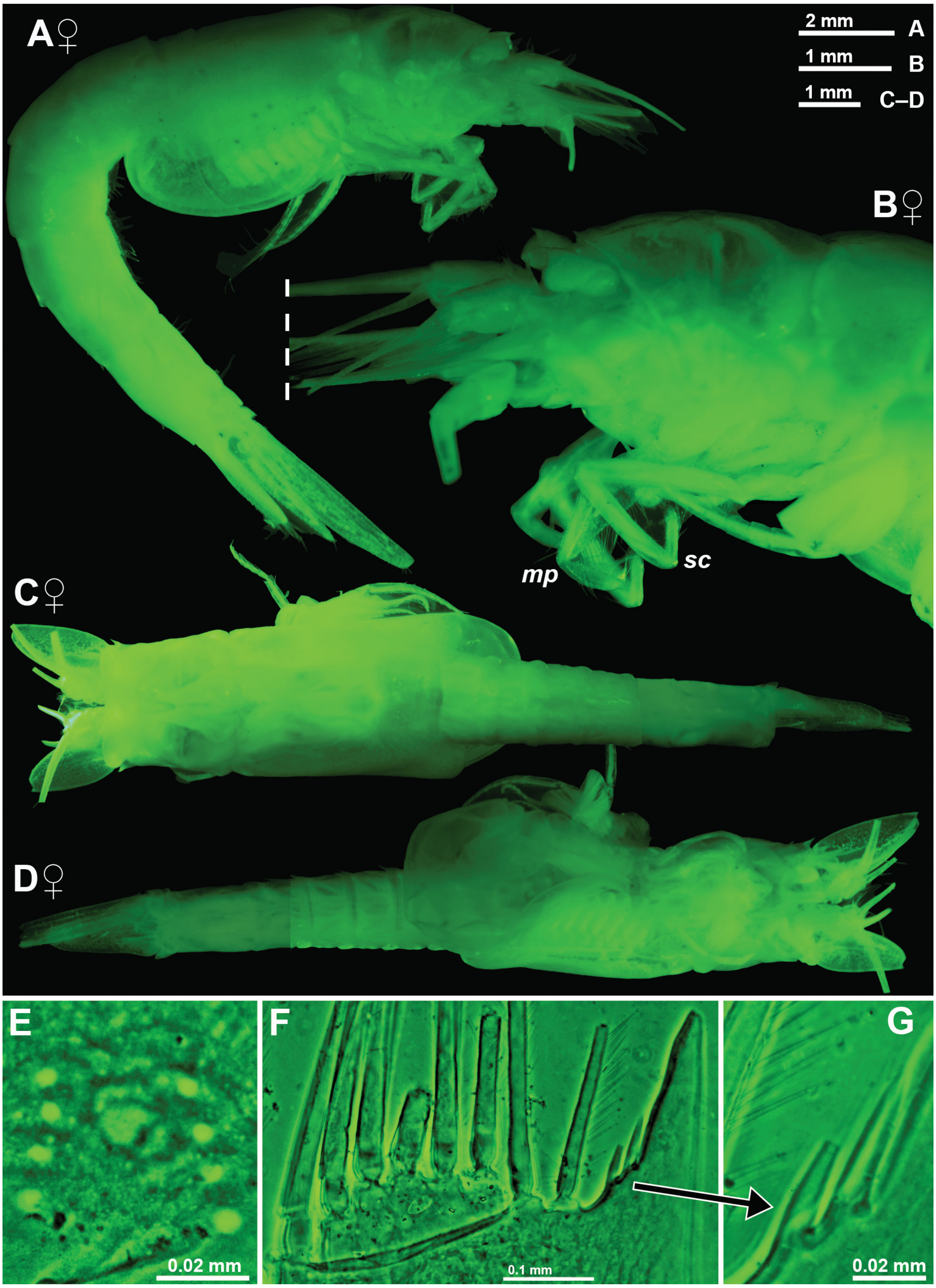

Fig. 25. *Desmocornea subchelata* gen. et sp. nov., holotype, adult female with BL of 18.5 mm (ZMH 64679). **A**. Habitus, right lateral aspect. **B**. Anterior half of cephalothorax, left lateral aspect. **C–D**. Dorsal (C) and ventral (D) aspects of body. **E**. Pore group near caudal margin of carapace, dorsal view. **F**. Distal edge of antennal scale, dorsal view. **G**. Detail of F, showing accessory spines. Abbreviations: *mp* = mandibular palp; *sc* = subchelate second thoracic endopod. A–D. Objects artificially separated from background.

ending in teeth, proximally with dense series of bristles. Masticatory part of left mandible (Fig. 28G): pars incisiva with three large teeth; left digitus mobilis more than twice size of right digitus, with five large and several small teeth. Pars centralis with ten slender spines armed with stiff bristles, spine length decreasing proximally; processus molaris with strong grinding lamellae not ending in teeth and with dense cover of stiff bristles on oral margin.

Gut (Figs 29B–E, 30F). Foregut similar to that of *Amblyops arianii* sp. nov. Both species particularly showing an unusually great diversity of (in detail differing) spines on anterior part of lateralia, in *D. subchelata* gen. et sp. nov. with various transitions from apically coronate (Fig. 29B1) to apically microserrated (cactus-like) spines (Fig. 29B2–B3). These spines smooth along their basal to subapical portions. Central part of lateralia with slender, apically pronged, short spines (Fig. 29C), sparsely coated with minute teeth along about distal half of shaft. Posterior part of lateralia on each side with dense cluster of seven spines with dentation (unilateral serration) increasing with spine size (Fig. 29D). Dorsolateral infoldings on each side with cluster of four spines increasing in length laterally; these spines unilaterally dentate, three lateral spines with only few denticles; thicker, most mesial spine serrated by many more

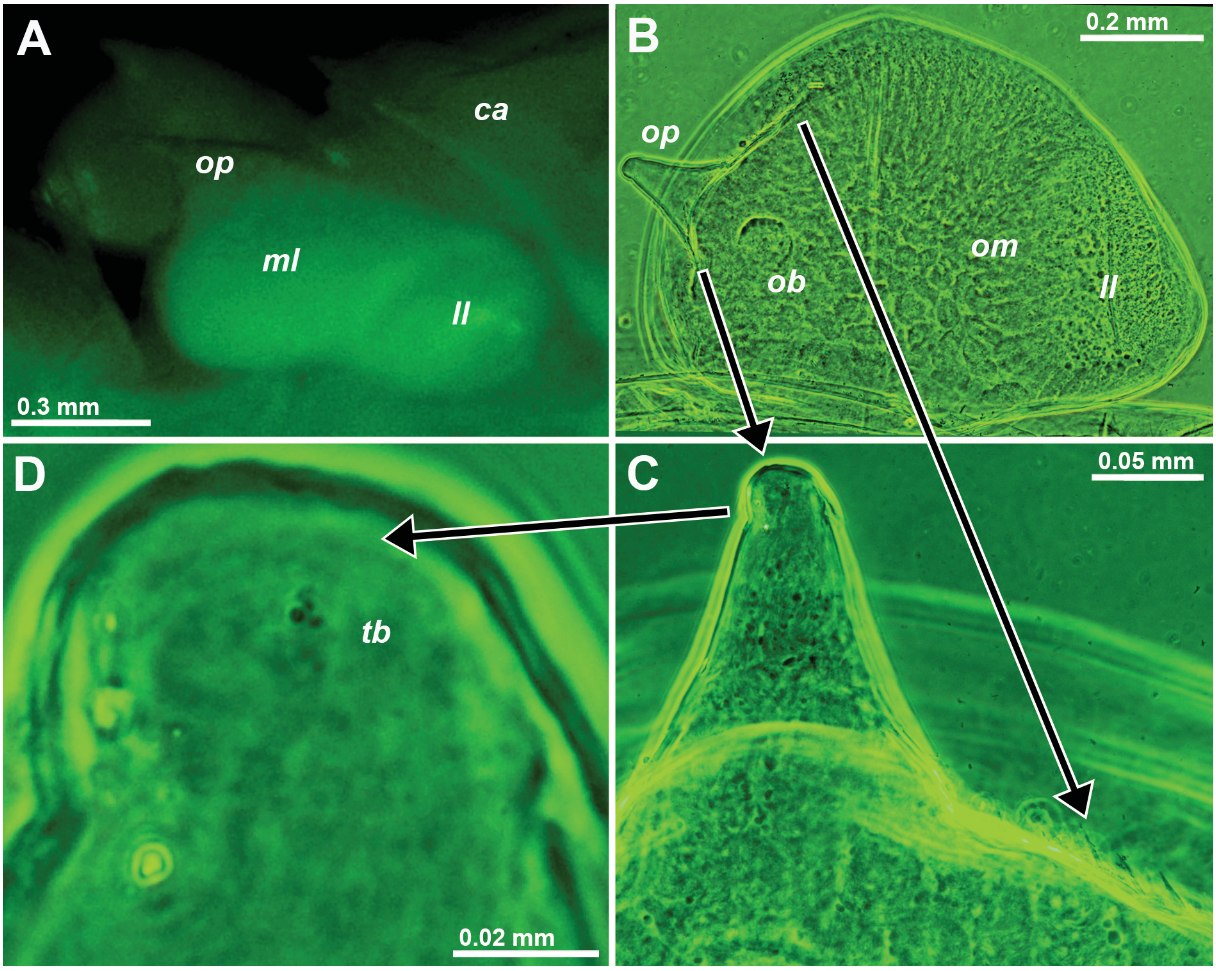

Fig. 26. Eyes in adult *Desmocornea subchelata* gen. et sp. nov., holotype, adult female with BL of 18.5 mm (ZMH 64679). **A**. Left eye in loco, lateral view. **B**. Right eye expanded on slide, dorsal view. **C**. Ocular papilla of right eye; arrows from panel (B) point to tip of papilla and to scales along ridge running close to papilla. **D**. Tip of ocular papilla of left eye. Abbreviations: *ca* = carapace; *ll* = lateral eye lobe; *ml* = mesial eye lobe; *ob* = organ of Bellonci; *om* = ommatidia; *op* = ocular papilla; *tb* = toroidal bulge.

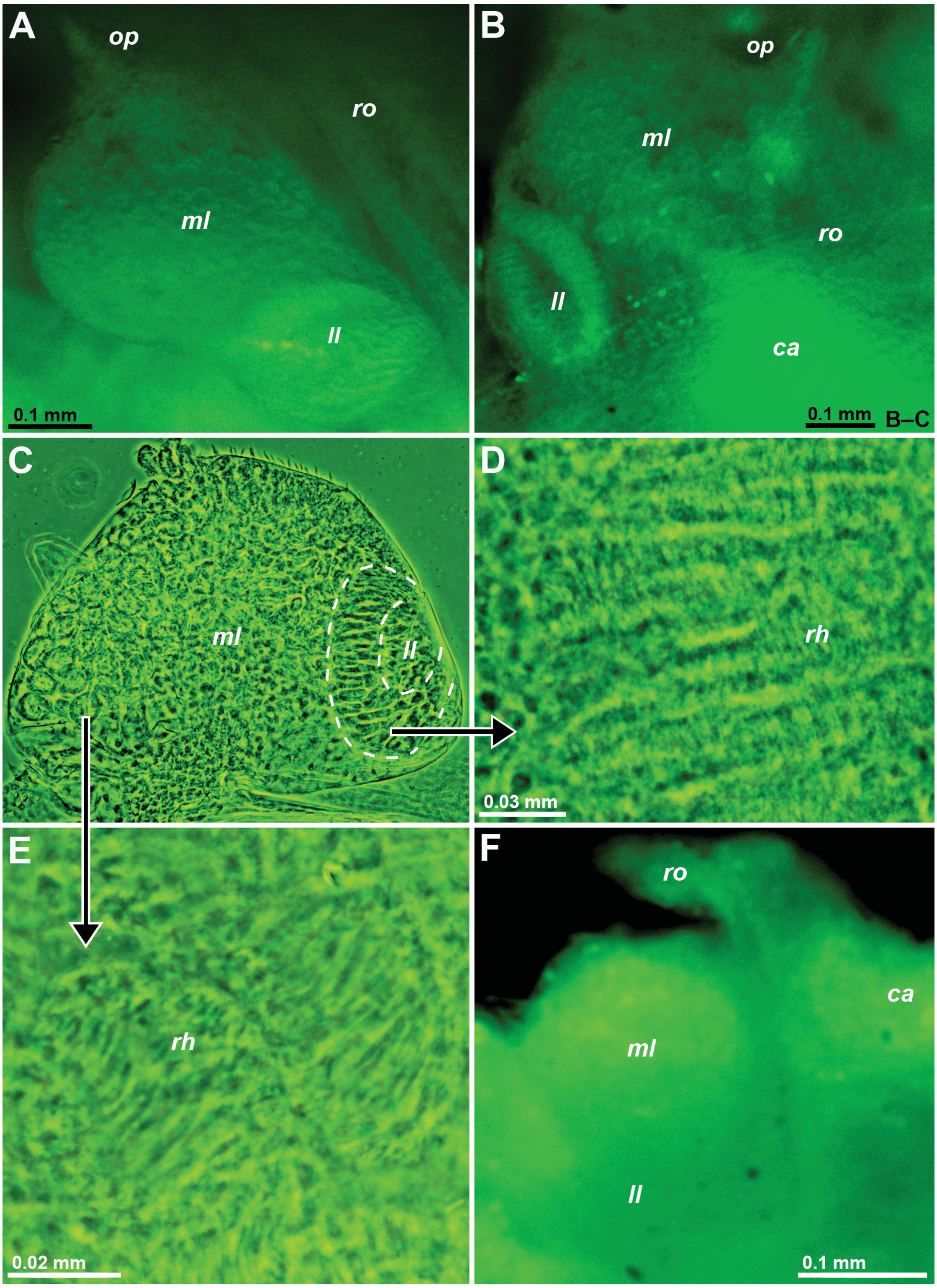

Fig. 27. Eyes in non-adult *Desmocornea subchelata* gen. et sp. nov., paratypes, immature male with BL of 9.7 mm (A–E: ZMH 64681) and juvenile 5.3 mm (F: ZMH 64680). **A–B**. Left eye of immature in loco, lateral (A) and dorsal (B) view, prior to dissection. **C**. Same left eye as above, on slide, ventral view, dashed line enhances contour of self-contained ribbon formed by ommatidia. **D–E**. Details of panel C, with focus on rhabdom. **F**. Left eye and rostrum of juvenile, lateral view. Abbreviations: *ca* = carapace; *ll* = lateral eye lobe; *ml* = mesial eye lobe; *op* = ocular papilla; *rh* = rhabdom; *ro* = rostrum.

denticles (Fig. 29E). Setae of superomedianum as in *A. arianii* sp. nov. Storage volume of foregut almost empty in the two dissected specimens. Sparse presence of small unidentifiable organic particles together with two small fragments (0.2–0.3 mm) of euphausiacean larvae. Anal lobe distinct, weakly cuticularized (dashed line in Fig. 30F).

Maxillula (Fig. 28H). Distal segment with eleven strong spines on transverse terminal margin, these spines unilaterally serrated mostly along their subapical portions. This segment subterminally with three setae bearing long stiff barbs; no nearby pores detected. Endite of maxillula terminally with three large, distally spiny setae accompanied by several less strong barbed setae. Endite more proximally with five smooth setae. Most proximal seta backward curved. Proximal segment with low ridge bilaterally furnished with long, dense series of fine hairs (again denser than visualized in Fig. 28H), in contrast to most mysids, which exhibit only unilateral series.

Maxilla (Fig. 28I). Sympod with three mesial lobes, densely setose along distal margin. Field of small triangular scales on sympod sub-proximally from median lobe. Mesial circumference of sympod with large fan of setae; thickest seta distally with stiff barbs; this seta, when outstretched, only marginally extending beyond fan of setae (unlike in most mysids). Exopod of maxilla closely approaches but does not reach terminal margin of basal palp segment. Exopod with dense series of plumose setae all along lateral margin; largest seta at tip (dashed line in Fig. 28I). Mesial margin without setae. Exopod bare not considering setae. Maxillary palp with distal segment contributing $^4/_7$ of palp length. This segment three times as long as maximum width, densely setose along distal and most of mesial margin, only few setae on lateral margin, no spines. Mesial margin of proximal segment with three normal-shaped barbed setae (on rostral face, therefore visualized by dashed lines in Fig. 28I).

Thorax (Fig. 29G–J). Sternite 1 with distally rounded median lobe as in most mysids. One or two large, basally thick barbed seta closely accompanied by 0–4 smaller such setae on intersegmental joint between sternites 2 (Fig. 29G), 3 and 5–8, and respective sympods, no such setae on sternite 1 (respective parts of sympod and sternite 4 damaged). Exopods 1–2, 5–6 and 8 available, remaining exopods broken. Available basal plates with smooth cuticle, length 1.5–1.7 times maximum width (Fig. 29G), plates with minute tooth-like distal projection on disto-lateral edge. Epipod 1 leaf-like, about as long as combined ischium and merus of endopod 1; no seta (Fig. 29G). Only endopods 1 and 2 available, remaining endopods broken. Available endopods with smooth cuticle, not considering setae; no pores detected. Endopods 1–2 with six segments (Fig. 29G, I) counting from basis to dactylus. Coxa of endopod 1 (Fig. 29G) with small mesial lobe apically bearing one small barbed seta; basis with large, setose endite, remaining segments without endite. Dactylus 1 normal, with basally wide, smooth, weakly curved, acute nail (Fig. 29G–H). Dactylus 2 elongate, reflexed, bearing basally wide, smooth, acute claw facing propodus (Figs 25B, 29I–J).

Marsupium (Figs 25A, 29K). Empty in holotype. Length increases by a factor of three from oostegite 1 to oostegite 3. Basal to median portions of dorsal margin without setae in oostegites 1–2, and from basal to subapical portions in oostegite 3. All oostegites with smooth cuticle, not considering setae, ventral and anterior margins plus part of posterior margin with dense series of barbed setae. Posterior part of oostegites 1–3 on inner face with comparatively long setae microserrated on their distal half. No setae on outer face of marsupium, except for 0–1 barbed seta near rostral edge of oostegite 2 (Fig. 29K).

Pleon (Figs 25A, C–D, 30A–D). Length of pleomeres 1–5 is 0.6, 0.4, 0.5, 0.4 and 0.5 times length of pleomere 6, respectively. Pleomere 6 about as long as combined pleomeres 4–5 (Fig. 25D). Female pleopods increasing in length caudally. Scutellum paracaudale subtriangular with convex margins and blunt apex.

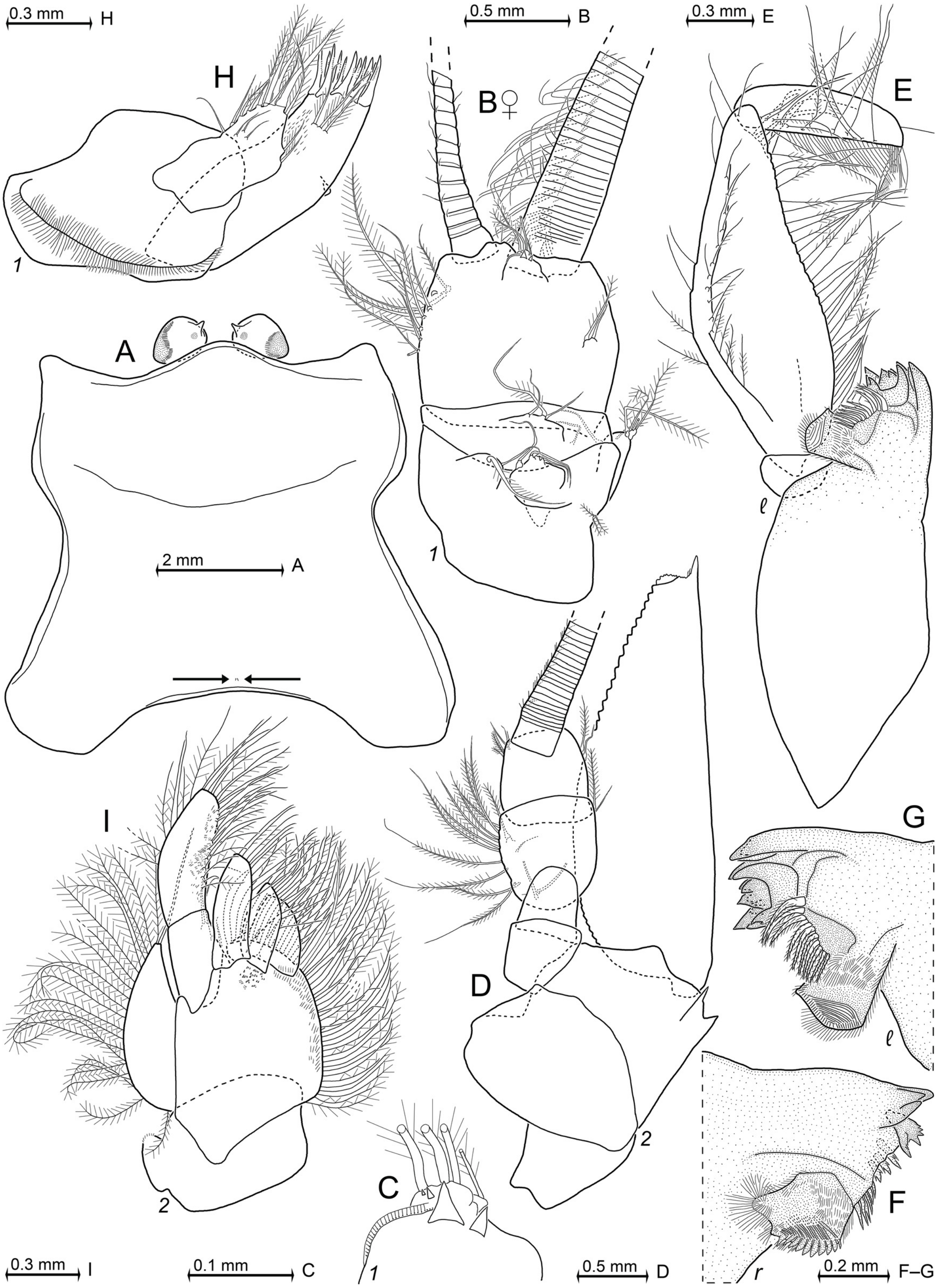

Fig. 28. *Desmocornea subchelata* gen. et sp. nov., holotype, adult female with BL of 18.5 mm (ZMH 64679). **A**. Carapace and eyes expanded on slide, dorsal view. **B**. Right antennula, dorsal view. **C**. Detail of B, showing disto-median lobe of antennular trunk, dorsal view. **D**. Antenna, its sympod with end sac of antennal gland, ventral view; setae of antennal scale omitted. **E**. Left mandible, caudal view; palpus accidentally turned to show rostral face. **F–G**. Masticatory part of right (F) and left (G) mandibles, caudal view. **H**. Maxillula, caudal view. **I**. Maxilla, caudal view.

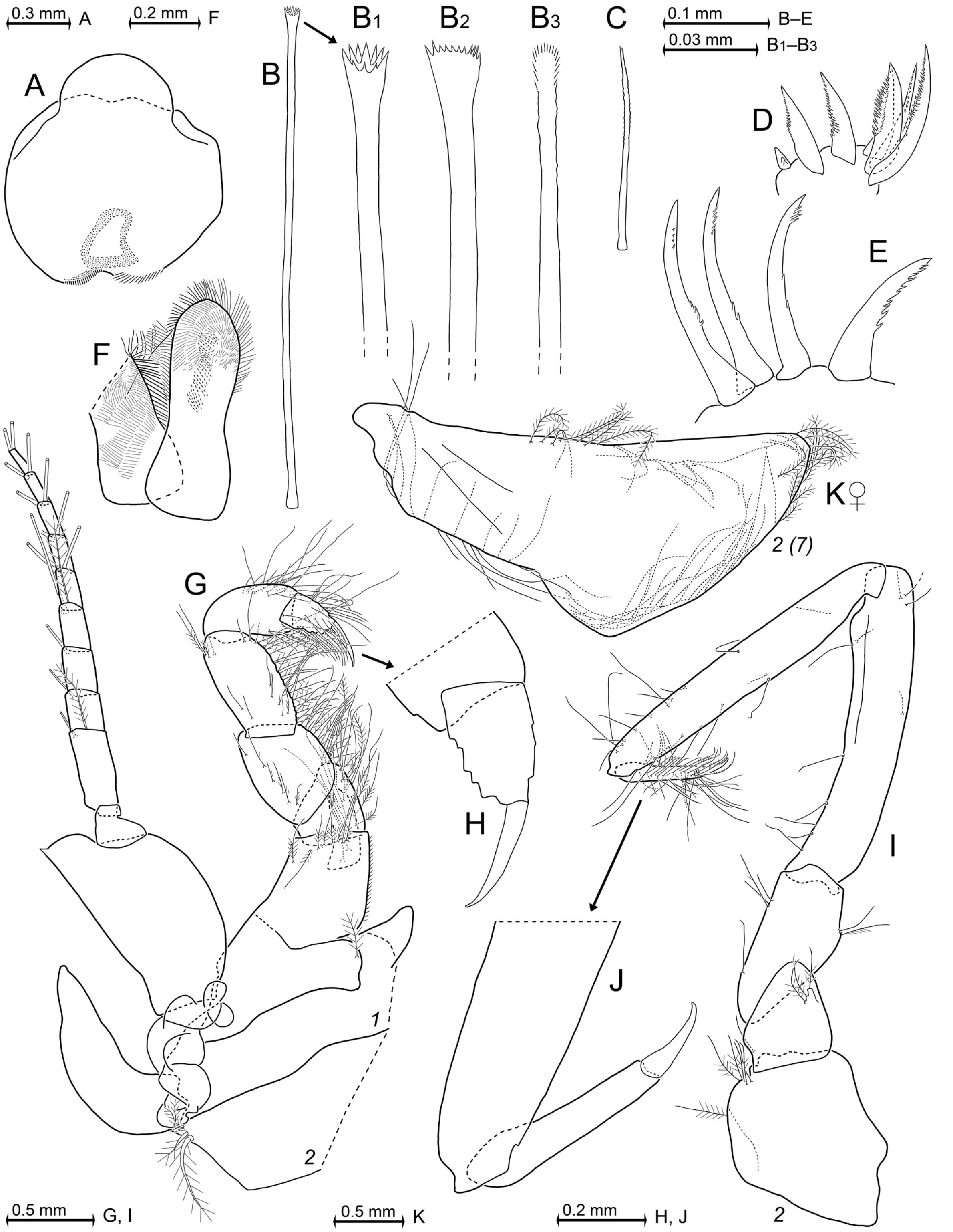

Fig. 29. *Desmocornea subchelata* gen. et sp. nov., holotype, adult female with BL of 18.5 mm (ZMH 64679). **A**. Labrum, ventral = aboral view. **B–E**. Modified spines of foregut, namely from anterior (B, variants labeled B_1–B_3), median (C) and posterior (D) parts of lateralia and from dorsolateral infolding (E). **F**. Labium, obliquely caudal view. **G**. Thoracopod 1 with epipod and part of sternites 1–2, caudal view. **H**. Detail of G, showing dactylus with nail, setae omitted. **I**. Thoracic endopod 2, rostral view. **J**. Detail of I, showing dactylus with nail, setae omitted. **K**. Oostegite 2, outer face.

Tail fan (Figs 25A, C–D, 30E–H). Uropods with smooth cuticle, not considering setae and single spine. Exopod extends 0.3–0.4 times its length beyond endopod and half its length beyond more rostrally inserting telson. Exopod measures 1.4 times endopod length and 1.7 times that of telson; endopod 1.2 telson length. Exopod with almost straight lateral margin and convex mesial margin. Margins of endopod converge in V-shaped manner up to blunt apex. Telson subbasally with a pair of transverse pore fields flanking midline (Fig. 30F); fields with 22 and 23 pores (Fig. 30G), respectively, with diameter < 2 µm.

Paratypes

Juvenile paratype with BL 5.3 mm, not dissected, with distally rounded rostral plate extending along midline to ⅔ of antero-posterior extension of eyes (Fig. 27F), covering part of mesial portions of eyes though leaving lateral portions dorsally exposed. Rostrum shorter in immature specimen, indistinct in adult holotype. Damaged immature male with BL ≈ 9.7 mm, completely dissected (Fig. 27A–E).

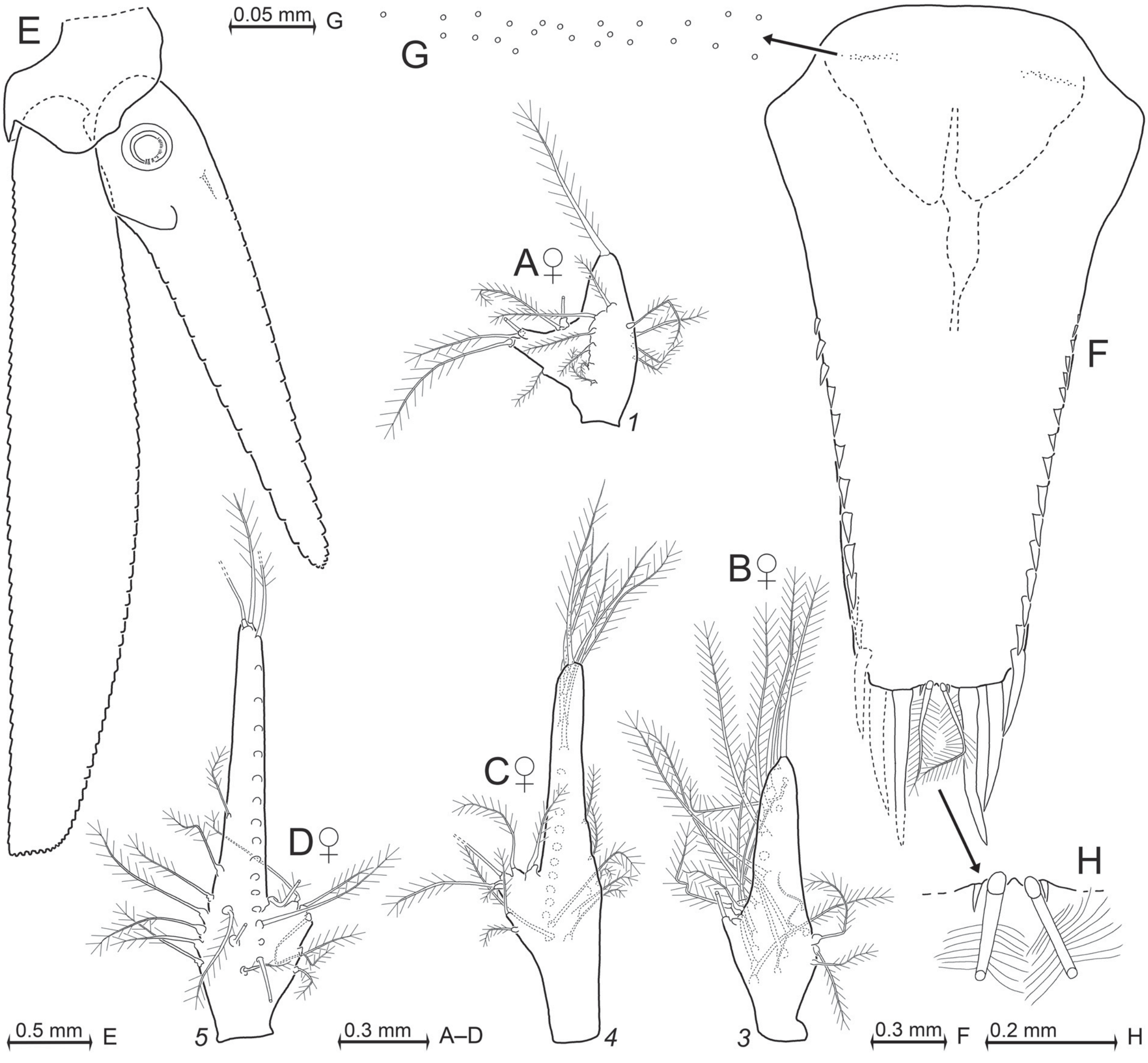

Fig. 30. Pleopods and tail fan in *Desmocornea subchelata* gen. et sp. nov., holotype, adult female with BL of 18.5 mm (ZMH 64679). **A**. Pleopod 1, lateral = rostral. **B**. Pleopod 3, mesial = caudal. **C**. Pleopod 4, mesial view, many setae broken. **D**. Pleopod 5, lateral view, many setae broken. **E**. Uropods, dorsal view, setae omitted. **F**. Telson, dorsal view. **G**. Detail of F, showing left subbasal pore field. **H**. Detail of F, showing part of mid-terminal armature.

Carapace with mid-sub-caudal pore group comprising nine pores. Clypeus with acute, triangular, mid-anterior extension reaching to half-length of basal segment of antennular trunk. Shape of clypeus resembles a heart in upside-down orientation.

Juvenile with essentially well-developed, probably functional eyes, though no pigment detected. Eyestalk almost all around covered by cornea, except for ocular papilla and its close surroundings and insertion of eye on frons. Ommatidia reaching surface, giving mesial eye lobe a moruloid shape (Fig. 27F). Ocular papilla measuring ⅖ of antero-posterior extension of mesial eye lobe. Left and right eyes of immature male symmetrical, showing near-complete as well as clearly incomplete ommatidia (Fig. 27C). Distal sixth of mesial eye lobe with only few incomplete ommatidia. Remaining portion with most ommatidia positioned centripetally reaching surface (Fig. 27C); major part of these ommatidia proximally with rhabdom-like striation (Fig. 27E). Lateral eye lobe with self-contained ribbon (Fig. 27B) formed by oblong ommatidia, most oriented parallel, directed laterally and containing banded rhabdom (Fig. 27D). Ocular papilla measuring ¼ of antero-posterior extension of mesial eye lobe. Papilla positioned dorsally at about one-sixth lobe width from mesial margin of mesial eye lobe. Organ of Bellonci ellipsoidal. Without inspection of non-adults, one could erroneously interpret mesial eye lobe as an eyestalk laterally bearing a rudimentary cornea, and thus entire eye as non-lobate.

Genus ***Amblyopsoides*** O.S. Tattersall, 1955

Amblyopsoides O.S. Tattersall, 1955: 108 (description of type species).

Amblyops – Birstein & Tchindonova 1970: 284 (claimed as senior synonym of *Amblyopsoides*).
Amblyopsoides – Birstein & Tchindonova 1970: 284 (in synonymy, not acknowledged). — Mauchline 1980: 27 (in key to genera). — Murano 1999: 1118 (in catalog). — Wittmann *et al.* 2014: 336 (taxonomy). — Hernández-Payán & Hendrickx 2020: table 1 (species numbers, diagnostic characters of species).

Type species

Amblyopsoides obtusa O.S. Tattersall, 1955, by original designation according to ICZN (1999).

Diagnosis

Based on adults of both sexes. Carapace normal. Eye rudiments immotile, without stalks, closely set though not fused, not connected by membranous integument, lateral margins not produced in a non-sensory finger-like process; dorsal face with ocular papilla, eyes without any or with reduced ommatidia. Antennal peduncle with three segments lined in same plane. Antennal scale extends beyond antennular trunk. Scale with small apical segment in most species; mesial margin setose, lateral margin bare up to a large disto-lateral tooth at > ¼ of scale length from apex. Thoracomeres and pleomeres normal. Thoracic endopods 1–8 not prehensile. Endopods 3–8, as far as known, with unsegmented carpus separated from 1–2-segmented propodus by an oblique articulation. Female, as far as known, with three pairs of well-developed oostegites. Penes well developed, bearing some setae. Male pleopods, as far as known, biramous, setose, no spines; no modified setae; exopods multi-segmented; endopod 1 unsegmented, endopods 2–5 multi-segmented. Female pleopods reduced to uniramous setose plates. Well-developed pseudobranchial lobe in both sexes. Both rami of uropods unsegmented, setose all around; endopod with 0–1 spine on mesial margin below statocyst. Telson trapezoid, without or with mid-terminal indentation, lateral margins not serrated, no lateral constriction. Proximal third to half of lateral margins bare, remaining distal portion with spines. Terminal margin with spines and mostly a pair of paramedian setae (only setae bases preserved in Fig. 36F).

New combination

Amblyopsoides laticauda (Birstein & Tchindonova, 1958) comb. nov. is here recombined from *Dactylamblyops laticauda* Birstein & Tchindonova, 1958, based on the structure of the antennal scale (as in Fig. 33D), telson (as in Fig. 38E) and eyes. Attempts to borrow the types have failed. The design of the eyes in Birstein & Tchindonova (1958: fig. 28) may allege a differentiation in eyestalk and cornea, but the text clearly indicates that "The visual elements are concentrated in the basal part of the eye, particularly densely close to the basis, and disappear gradually towards the end" [translation]. Accordingly, there is no clear differentiation of an eyestalk. In addition, the eyes are dorsally flattened. In conclusion, eye structure together with the long setose lobe of the antennal scale (and less importantly also the telson structure) fit into *Amblyopsoides* and disprove *Dactylamblyops*.

Species included

- *A. crozetii* (G.O. Sars, 1883) from the Southern Ocean: Kerguelen and Crozet Islands, off East Antarctica, 45–68° S, 48–70° E and 25–60° W, depth 800–2960 m (G.O. Sars 1884, 1885; Petryashov 2006; San Vicente 2010; see also 'Discussion': 133); records from the Arctic doubted by Brattegard & Meland (1997) and Hernández-Payán & Hendrickx (2020)
- *A. fenestragothica* sp. nov. from the Southern Ocean: Drake Passage and NW Weddell Sea, 61–65° S, 53–54° W, depth 2086–2894 m
- *A. halleyi* Ledoyer, 1990 from the Southern Ocean: Bellingshausen Sea, Weddell Sea and off Kerguelen Islands, 47–74° S, 65° W–66° E, depth 585–1223 m (Ledoyer 1990, 1995; Brandt *et al.* 1998; San Vicente 2010)
- *A. laticauda* (Birstein & Tchindonova, 1958) comb. nov. from the NW Pacific: Kurile-Kamchatka Trench, 49° N, 159° E, depth 4500 m (Birstein & Tchindonova 1958)
- *A. lepidophthalma* sp. nov. from the Southern Ocean: South Sandwich Trench and Drake Passage, 58–59° S, 25–60° W, depth 2281–2375 m
- *A. obtusa* O.S. Tattersall, 1955 from the SW Atlantic: Strait of Magellan, Patagonian shelf SW of Falkland Islands (Malvinas), 51–55° S, 62–69° W, depth 265–534 m (O.S. Tattersall 1955; Brandt *et al.* 1998, 1999)
- *A. ohlinii* (W.M. Tattersall, 1951) from the N Atlantic (40–73° N, 15–70° W) and N Pacific (39–44° N, 143–149° E and 31° N, 117° W), total depth range 1709–2265 m (W.M. Tattersall 1951; Fukuoka 2009; Hernández-Payán & Hendrickx 2020)

Amblyopsoides fenestragothica sp. nov.
urn:lsid:zoobank.org:act:D3EB1FB5-FE5F-4F7A-A756-492E2B9D7BE7
Figs 31–36

Diagnosis

Based on immature specimens of both sexes. All features within limits of generic diagnosis. Rostrum wide-angled, broadly rounded, short, dorsally covering short subrostral lobe and less than half rostral extension of eyes. Eye rudiments separate, dorsoventrally compressed, reduced to roughly trapeziform pads without visual elements. Rudiments mid-rostrally with ocular papilla as long as $\frac{1}{7}$ of antero-posterior extension of eye. Antennal scale extends half its length beyond antennular trunk. Scale with minute apical segment separated by a transverse suture. Lateral margin of scale bare up to a tooth at $\frac{1}{3}$–$\frac{1}{2}$ of length from basis, remaining distal portion densely setose. Mouthparts normal, labrum rostrally rounded. Thoracic exopods 3–8 with 10-segmented flagellum. Endopods 4, 6 and 8 with unsegmented carpus separated from 2-segmented propodus by an oblique articulation (endopods 3, 5 and 7 broken). Immature male pleopods 1–5 biramous, well setose, no spines. Uropods setose all around, no spine. Telson roughly trapeziform, length twice maximum width and $\frac{6}{5}$ times length of ultimate pleomere; terminal margin with ogival disto-median indentation with depth $\frac{4}{5}$ of indentation width and $\frac{1}{20}$ of telson length. Each lateral margin of the indentation with one seta (only setal bases preserved in Fig. 36F) near tip and a small lamina near basis. Indentation flanked by 3–4 pairs of large spines on terminal margin of telson. Telson with distal ⅗ of each lateral margin armed with series of 21–26 spines, distally somewhat discontinuously increasing in size; proximal ⅖ bare; telson with total of 48–59 spines, two laminae and two setae.

Etymology

The species name is an adjective with feminine ending, formed by linking the Classic Latin noun '*fenestra*' ('window') with the late Latin adjective '*gothica*' ('gothic'), related to the most significant and practical feature of determination at species level, namely the mid-terminal indentation of the telson resembling a gothic window (Fig. 36F).

Material examined

Holotype

SOUTHERN OCEAN • 1 ♂ imm. (BL = 16.2 mm, on slides); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS supranet; ZMH 64660.

Paratype

SOUTHERN OCEAN • 1 ♀ imm. (BL = 14.1 mm); NW Weddell Sea, ANDEEP-II station 132-2; 65°17.74′ S, 53°22.82′ W to 65°17.56′ S, 53°22.83′ W; depth 2086–2086 m; 6 Mar. 2002; EBS supranet; ZMH 64661.

Type locality and distribution

The type locality is ANDEEP I station 046-7: Drake Passage, South Shetland area, NE of Elephant Island, 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W, depth 2893.6–2893.2 m. A second record was made in the NW Weddell Sea at ANDEEP II station 132-2. The resulting total range is 61–65° S, 53–54° W, 2086–2894 m.

Description

Holotype (♂)

All features within ranges of specific diagnosis. Immature male with BL 16.2 mm. Rostrum measures 1% of BL, carapace without rostrum 35%, cephalothorax 41%, pleon without telson 43% and telson 15%. Clypeus with short, acute, mid-rostral process (visible only in ventral view: Fig. 31C) about half as long as basal segment of antennal peduncle.

CARAPACE (Figs 31D, 33A). Normal, disto-lateral edges broadly rounded, cervical sulcus strong, no cardial sulcus visible; posterior margin concave, terminal indentation broadly rounded. Median pore group located 5% of carapace length in front of posterior margin of carapace (position indicated by arrows in Fig. 33A). This group constituted by eight pores flanking a larger pore-like structure on top of a small bulge (Fig. 31D). Carapace leaves 1½ thoracomeres mid-dorsally exposed.

EYES (Figs 32C–F, 33A). Eye rudiments large, their antero-posterior extension 0.8 times maximum width and 1.5 times length of terminal segment of antennular trunk. Large portions of dorsal face covered by tiny 'hairs' (Fig. 32F) which become stiff and spiniform near and on transverse terminal margin. Eye papilla ends in a toroid with central pore (Fig. 32E). Organ of Bellonci near ocular papilla.

ANTENNULA (Fig. 33B–C). Trunk measures 11% of BL, extending half its length beyond eyes. Transverse articulations between three trunk segments. Measured along dorsal midline, basal segment 0.4 of trunk length, median 0.2 and terminal 0.4. Length of basal segment 0.6 times width. Basal

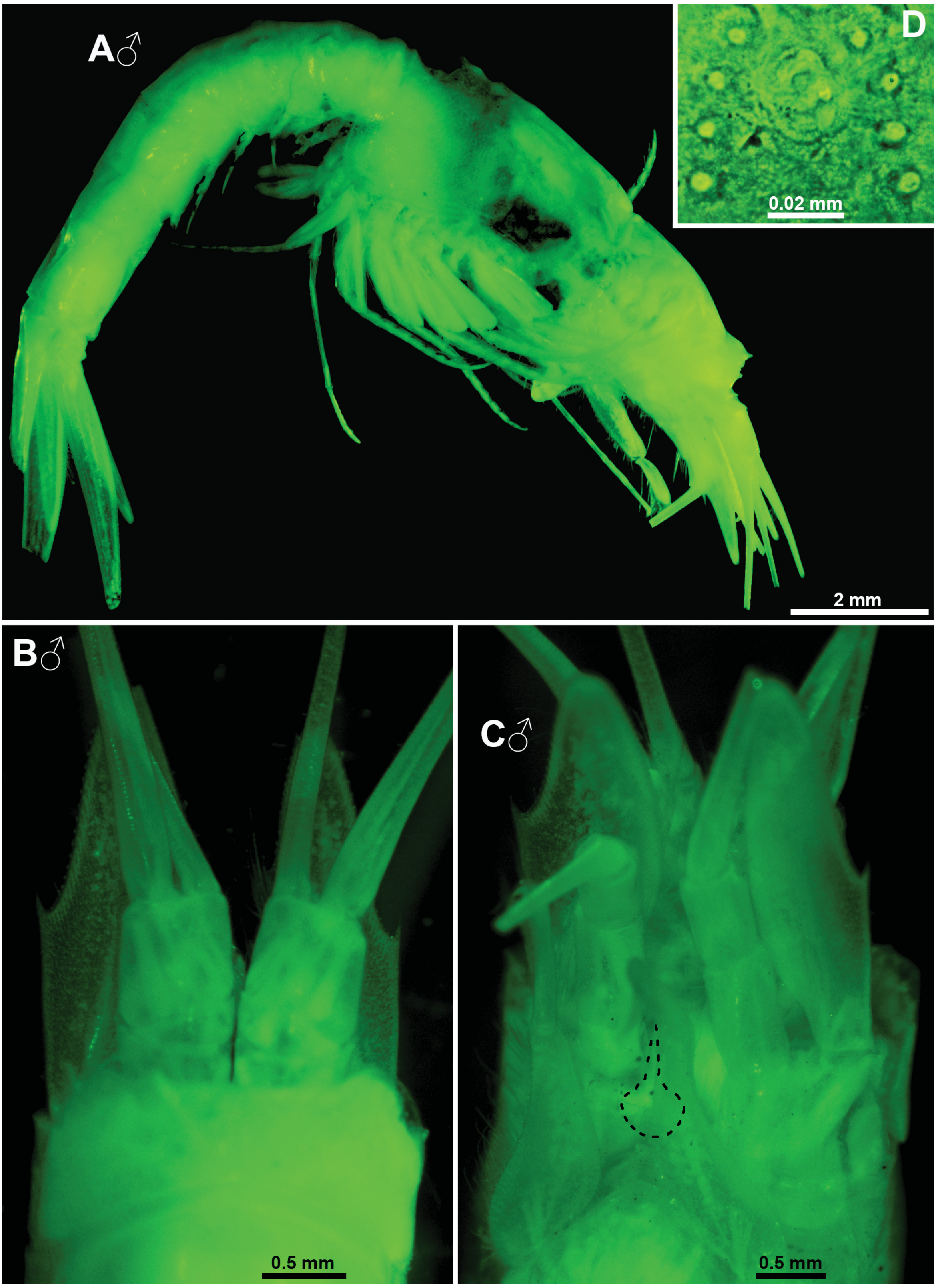

Fig. 31. *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (ZMH 64660). **A**. Holotype in toto, lateral view. **B**. Cephalon, dorsal view. **C**. Cephalon, ventral view, dashed line indicates clypeus (right half covered by left mandibular palp). **D**. Pore group close to posterior margin of carapace. A. Object artificially separated from background.

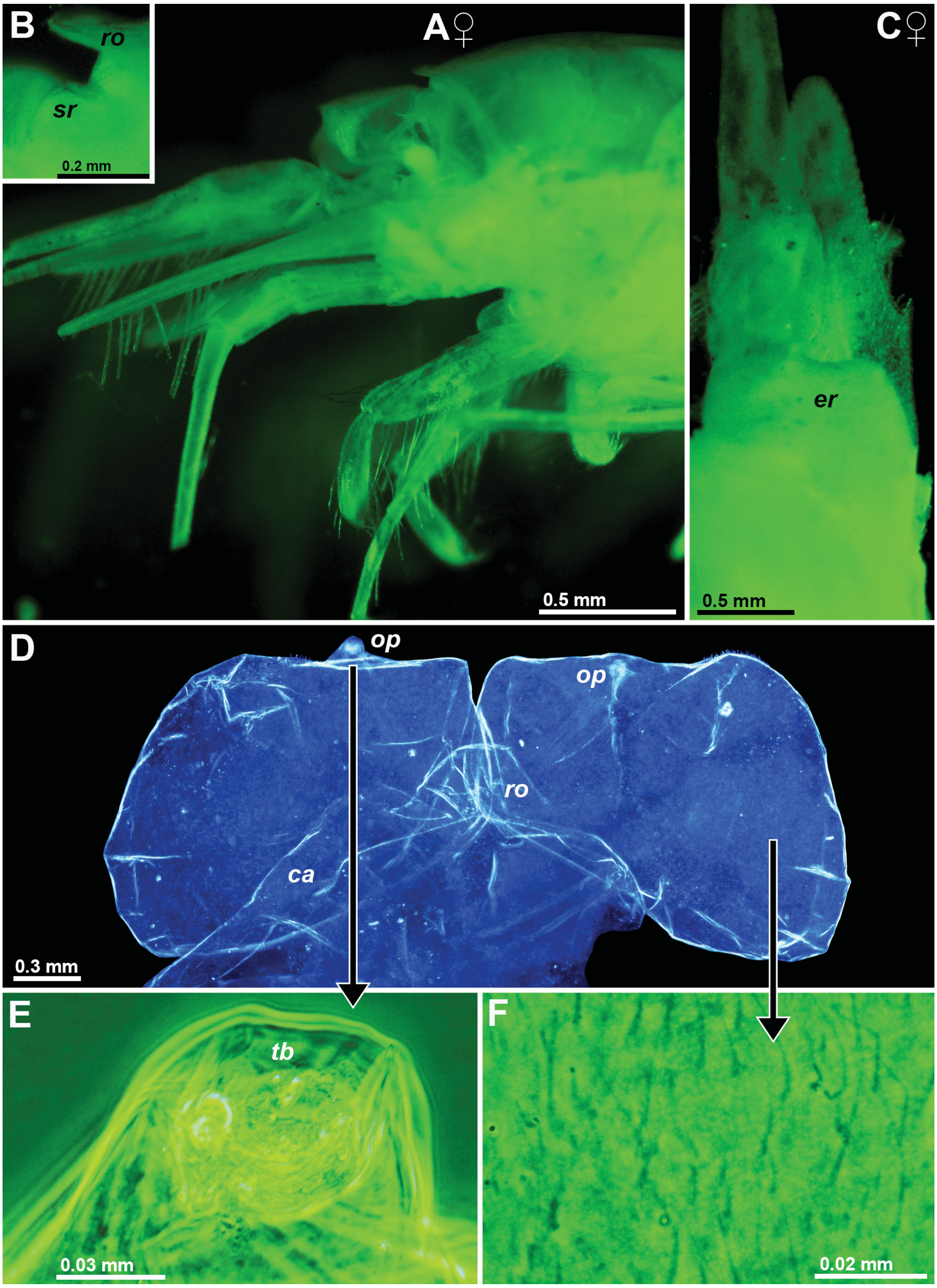

Fig. 32. *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (D–F: ZMH 64660) and paratype, immature female 14.1 mm (A–C: ZMH 64661). **A**. Anterior half of cephalothorax, left eye removed, lateral view. **B**. Detail of A, showing rostral and subrostral processes. **C**. Right eye, antennula and antennal scale, dorsal view. **D**. Eye rudiments expanded on slide, dorsal view. **E**. Detail of D, showing tip of ocular papilla with toroidal bulge. **F**. Detail of D, showing coverage with thin, mostly hair-like scales. Abbreviations: *ca* = carapace; *er* = eye rudiment; *op* = ocular papilla; *ro* = rostrum; *sr* = subrostral process; *tb* = toroidal bulge. D. Object artificially separated from background.

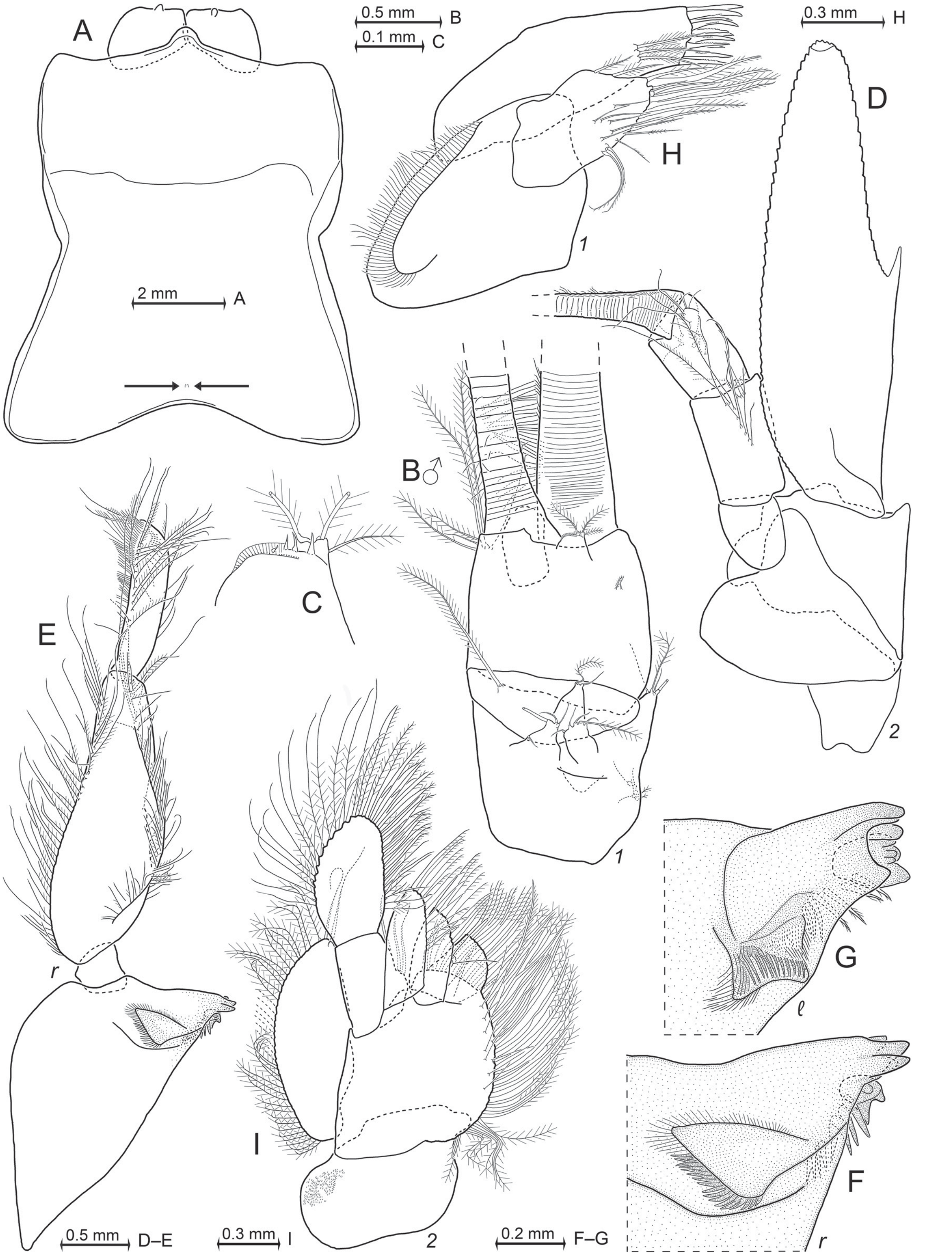

Fig. 33. *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (ZMH 64660). **A**. Carapace with eyes expanded on slide, dorsal view, arrows point to minute pore group (detail in Fig. 31D). **B**. Antennula, dorsal view. **C**. Detail of B, showing disto-median lobe of antennular trunk. **D**. Antenna with antennal gland, ventral view, setae omitted from antennal scale. **E**. Mandible with right palpus, caudal view. **F**. Masticatory part of right mandible, caudal view. **G**. Masticatory part of left mandible, rostral view. **H**. Maxillula, caudal view. **I**. Maxilla, caudal view.

segment produced into a short lobe at disto-lateral edge, lobe distally with 4–5 setae; antennular bursa well developed. Terminal segment 1.2–1.3 times as long as wide, no callynophore. Disto-median lobe armed with four minute teeth increasing in size laterally, lobe disto-laterally with three barbed setae (Fig. 33C). Appendix masculina inserts ventrally near terminal margin of antennular trunk; appendix conical, apically rounded. Flagella large, width of outer flagellum measured near basis 1.1–1.2 times as wide as that of inner flagellum.

Antenna (Figs 31C, 33D). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Sympod angular on slightly produced disto-lateral edge, not forming a tooth-like projection. Antennal scale measures 0.2 BL, 1.6–1.7 times as long as antennular trunk and 1.7–1.8 times as long as antennal peduncle. Scale length 3.5–3.6 times maximum width. Scale well setose along mesial margin and on distal lobe. Peduncle 3-segmented, its basal segment contributes 23%, median segment 43% and terminal segment 34% to total length.

Primary mouthparts (Fig. 33E–G). Labrum and labium normal. Mandibular palp as long as antennal scale. Basal segment contributes 10%, median segment 59% and apical segment 32% to total palp length. Length of median segment 3.1 times maximum width; its mesial margin convex, lateral margin slightly sigmoid. Length of apical segment 4.2 times maximum width. Palp not hispid, its basal segment without setae, median segment densely setose along lateral and mesial margins, apical segment densely setose along lateral margin and less densely along mesial margin. Right mandible (Fig. 33F): pars incisiva with three large and three small teeth; digitus mobilis with two large and several small teeth; pars centralis with series of nine tooth-like spines increasing in size distally, only five proximal spines (below drawing plane in Fig. 33F) armed with stiff bristles on basal half. Left mandible (Fig. 33G): pars incisiva with five large and several small teeth; digitus mobilis with four large teeth; pars centralis with seven slender spines distally increasing in size, all along armed with stiff bristles. Processus molaris of left (Fig. 33G vs 21D) and right (Fig. 33F vs 21E) mandibles as in *Amblyops bipapillatus* sp. nov.

Gut (Fig. 34). Similar to that of *Amblyops bipapillatus* sp. nov. (Fig. 22). As minor differences, apically coronate spines (Fig. 34B) and apically pronged spines (Fig. 34C) of lateralia in *Amblyopsoides fenestragothica* sp. nov. coated with minute teeth along at least distal ⅔ of shaft. Posterior part of lateralia with dense cluster of eleven spines of various size, most unilaterally serrated (Fig. 34D). Dorsolateral infoldings with cluster of five large spines, most unilaterally serrated along distal ⅔ (Fig. 34E). Storage volume filled to about ⅔ with mainly masticated, unidentifiable organic materials (detritus), mineral particles, a few sponge spicules and crustacean remains. Midgut full with organic material and a few mineral particles. Anal lobe caudally strongly cuticularized (lobe located ventrally, nonetheless visible in dorsal view through artificially bleached telson in Fig. 36A, E).

Maxillula (Fig. 33H). Distal segment with 12–13 strong spines on transverse terminal margin, unilaterally serrated along median portions, seven dorsal (= oral) spines serrated along aboral margin, 5–6 ventral (= aboral) spines along oral margin. This segment subterminally with three setae bearing long stiff barbs; no nearby pores detected. Endite of maxillula terminally with four large, distally spiny setae, on both sides accompanied by numerous, less strong setae. As a striking feature, two most proximal setae closely set and backward curved.

Maxilla (Fig. 33I). Basal segment of sympod laterally with field of triangular scales similar to that (Fig. 36B) of telson but more variable in length and not organized in clusters. Distal segment of sympod with three mesial lobes, densely setose along disto-mesial margins. Convex mesial portion of sympod bearing a large, dense fan of setae. One large seta extends shortly beyond fan; on caudal face, at margin near distally neighboring lobe; with a unilateral dense series of stiff barbs along distal half. Exopod of maxilla extends shortly beyond terminal margin of basal palp segment. Exopod with dense series of plumose setae all along lateral margin. Tip of exopod with two large setae (dashed lines in Fig. 33I), mesial margin bare. Maxillary palp with distal segment contributing 57% of palp length. This segment 1.8 times as long as maximum width; segment densely setose all along distal ¾, no spines. Mesial margin of proximal segment with three basally thick barbed setae (visualized as dashed lines in Fig. 33I).

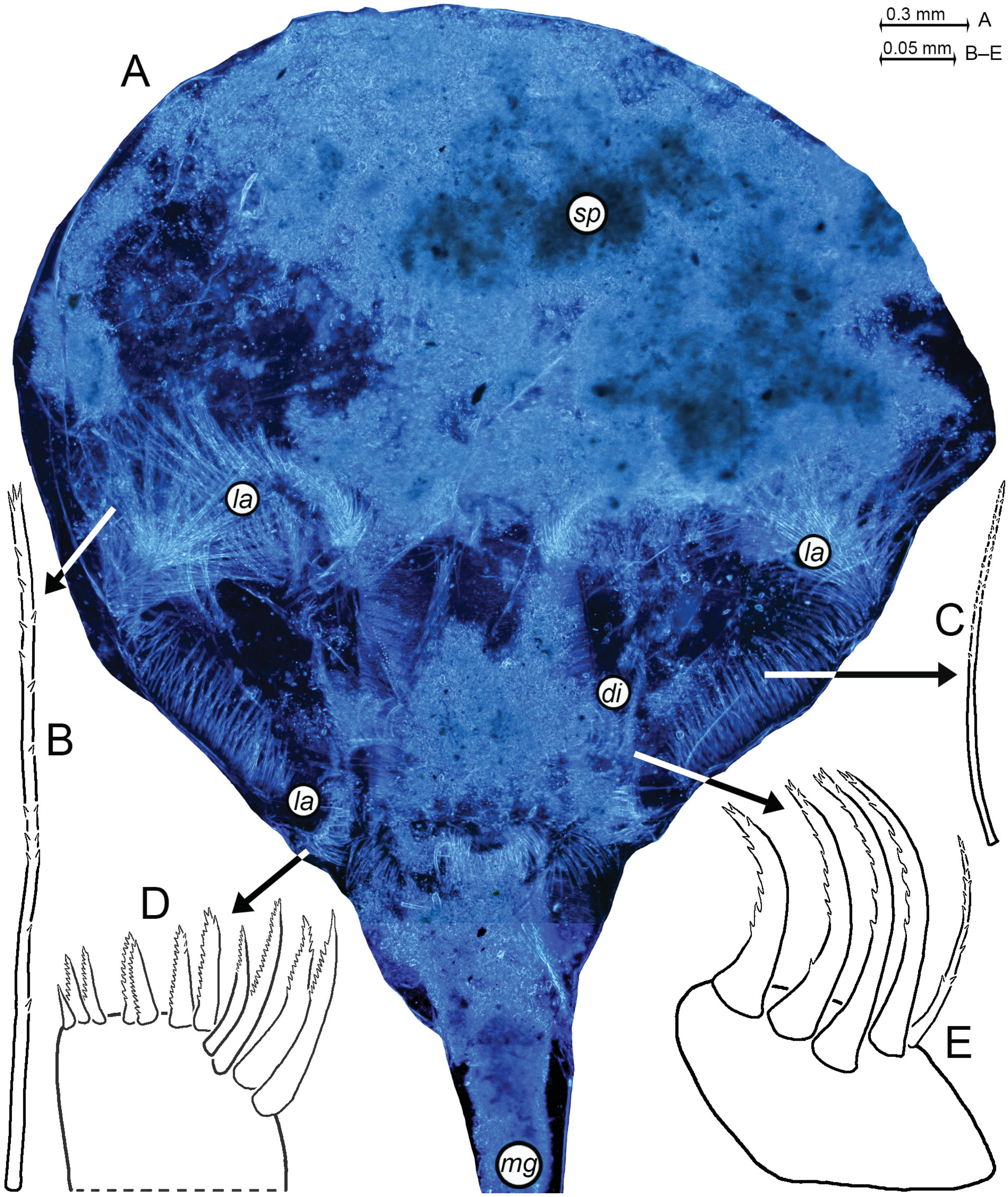

Fig. 34. Foregut in *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (ZMH 64660). **A**. Foregut expanded on slide, dorsal view. **B–E**. Details of A, arrows point to modified spines of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *sp* = storage space. A. Object artificially separated from background.

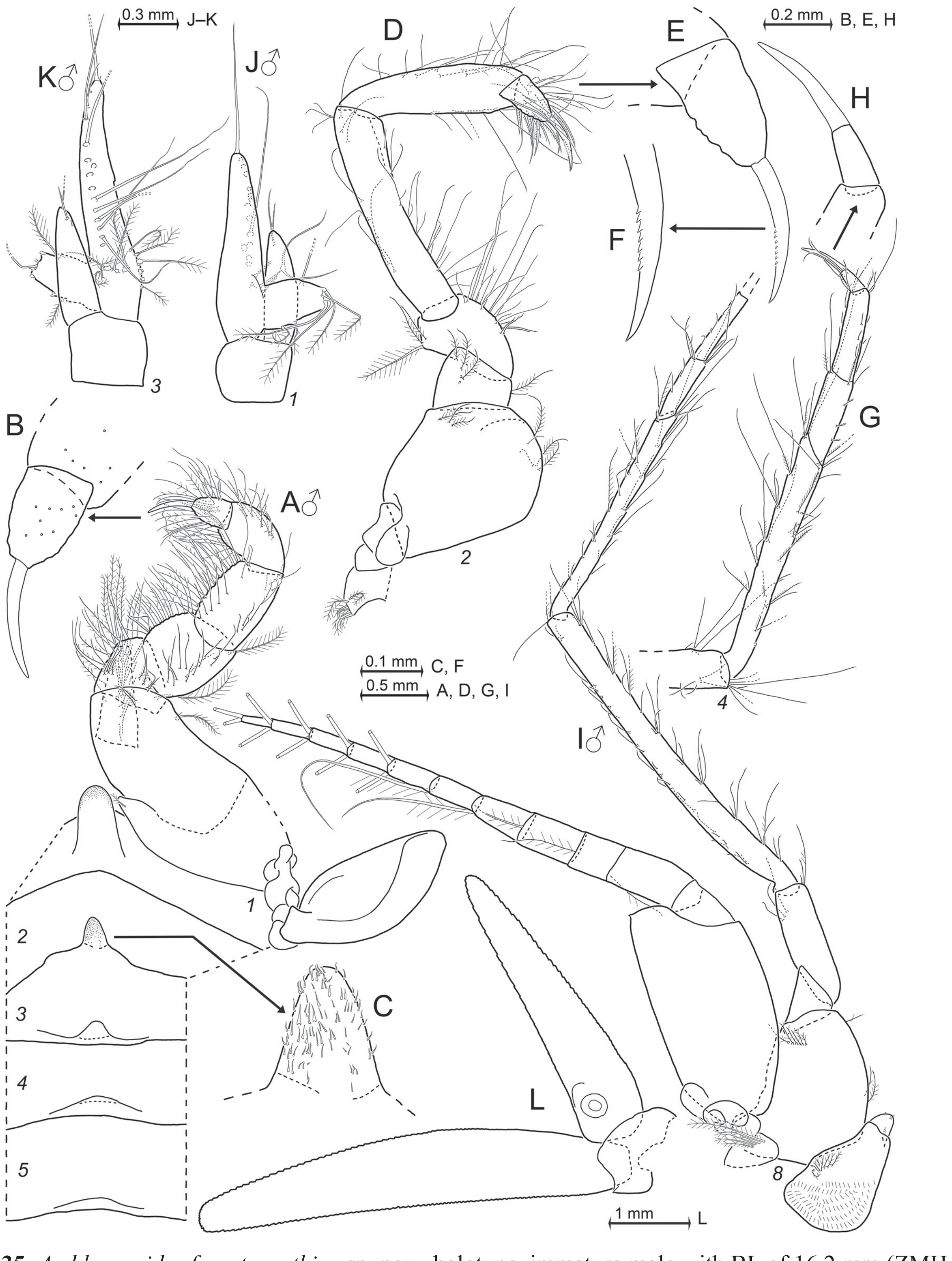

Fig. 35. *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (ZMH 64660). **A**. Thoracic endopod 1 with epipod and sternites 1–5 (exopod broken). **B**. Detail of A, showing dactylus with nail, pore diameters not to scale, setae omitted. **C**. Detail of A, showing median process of sternite 2. **D**. Thoracic endopod 2, caudal view. **E**. Detail of D, showing dactylus with nail, setae omitted. **F**. Detail of E, showing distal part of nail. **G**. Tarsus of thoracic endopod 4. **H**. Detail of G, showing dactylus with nail, setae omitted. **I**. Thoracopod 8 with penis, caudal view. **J**. Pleopod 1, mesial = caudal view. **K**. Pleopod 3, lateral = rostral view. **L**. Uropods, dorsal view, setae omitted.

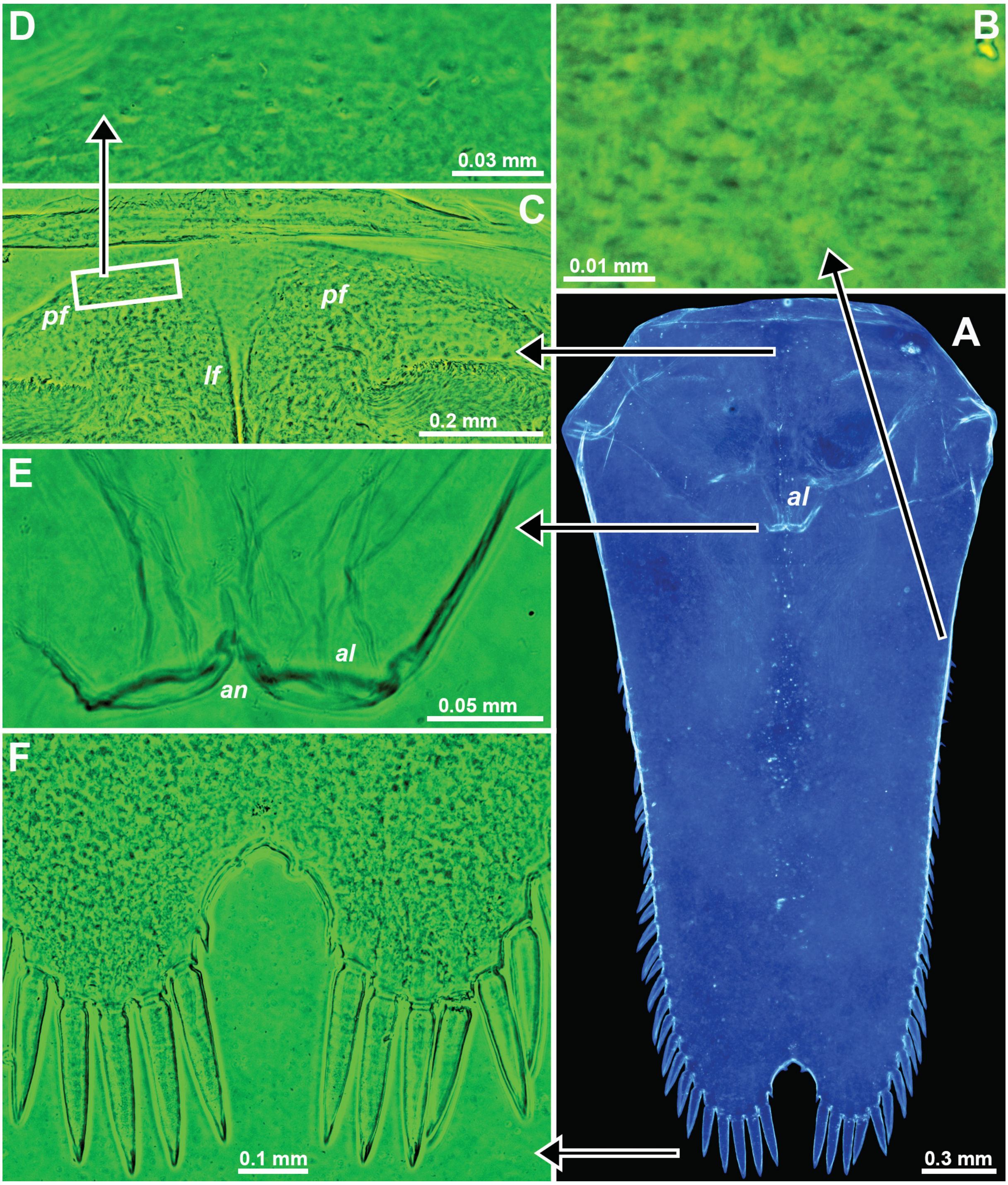

Fig. 36. Telson in *Amblyopsoides fenestragothica* sp. nov., holotype, immature male with BL of 16.2 mm (ZMH 64660). **A**. Telson expanded on slide, dorsal view. **B**. Detail of A, showing scale fields close to lateral margin of telson. **C**. Detail of A, showing basal portion of telson with two pore fields. **D**. Detail of C, showing part of left pore field (some pores not in focus). **E**. Detail of A, showing ventral anal lobe, focused through the artificially transparent tissue, dorsal view. **F**. Detail of A, showing distal portion of telson. Abbreviations: *al* = anal lobe; *an* = anus; *lf* = mid-longitudinal fold; *pf* = pore fields. A. Object artificially separated from background.

Thorax (Fig. 35A–I). Sternite 1 with distally rounded median lobe distally bearing slender triangular scales as in process from sternite 2 (Fig. 35C). A median lobe on sternite 1 is normal in Mysidae. Five basally thick, barbed setae on intersegmental joint between sternite 2 and sympod 2 (Fig. 35D). Sternites 2–4 with short, rounded median processes decreasing in size caudally (Fig. 35A); only process 2 covered with scales (Fig. 35C). Basal plates of thoracic exopods 3–8 with smooth cuticle, length twice maximum width (Fig. 35I), plates with minute tooth-like projection on disto-lateral edge (exopods 1–2 broken). Epipod 1 leaf-like, about as long as combined ischium and merus of endopod 1, no seta (Fig. 35A). Endopods with smooth cuticle, not considering setae and pores. Coxa of endopod 1 (Fig. 35A) with small mesial lobe apically bearing one small barbed seta; basis with large, setose endite, remaining segments without clear endite. About nine pores with diameter <3 µm on caudal face of dactylus and about 15 pores on propodus (only six pores on distal part of propodus visualized in Fig. 35B). Endopods 1–2 with six segments (Fig. 35A, D), endopods 4, 6 and 8 with eight segments counting from basis to dactylus (Fig. 35I; endopods 3, 5 and 7 broken). Dactylus of endopod 2 not reflexed. Dactyli 4, 6 and 8 (Fig. 35H) only slightly more slender than dactyli 1–2 (Fig. 35B, E). All available dactyli with weakly curved claws; claws 1, 4, 6 and 8 smooth (Fig. 35B, H), claw 2 subapically microserrated on inner margin (Fig. 35F). Endopod 8 extends to mandibles when stretched anteriorly, and to basal third of telson when stretched posteriorly. Penes (Fig. 35I) of immature male mid-laterally with longitudinal series of 7–8 barbed setae and basally with dense coat of small, fine ‘hairs’. No spermatozoa detected.

Pleon (Figs 31A, 35J–K). Length of pleomeres 1–5 is 0.4, 0.5, 0.5, 0.5 and 0.6 times length of pleomere 6, respectively (Fig. 31A). Pleomere 6 shorter than combined length of pleomeres 4–5. Pleopods 1–5 of immature male without setae on sympod (Fig. 35J–K). Endopod and exopod still unsegmented at this stage of maturity, endopod with large pseudobranchial lobe. Endopod well setose, exopod with only few setae on and near apex. Scutellum paracaudale triangular with narrowly blunt apex.

Tail fan (Figs 31A, 35L, 36). Endopod and exopod of uropods 1.5 and 2.0 times as long as sixth pleomere, respectively. Exopod ⅔ times telson length; endopod ⅘ times telson length and 0.7 times exopod length (Fig. 35L). Exopod extends 0.3 times its length beyond endopod and 0.6 times beyond telson; endopod 0.4 times its length beyond telson. Exopod with slightly concave, almost straight lateral margin and with convex mesial margin; its terminus broadly rounded, convex. Margins of endopod converge in narrow V-shaped manner up to blunt apex. Uropods with smooth cuticle, not considering setae. Statoliths composed of fluorite, diameter 0.31–0.32 mm. Telson subbasally with pair of pore fields flanking midline (Fig. 36C–D); fields with 24 and 27 pores, respectively, with diameter <3 µm. Telson with 2–6 µm long and 0.6–1.0 µm wide triangular scales organized in clusters of about 10–20 scales (Fig. 36B). Clusters together form narrow longitudinal ribbon (as in Fig. 19D but shorter), proceeding close to each lateral margin between ⅕ and ½ of telson length from basis. Lateral margins (Fig. 36A) armed with 25–26 spines; telson with total of 59 spines.

Paratype (♀)

Terminal segment of antennular trunk without female lobe. Position of tooth at outer margin of antennal scale at one-third of scale length in immature female with BL 14.1 mm (vs at half scale length in holotype with BL 16.2 mm). Terminal margin of telson with three pairs of large spines flanking mid-terminal indentation (vs four pairs in holotype). Each lateral margin of telson armed with 21 spines; telson with total of 50 spines.

Amblyopsoides lepidophthalma sp. nov.
urn:lsid:zoobank.org:act:830B8838-C5F9-4C1B-AF7E-D2489C265D2E
Figs 37–40

Diagnosis

Based on subadults of both sexes. All features within limits of generic diagnosis. Frontal margin of carapace obtuse-angled. Carapace covers less than a third of rostral extension of eyes, its antero-lateral edges broadly rounded. Eye rudiments separate, dorsoventrally compressed, reduced to roughly trapeziform, almost triangular pads without visual elements. Eyes dorsally hispid all over, mid-rostrally with ocular papilla projecting one-tenth of antero-posterior extension of eye. Transverse articulations between three antennular trunk segments. Antennal peduncle with three segments lined in a single plane. Antennal scale extends half its length beyond antennular trunk. Scale with minute apical segment separated by a transverse suture. Lateral margin bare up to a tooth at half length of scale, remaining distal portion densely setose. Mouthparts normal, labrum rostrally angular with rounded tip. Thoracic exopod 1 with 9-segmented flagellum, exopods 2–8 with 10-segmented flagellum. Endopods 3–8 with unsegmented carpus separated from 2-segmented propodus by an oblique articulation; both segments of propodus again separated by an oblique articulation from each other. Subadult male with pleopods 1–5 biramous, no spines; sympod without setae, exopod and endopod with setae. Endopod of uropods with one slender spine near mesial margin below statocyst. Telson trapezoid with distally continuously converging margins, length $5/3$ times maximum width near basis, five times width at terminus, and about $11/10$ length of ultimate pleomere. Terminal margin with very shallow (1–3% of telson length) median indentation bearing a pair of small laminae. A pair of barbed setae may be present between laminae in some specimens. Indentation flanked by 2–3 pairs of large spines in all specimens. Lateral margins of telson proximally bare, distal $3/5$ with 20–26 spines discontinuously increasing in length distally, proximal 11–15 spines organized in groups of large spines with 1–2 small spines in between. Telson with total of 45–58 spines, always with pair of paramedian laminae, pair of setae not always present.

Etymology

The species name is an adjective with Latinized feminine ending, formed by fusion of the Classic Greek adjective 'λεπιδωτός' ('scaly') with the noun 'ὀφθαλμός' ('eye'), related to the scaly (Fig. 38D) eye rudiments. The adjectivation of the noun has precedence in the moth *Elachista ophthalma* Kaila, 2011.

Material examined

Holotype
SOUTHERN OCEAN • 1 ♂ subad. (BL = 21.4 mm); South Sandwich Trench, E of Montagu Island, ANDEEP-II station 141-10; 58°25.08′ S, 25°00.77′ W to 58°24.93′ S, 25°00.95′ W; depth 2313–2281 m; 23 Mar. 2002; EBS supranet; ZMH 64662.

Paratypes
SOUTHERN OCEAN • 1 ♀ subad. (BL = 18.9 mm), 7 imm., 14 juv.; same collection data as for holotype; ZMH 64666 • 1 ♀ imm. (BL = 11.0 mm); same collection data as for holotype except for occurrence in epinet; ZMH 64664 • 1 imm. (BL = 8.1 mm); same collection data as for preceding; ZMH 64665 • 1 ♀ subad. (BL = 24.4 mm at premolt stage, ovarian tubes full with large eggs, on slides); Drake Passage, NW of Elephant Island, ANDEEP-I station 041-3; 59°22.24′ S, 60°04.06′ W to 59°22.40′ S, 60°03.99′ W; depth 2375–2372 m; 26 Jan. 2002; EBS epinet; ZMH 64663.

Type locality and distribution

The type locality is South Sandwich Trench, east of Montagu Island, 58°25.08′ S, 25°00.77′ W to 58°24.93′ S, 25°00.95′ W, depth 2313–2281 m. Also found in the Drake Passage, NW of Elephant Island. The resulting total ranges are 58–59° S, 25–60° W, depth 2281–2375 m.

Description

Holotype (♂)

Subadult male not dissected (Figs 37, 38G, 39K). Fig. 39A–J, L of a paratype serves to illustrate situation in non-dissected holotype. All features of holotype within ranges of specific diagnosis. Body length 21.4 mm. Rostrum measures 3% of BL, carapace without rostrum 29%, cephalothorax 35%, pleon without telson 50% and telson 12%. Clypeus with short, spear-like mid-rostral process (visible only in ventral view: Fig. 37E) nearly as long as proximal segment of antennular trunk.

Carapace (Fig. 37A–B). Normal, anterior margin uptilted (Fig. 37C), forming a short obtuse-angled rostrum ⅕ of length of terminal segment of antennular trunk. Cervical sulcus strong, cardial sulcus distinct; posterior margin concave, broadly rounded. Carapace leaves only ultimate thoracomere mid-dorsally exposed.

Eyes (Fig. 37D). Eye rudiments large, their antero-posterior extension 0.8–0.9 times maximum width and 1.2 times length of terminal segment of antennular trunk. Eyes dorsoventrally flattened by a factor of 3.0. Cuticle hispid over most of dorsal, lateral and frontal faces. Ocular papilla emerges dorsally closely behind rostral margin. Papilla small, proximally hispid due to smaller scales compared to those of main body of eye rudiments.

Antennula (Fig. 39C). Trunk measures 10% of BL, extending ¾ of its length beyond eyes. Measured along dorsal midline, basal segment is 0.4 of trunk length, median 0.2 and terminal 0.4. Length of basal segment 0.6 times width. Basal segment produced in a short lobe at disto-lateral edge, lobe distally with four setae. Terminal segment of antennular trunk 1.1 times as long as wide (Fig. 37D). Terminal segment with disto-median lobe armed disto-laterally with four barbed setae (for teeth see paratypes below). Appendix masculina inserts ventrally near terminal margin of antennular trunk; appendix conical, apically rounded, still small at this stage of maturity. Flagella large, width of outer flagellum measured near basis 1.1 times width of inner flagellum.

Antenna (Fig. 37C–E). Antennal scale measures 18% of BL. Scale length 3.5 times maximum width, 1.7 times length of antennular trunk and 2.0 times length of antennal peduncle. Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Sympod with slightly produced disto-lateral edge forming small tooth-like projection. Scale well setose along mesial margin and on distal lobe. Peduncle 3-segmented, its basal segment contributes 25%, median segment 40% and terminal segment 35% to total length.

Cephalothorax (Fig. 37). Rostral half of labrum right-angled triangular with blunt apex (Fig. 37E; dorsoventrally inclined in Fig. 39E). Basal plate of exopods 1–8 twice as long as maximum width. Plates increase by total of ⅖ of length from plate 1 to plate 5 and then decrease by ⅕ down to plate 8. Plates 1–8 with smooth cuticle, disto-lateral edge with tooth-like projection (less tooth-like in Fig. 40F for a paratype). Endopods very slender (as in Fig. 40K), endopod 3 measures one-fourth of BL, endopod 4 one-third (endopods 5–8 broken in holotype). Endopod 3 extending to distal end of antennular trunk when stretched anteriorly and to pleomere 2 when stretched posteriorly. Endopods 1–2 with six segments, endopods 3–4 with eight segments counting from basis to dactylus. Endopods with smooth cuticle, not counting setae and pores. Dactyli 1–2 large as in most Mysidae, in contrast to tiny dactyli 3–4 (as in Fig. 40K–L). Dactylus 2 not reflexed. Dactyli 1–4 with smooth, weakly curved claws. Claws 1–2 strong; claws 3–4 small, needle-like. Penes small, already longer than wide at this stage of maturity.

Pleon (Figs 37A–B, 39K). Length of pleomeres 1–5 is 0.6, 0.6, 0.5, 0.5 and 0.6 times length of pleomere 6, respectively. Endopod of pleopods 1–5 with large pseudobranchial lobe. Endopods 3 and 5 nine-

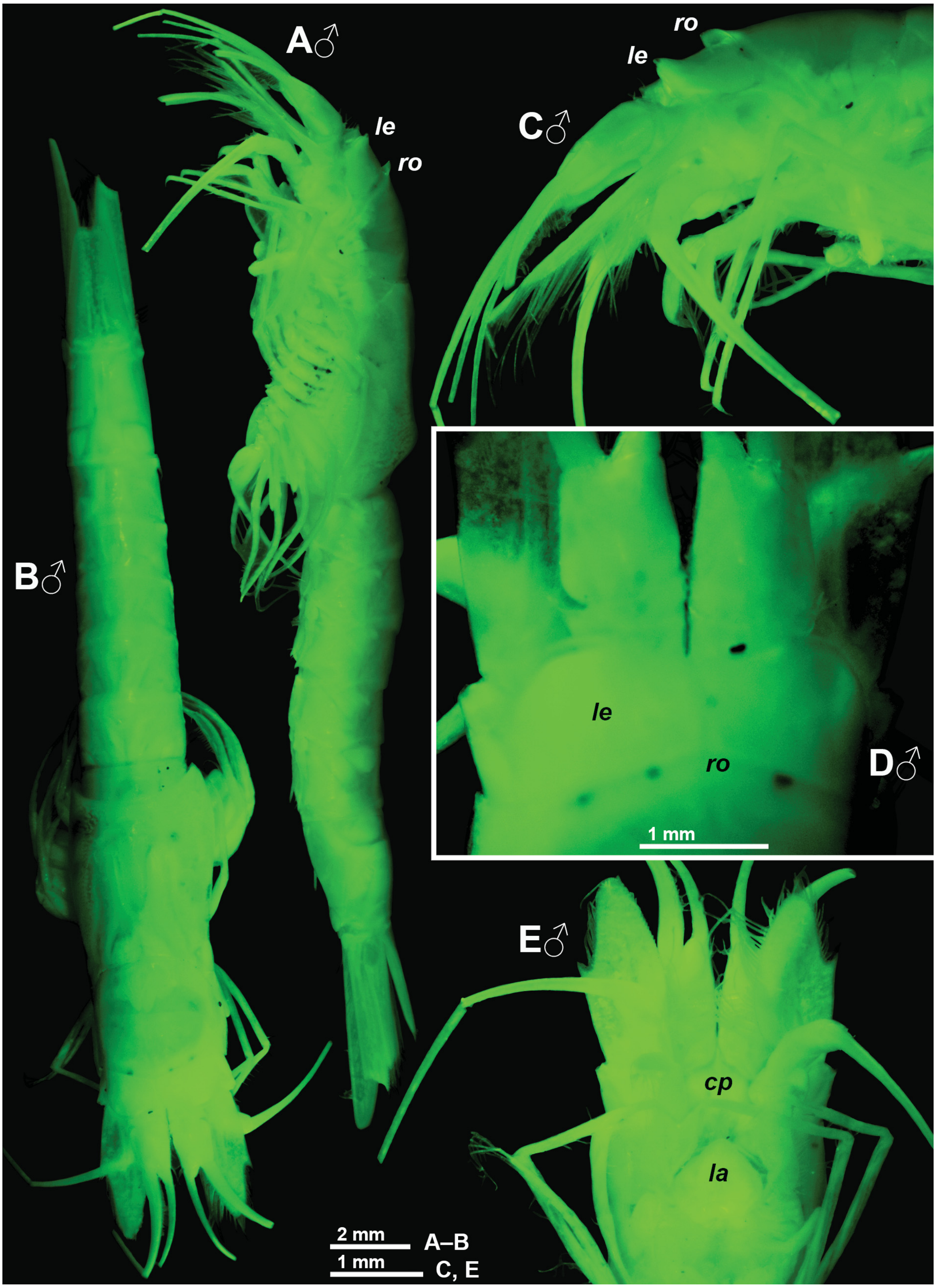

Fig. 37. *Amblyopsoides lepidophthalma* sp. nov., holotype, subadult male with BL of 21.4 mm (ZMH 64662). **A–B**. Holotype in toto, lateral (A) and dorsal (B) views. **C–E**. Cephalon, lateral (C), dorsal (D) and ventral (E) views. Abbreviations: *cp* = clypeus with rostral process; *la* = labrum; *le* = left eye rudiment; *ro* = rostrum. Objects artificially separated from background.

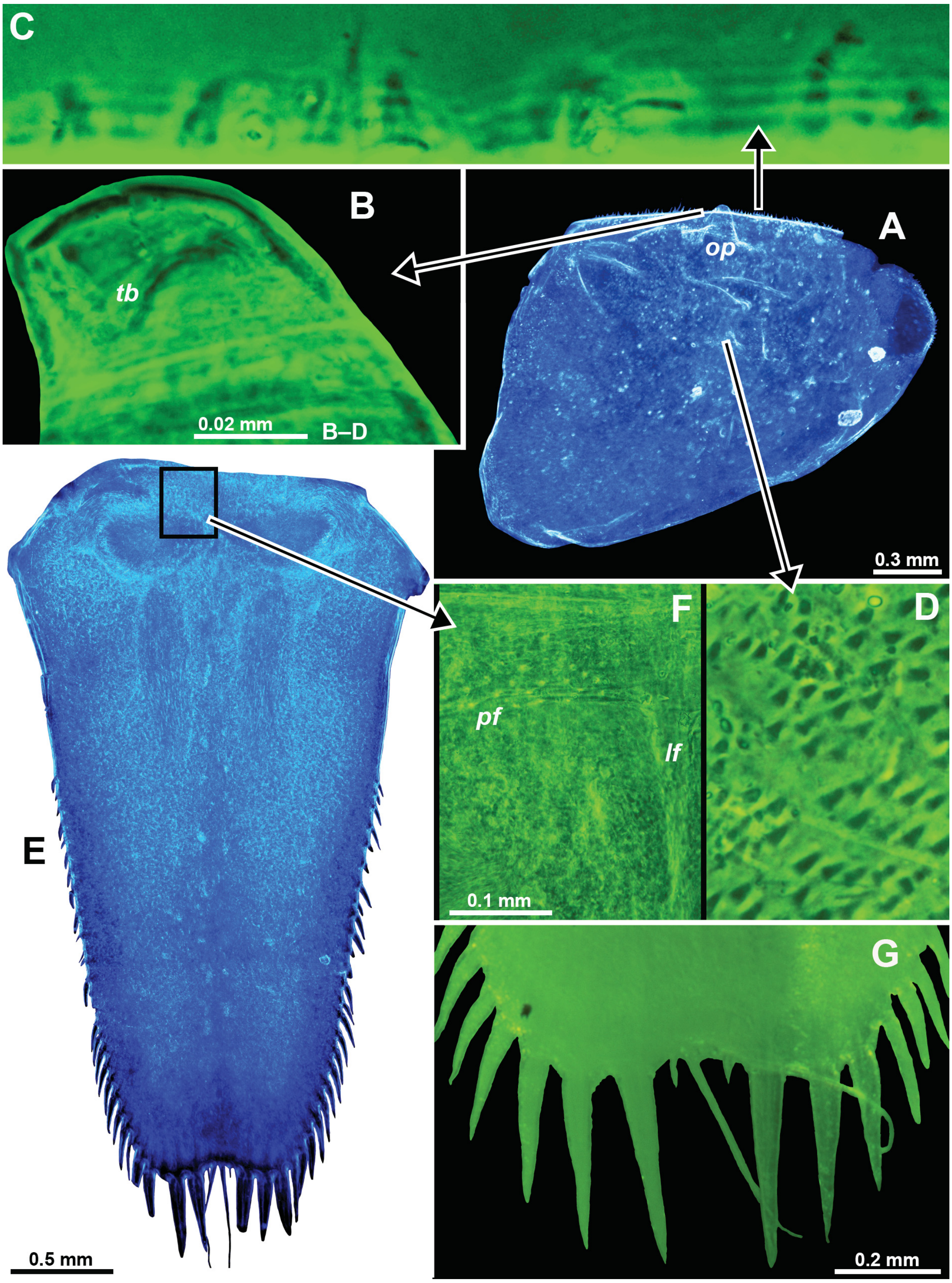

Fig. 38. *Amblyopsoides lepidophthalma* sp. nov., paratype, subadult female with BL of 24.4 mm (A–F: ZMH 64663) and holotype, subadult male 21.4 mm (G: ZMH 64662). **A**. Left eye rudiment with ocular papilla (*op*), dorsal view. **B**. Detail of A, showing tip of ocular papilla with toroidal bulge (*tb*). **C**. Detail of A, showing scales on anterior margin of eye, tangential view. **D**. Detail of A, showing scales on dorsal face of eye rudiment. **E**. Telson, dorsal view. **F**. Detail of E, showing left pore field and mid-longitudinal fold. **G**. Terminus of telson in another specimen, dorsal view. Abbreviations: *lf* = mid-longitudinal fold; *pf* = pore field. A–F. Objects expanded on slide with dorsal face upwards. G. Object photographed in loco. A–B, E, G. Objects artificially separated from background.

segmented and exopods unsegmented at this stage of male maturity (Fig. 39K). Endopods well setose, exopods with only few setae on and near apex. Scutellum paracaudale triangular with slightly convex flanks and with narrowly blunt, almost acute apex.

Tail fan (Figs 37A–B, 38E, G). Endopod and exopod of uropods 1.2 and 1.8 times as long as sixth pleomere, respectively. Exopod 1.7 times telson length; endopod 1.2 times telson length and 0.6 times exopod length. Exopod extends 0.3 times its length beyond endopod, 0.4 times beyond telson and endopod 0.2 times its length beyond telson. Exopod with slightly concave, almost straight lateral margin and with well convex mesial margin; its terminus broadly rounded, convex. Margins of endopod converge in narrow V-shaped manner up to blunt apex. Uropods with smooth cuticle, not considering setae and single spine. Lateral margins of telson armed with 25–26 spines; telson with total of 57 spines and a pair of paramedian setae flanked by a pair of laminae (Fig. 38G).

Paratypes

Carapace (Fig. 39A–B). Median pore group located 5% of carapace length in front of posterior margin of carapace, constituted by ten pores flanking a larger pore-like structure (Fig. 39B) on top of a low bulge.

Eyes (Figs 38B–D, 39A). Expanded on slide. Papilla ends in a toroid with central pore (Fig. 38B). Completely internal, ovoid cell mass proximally close to papilla interpreted as organ of Bellonci; this organ drawn as tiny dashed ellipsoid in Fig. 39A. Dorsal face of (mounted) eyes covered with minute, acutely-tipped triangular scales laterally and frontally increasing in size by a factor of ≈2–3 (Fig. 38C vs 38D).

Antennae s. lat.. (Fig. 39C–D). Basal segment of antennular trunk with well-developed antennular bursa. Terminal segment of trunk with disto-median lobe armed with four barbed setae and with 3–4 minute teeth increasing in size laterally as in Fig. 33C; no female lobe, no callynophore. Position of tooth at outer margin of antennal scale varies with body size: arising at one-third of scale length from basis in juveniles with BL 7–10 mm (n = 10) vs at half scale length in subadults with BL 19–24 mm (n = 3).

Mandibles (Fig. 39F–H). Palp of both mandibles and processus molaris of right mandible as in *A. fenestragothica* sp. nov. (33E–G), but left processus molaris (Fig. 39H) less strongly cuticularized. Right mandible (Fig. 39G) in *A. lepidophthalma* sp. nov.: pars incisiva with three large and two intermediate-sized teeth; digitus mobilis with one large and about five small teeth; pars centralis with series of nine tooth-like spines increasing in size distally, four large, distal-most spines armed with small secondary humps (worn-out toothlets?). Left mandible (Fig. 39H): pars incisiva with three large and a cluster of five small teeth; digitus mobilis with four large teeth; pars centralis with six slender spines distally increasing in size (smaller spines covered by trunk, not visualized in Fig. 39H), all along armed with stiff bristles.

Gut (Fig. 40B–E). Foregut most similar to that of *A. fenestragothica* sp. nov. (Fig. 34). As a notable difference, posterior part of lateralia on each side with dense cluster of five rather than eleven subequal spines. Storage volume empty. Anal lobe moderately cuticularized.

Maxillula (Fig. 39I). Only minor differences from that of *A. fenestragothica* sp. nov. (Fig. 33H). Distal segment with seven dorsal (= oral) spines serrated along aboral margin, 3–4 ventral (= aboral) spines along oral margin and two large ventral spines not serrated. Endite of maxillula terminally with 3–4 large, distally spiny setae. Only one (most proximal) seta backward curved in *A. lepidophthalma* sp. nov.

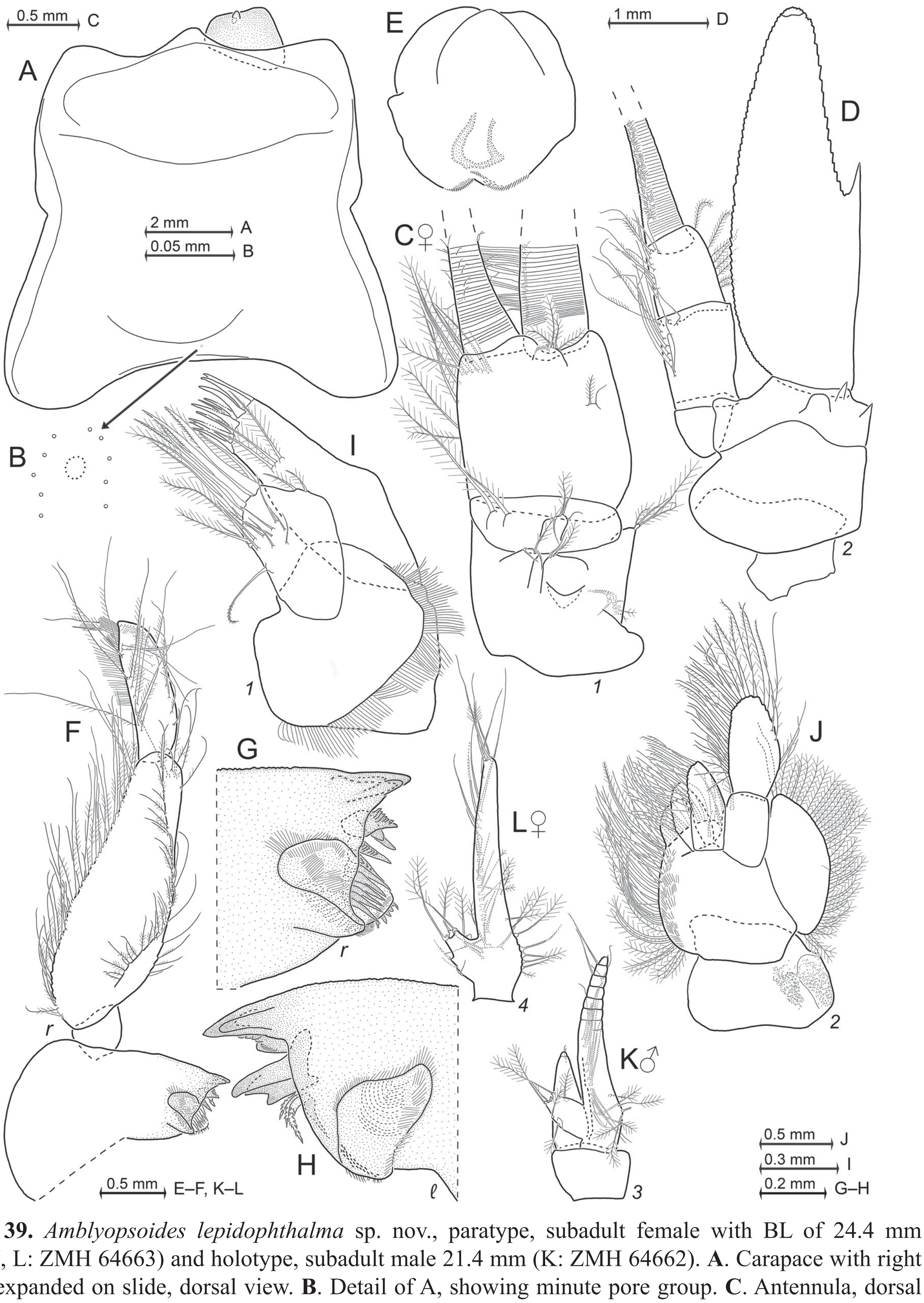

Fig. 39. *Amblyopsoides lepidophthalma* sp. nov., paratype, subadult female with BL of 24.4 mm (A–J, L: ZMH 64663) and holotype, subadult male 21.4 mm (K: ZMH 64662). **A**. Carapace with right eye expanded on slide, dorsal view. **B**. Detail of A, showing minute pore group. **C**. Antennula, dorsal view. **D**. Antenna with antennal gland, dorsal view, setae omitted from antennal scale. **E**. Labrum, aboral view, dorsoventrally somewhat inclined. **F**. Mandible with right palpus, caudal view. **G–H**. Masticatory part of right (G) and left (H) mandibles, caudal view. **I**. Maxillula, caudal view. **J**. Maxilla, caudal view. **K**. Pleopod 3 of subadult male, rostral = lateral. **L**. Pleopod 4 of subadult female, caudal = mesial.

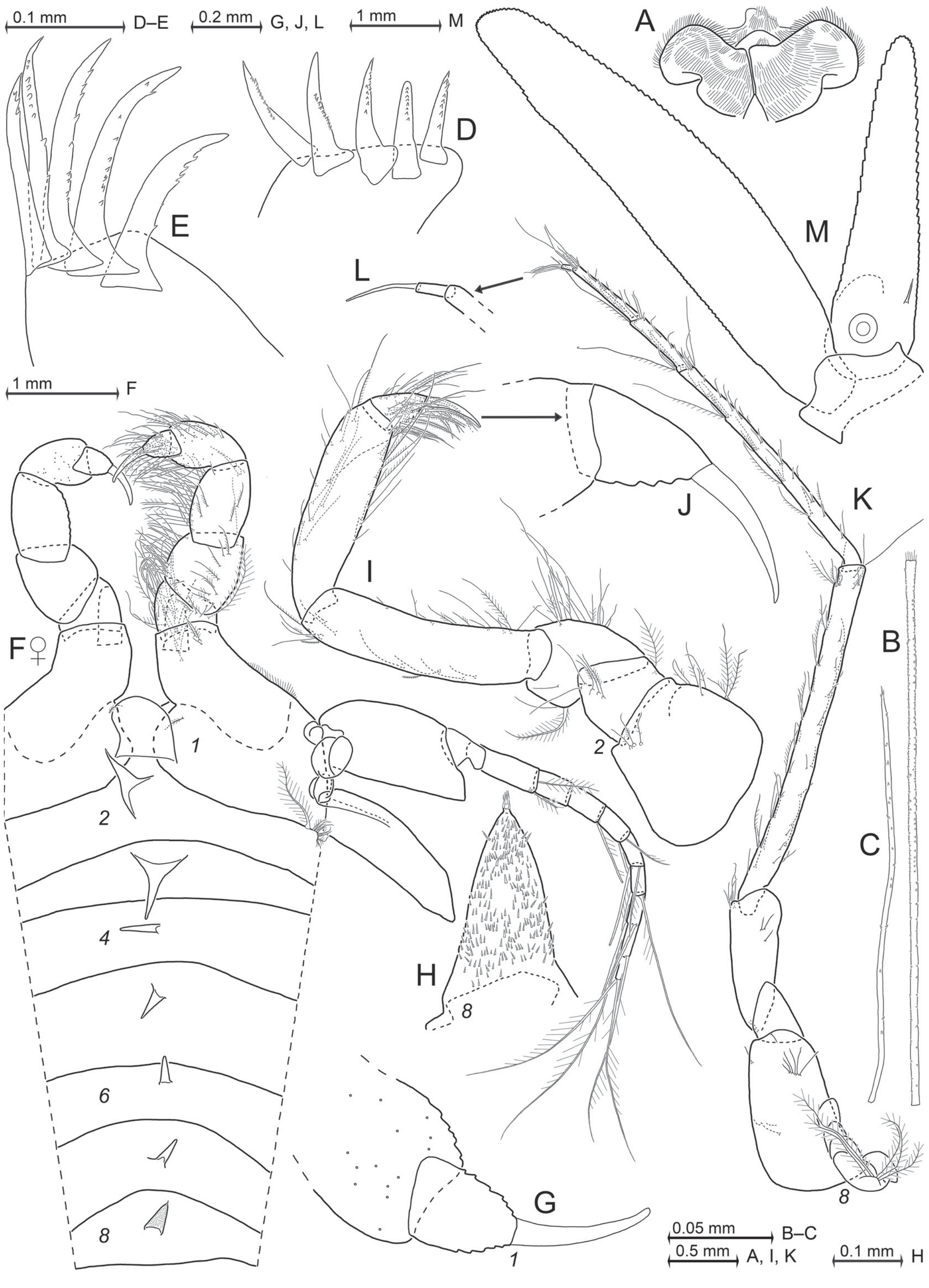

Fig. 40. *Amblyopsoides lepidophthalma* sp. nov., paratype, subadult female with BL of 24.4 mm (ZMH 64663). **A**. Labium. **B–E**. Modified spines of foregut, from anterior (B), median (C) and posterior (D) parts of lateralia and from dorsolateral infolding (E). **F**. Thoracopod 1 with epipod and sternites 1–8, ventral view, setae omitted from right endopod (drawn to the left). **G**. Detail of F showing dactylus with nail, setae omitted, pore diameters not to scale. **H**. Detail of F showing median process of sternite 8. **I**. Thoracic endopod 2, caudal view. **J**. Detail of I showing dactylus with nail, setae omitted. **K**. Thoracic endopod 8, caudal view. **L**. Detail of K showing dactylus with nail, setae omitted. **M**. Uropods, ventral view, setae omitted.

Maxilla (Fig. 39J). Almost identical to that of *A. fenestragothica* sp. nov. (Fig. 33I). As almost negligible differences, length of distal segment of palp 1.8–1.9 times maximum width and 59–60% of total palp length in *A. lepidophthalma* sp. nov.

Thorax (Fig. 40F–L). Sternite 1 with smooth, distally rounded median lobe. A median lobe on this sternite is normal in Mysidae. Closely set, basally thick, barbed setae on intersegmental joint between sternites 2–8 and their respective sympods (Fig. 40F, K), no such setae on sternite 1. Sternites 2–8 each with acutely triangular median process. Processes on sternites 2–3 clearly larger than subequal processes on 4–8 (Fig. 40F). Only process on sternite 8 covered all around with triangular, mostly slender scales (Fig. 40F, H). Epipod 1 leaf-like, about as long as combined ischium, merus and carpus of endopod 1, no seta (Fig. 40F). Basal plate of exopods 2–8 with tooth-like projection from disto-lateral edge; small projection not always present in exopod 1. Coxa of endopod 1 mesially with one small barbed seta; basis with large, setose endite on rostral face (endite indicated by dashed line in Fig. 40F), remaining segments without endite. Propodus of endopod 1 with about 16–20 loosely scattered pores (Fig. 40G) with diameter ≤3 µm on caudal face. Endopods 3–8 each with eight segments counting from basis to dactylus (Fig. 40K); these endopods 30–40% of BL; small dactylus with tiny, needle-like claw (Fig. 40L). Endopod 8 extends to mandibles when stretched anteriorly and to basal third of telson when stretched posteriorly.

Tail fan (Figs 38E–F, 40M). Statoliths composed of fluorite, diameter 0.26–0.27 mm (n = 2). Telson with pair of subbasal pore fields (Fig. 38E) flanking midline; each field with about 40 pores with diameter <3 µm (only part of pores in focus in Fig. 38F). Two barbed setae visible between disto-paramedian laminae (Fig. 38E) in ten out of 21 telsons inspected. No scales such as otherwise found along lateral telson margins detected in *Amblyopsoides fenestragothica* sp. nov., *Amblyops arianii* sp. nov., *A. bipapillatus* sp. nov., *A. tattersalli*, *Dactylamblyops benthophilus* sp. nov. or *Desmocornea subchelata* gen. et sp. nov. These species share a pair of paramedian pore fields near basis of telson with *Amblyopsoides lepidophthalma* sp. nov.

Genus ***Paramblyops*** Holt & Tattersall, 1905

Paramblyops Holt & Tattersall, 1905: 124, pl. xxi.

Paramblyops – Tattersall & Tattersall 1951: 255 (diagnosis). — O.S. Tattersall 1955: 111 (short description). — Birstein & Tchindonova 1970: 288, figs 7–8 (species description). — Mauchline 1980: 27–28 (taxonomy, in key to genera). — Murano 1981: 288–289 (description, key to species); 2002a: 35, table 1 (diagnosis, definition of species groups). — Tchindonova 1981: 26 (deep sea, distribution); 1993: 156–157, fig. 2 (partim, vertical distribution). — San Vicente 2010: 17, 47 (short diagnosis, Antarctic); 2017: table 2 (geographical and bathymetric distribution). — Petryashov 2014b: 188 (distribution). — Wittmann *et al.* 2014: 336 (taxonomy). — Petryashov & Frutos 2017: 404 (in key to genera). — Mees & Meland 2024: AphiaID 119891 (accepted).

Type species

Paramblyops rostrata Holt & Tattersall, 1905, by original designation according to ICZN (1999).

Diagnosis

Based on adults of both sexes. Eye rudiments without stalk, separate, not connected by membranous integument, positioned laterally, each reduced to roughly triangular or rectangular pads with only disto-lateral edge produced into a tooth-like non-sensory projection, no visual elements, no ocular papilla. Antennular trunk with three segments separated by transverse articulations; basal segment without ventral carina. Antennal scale not subdivided, bare portion of lateral margin distally ending in a single, strong tooth; mesial margin setose all along. Antennal peduncle with three segments lined in a single plane. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile. Endopods 3–8, as far as known, with oblique articulation between carpus and propodus. Female pleopods representing setose rods with residual differentiation of pseudobranchial lobe. Male pleopods biramous, with well-developed sympod and multi-segmented exopod. Endopod 1 short, unsegmented; endopods 2–5 long, multi-segmented; all endopods with small, setose pseudobranchial lobe; endopod 4 with modified setae in certain species. Uropods setose all around, without any or with a single spine below statocyst. Telson trapeziform, distally converging, no lateral constriction, terminally truncate without any or with small median indentation. Lateral margins all along or only distally with densely set spines. Terminal margin mesially with small spines plus 0–3 setae, in any case altogether flanked by large spines.

Species included (7 species acknowledged)

— *P. brevirostris* O.S. Tattersall, 1955 from the Southern Ocean: circum-Antarctic, 62–72° S, depth 160–4655 m (O.S. Tattersall 1955; Petryashov 2006, 2014b; San Vicente 2010; present paper: 78)
— *P. hamatilis* Fukuoka, 2009 from the NW Pacific, E of Japan, 39–43° N, 141–143° E, depth 1535–2137 m (Fukuoka 2009)
— *P. macrops* Murano, 2007 from the E Indian Ocean: Timor Sea, 13° S, 123° E, depth 535–547 m (Murano 2007)
— *P. petrescui* sp. nov. from the Southern Ocean: NW Weddell Sea, 65° S, 52° W, depth 3049–3050 m
— *P. rostratus* Holt & Tattersall, 1905 from the E Atlantic (Angola Basin, Morocco, off Ireland, Faroes, Iceland), NW Atlantic (U.S. east coast) and Mediterranean (Catalan Sea, Tyrrhenian Sea), 16° S–64° N, 14° E–72° W, depth 280–5434 m (Colosi 1929; W.M. Tattersall 1951; Tattersall & Tattersall 1951; Lagardère 1972; Cartes & Sorbe 1995; San Vicente 2017; Wittmann 2020; Astthorsson & Brattegard 2022)
— *P. spatulicaudus* Murano, 2002 from the Indo-Pacific: Sulu Sea, 8° N, 122° E, depth 4890 m (Murano 2002a)
— *P. tenuicaudus* Murano, 2002, from the Indo-Pacific: Sulu Sea, 8° N, 118° E, depth 495–500 m (Murano 2002a)

Note. As concluded in the 'Discussion' below, *P. bidigitatus* W.M. Tattersall, 1911 and *P. japonicus* Murano, 1981 are not included here but transferred to *Amphiakrops* gen. nov. In addition, *P. globorostris* Birstein & Tchindonova, 1970 is transferred to *Chelamblyops* gen. nov.

Paramblyops brevirostris O.S. Tattersall, 1955

Paramblyops brevirostris O.S. Tattersall, 1955: 112–113, fig. 25.

Paramblyops brevirostris – Ledoyer 1990: 40, fig. 2b (morphology, Antarctic record with query). — Ariani *et al.* 1993: table 1 (mineral composition of statoliths). — Wittmann 1996: fig. 1f (Antarctic record). — Brandt *et al*. 1998: table i (biogeography, endemism). — Murano 2002a: table 1 (morphology, taxonomy). — San Vicente *et al*. 2006: table 2 (records in Southern Ocean). — San Vicente 2010: 60 (in key to Antarctic species). — Petryashov 2014a: 150, map 10 (biogeography, Antarctic distribution). — Wittmann & Ariani 2019: suppl. (statolith composition, biogeography). — Mees & Meland 2024: AphiaID 226324 (accepted).

Material examined

SOUTHERN OCEAN • 1 imm. (damaged, BL = 14.2 mm); eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, ANDEEP-III station 059-5; 67°29.74′ S, 00°01.93′ W to 67°29.61′ S, 00°02.19′ W; depth 4655–4655 m; 14 Feb. 2005; EBS supranet • 1 ♀ ad. (damaged, BL = 32.2 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 081-8; 70°32.02′ S, 14°35.05′ W to

70°32.19′ S, 14°35.13′ W; depth 4392–4385 m; 24 Feb. 2005; EBS epinet • 1 ♂ ad. (damaged, BL = 33.8 mm); same collection data as for preceding except for occurrence in supranet • 1 juv. (BL = 6.6 mm); Weddell Slope, entrance to Powell Basin, ANDEEP-III station 121-10; 63°37.73′ S, 50°38.09′ W to 63°37.55′ S, 50°38.37′ W; depth 2663–2659 m; 15 Mar. 2005; EBS supranet • 1 juv. (BL = 3.1 mm); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 150-6; 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W; depth 1996–1993 m; 20 Mar. 2005; EBS epinet.

Morphological notes

Short, broadly subtriangular to about rectangular, apically narrowly rounded rostrum. Disto-lateral edge of eye rudiments forming a short, tooth-like, non-sensory projection; no ocular papilla. Organ of Bellonci in basal position. Antennular trunk with five barbed setae on disto-median lobe, no tooth. Trunk with well-developed antennular bursa, no female antennular lobe, no callynophore.

Type locality and distribution

The type locality is Chollaert Channel, Palmer Archipelago. According to Article 76.1 of the ICZN (1999) the type locality encompasses both detailed localities of the syntypes specified by O.S. Tattersall (1955), namely Discovery stations no. 181 (64°20′ S, 63°01′ W, depth 160–335 m) and no. 182 (64°21′ S, 62°58′ W, depth 278–500 m) as long as no lectotype is defined; the coordinates are taken from the Discovery Committee (1929). Combined data by Petryashov (2006) and San Vicente (2010) give the distribution of this species as the South Shetland Islands, Antarctic Peninsula, Weddell Sea and Bellingshausen Sea, 65° S–72° S, depth 160–529 m, not including the unsure record by Ledoyer (1990) in the Weddell Sea at 74° S at depths of 1996–2012 m. The present records from the Powell Basin and the Weddell Sea at 62° S–71° S obtained on the sea floor at depths of 1991–4655 m mean a strong vertical range extension. Accordingly, the species appears to be circum-Antarctic with proven range of 62° S–72° S, 160–4655 m.

Paramblyops petrescui sp. nov.

urn:lsid:zoobank.org:act:DEE643B6-6E0C-4B3D-A427-2B5DC2F4A9D2

Figs 41–44

Diagnosis

Based on adult female only. All known features within limits of generic diagnosis. Carapace with bare margins all around, no toothed ‘shoulders’. Rostrum broadly rounded, very short, covering only basal portions of subrostral lobe, which covers only about half ‘length’ of eyes. Eye rudiments separate, dorsoventrally compressed, reduced to roughly subtriangular pads, mesially rounded, disto-laterally with one tooth-like projection, no visual elements, no ocular papilla. Antennal sympod without teeth near disto-lateral edge. Clypeus with short, acutely converging, mid-rostral process, due to small size visible only in ventral view. Mouthparts normal, labrum rostrally rounded. Marsupium formed by three pairs of oostegites. Endopod of uropods with one small spine mesially below statocyst. Telson trapeziform, distally converging, length ⅘ times maximum width; its basal third with bare lateral margins; distal ⅔ of each lateral margin with 16 densely-set spines, distally weakly increasing in size in roughly continuous series. Transverse terminal margin of telson with weak mid-terminal indentation bearing plumose setae between minute spines; indentation flanked by four pairs of large spines, increasing weakly in size from submedian to most lateral position.

Etymology

The species name is a noun with masculine ending in genitive singular, dedicated to Iorgu Petrescu in recognition of his important contributions to the taxonomy of cumaceans.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 38.7 mm, on slides); NW Weddell Sea, ANDEEP-II station 131-3; 65°19.83′ S, 51°31.62′ W to 65°19.95′ S, 51°31.41′ W; depth 3049–3050 m; 5 Mar. 2002; EBS epinet; ZMH 64684.

Type locality

The type locality is ANDEEP II station 131-3: NW Weddell Sea, 65°19.83′ S, 51°31.62′ W to 65°19.95′ S, 51°31.41′ W, depth 3049–3050 m.

Description

Holotype (♀)

All features as in specific diagnosis. Female with BL 38.7 mm, marsupium empty (Fig. 41A). Rostrum contributing 1% to BL, carapace 25% (without rostrum), thorax 32%, pleon 55% and telson 12%. Subrostral lobe (Fig. 41B–C) dorsally completely covered by densely set, ellipsoidal cuticular structures, representing minute depressions in part (accidentally) filled with external material (Fig. 41E). Cuticular depressions of various sizes locally present on part of antennular trunk, antennal peduncle, carapace (arrows in Fig. 41C), eyes, posterior thoracic sternites, basal plates of thoracic exopods 1–8 and outer face of oostegite 3 (Fig. 41E–F).

Carapace (Fig. 42C). With disto-lateral edges well rounded; its anterior margin with small triangular processes flanking short rostrum. Cervical sulcus distinct, cardial sulcus not established, no pores detected. Posterior margin weakly concave. Carapace leaving one thoracic segment exposed dorsally.

Eye rudiments (Figs 41B, 42C). Proximo-lateral portions of eye rudiments with similar, narrower, less densely set cuticular depressions compared with subrostral process (Fig. 41F–G). Eyes with tooth-like projection (when oriented anteriorly) extending at most to median segment of antennular trunk. Eyes without pores, no pigment, no organ of Bellonci.

Antennula (Figs 41B, 42A). Basal segment of trunk with disto-lateral setose lobe extending beyond proximal half of median segment. Basal segment dorsally with well-developed antennular bursa and two setose apophyses. Median segment with many setae closely behind its rostral margin, no apophysis. Terminal segment almost as long as combined median and basal segments; disto-median lobe with four barbed setae, no tooth. This segment without female lobe and without callynophore. Basal portion of inner flagellum 0.8 times as wide as in outer flagellum.

Antenna (Fig. 42B). Sympod 2-segmented, caudally in addition with end sac of antennal gland. Sympod with distally rounded, linguiform lobe positioned ventrally behind antennal scale. Peduncle 3-segmented, its basal segment contributes 18%, median segment 52% and terminal segment 29% to total length. Its basal segment bare, median and terminal segments each with a few barbed setae and several smooth setae close to distal margin, lateral margins without setae. Antennal scale distally broken.

Primary mouthparts (Fig. 42D–H). Labrum and labium normal. Mandibular palp with basal segment contributing 8%, median segment 59%, and terminal segment 33% to total palp length. Palp not hispid, its basal segment without setae. Length of median segment 2.0 times maximum width, mesial and lateral margins convex, setose. Terminal segment 3.6 times as long as broad and 0.5 times as long as median segment. Terminal segment well setose, with dense series of short, microserrated setae on distal ¾ of mesial margin. Right mandible (Fig. 42G) with three large teeth on pars incisiva and with six smooth blunt processes (worn teeth?) on well-developed digitus mobilis. Pars centralis modified, with continuous series of 13 tooth-like spines proximally (with respect to mouth field) increasing in

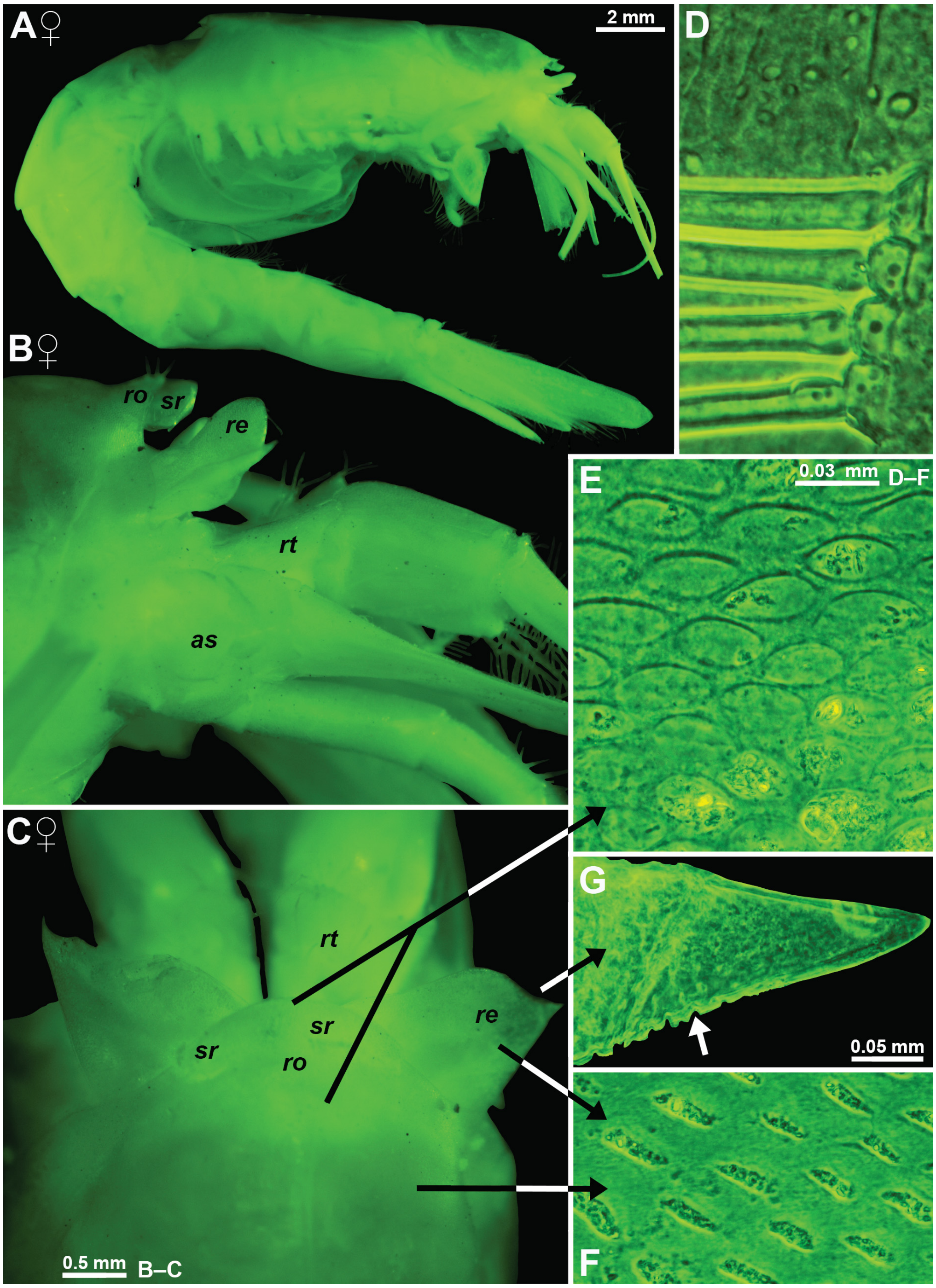

Fig. 41. *Paramblyops petrescui* sp. nov., holotype, adult female with BL of 38.7 mm (ZMH 64684). **A**. Holotype in toto, lateral view (thoracic endopods 3–8 and most exopods broken). **B–C**. Cephalon, lateral (B) and dorsal (C) views. **D**. Pore field laterally (= aborally) beneath setal group on distal segment of maxillula. **E**. Detail of C, with arrows pointing to cuticle structures at surface of subrostral lobe and of parts of carapace. **F**. Detail of C, with arrows pointing to smaller cuticle structures at surface of lateral portions of eye and of other parts of carapace compared with that of E. **G**. Tip of eye rudiment, dorsal view; small arrow points to tangential aspect of surface cuticle structures. Abbreviations: *as* = antennal sympod; *re* = right eye; *ro* = rostrum; *rt* = right antennular trunk; *sr* = subrostral lobe. A–C, G. Objects artificially separated from background. E–F. Many cuticle surface depressions (probably accidentally) filled with external material.

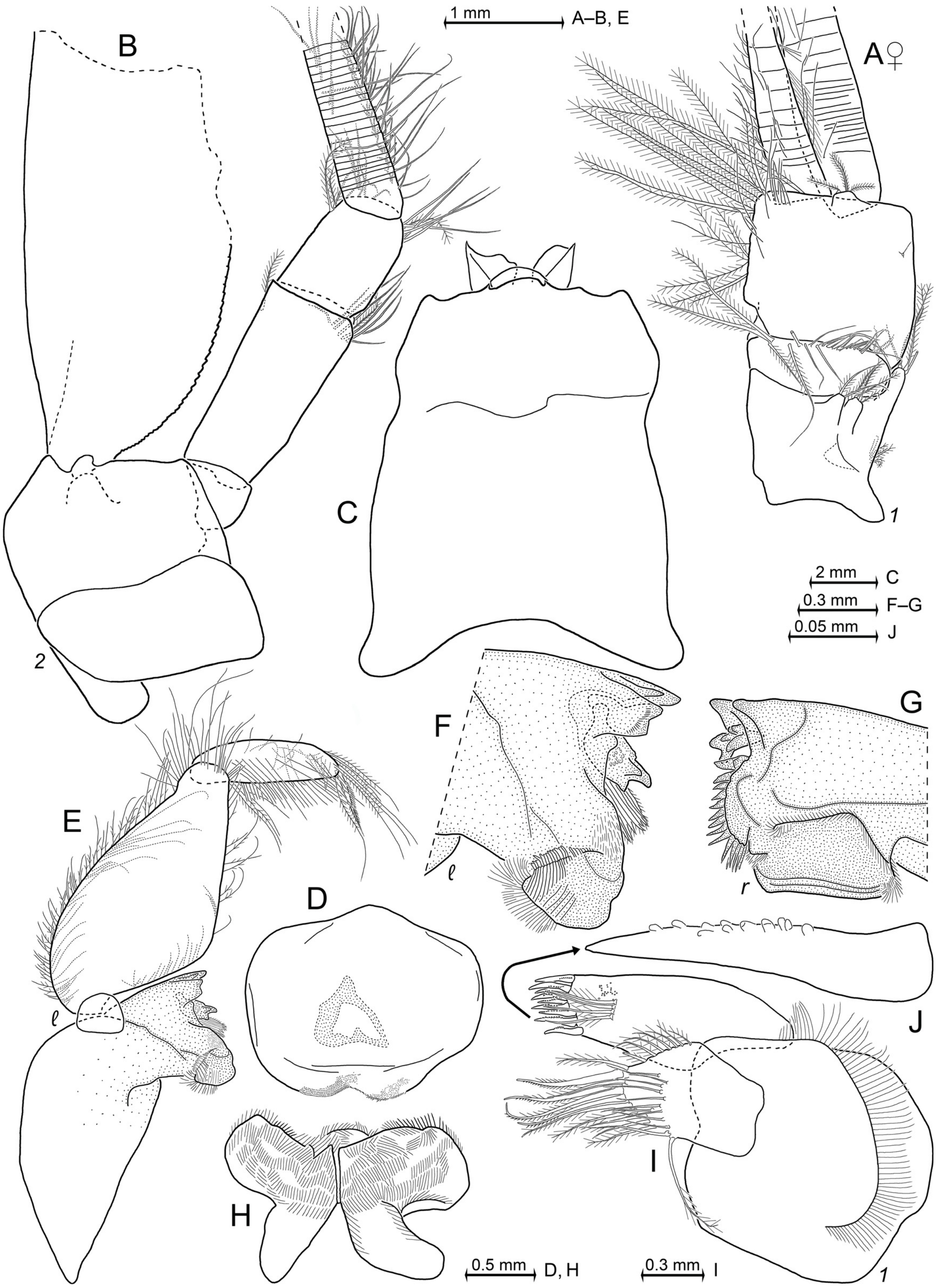

Fig. 42. *Paramblyops petrescui* sp. nov., holotype, adult female with BL of 38.7 mm (ZMH 64684). **A**. Antennula, dorsal view. **B**. Antenna with antennal gland, dorsal view; setae of fragment of antennal scale omitted. **C**. Carapace with subrostral lobe and eyes expanded on slide, dorsal view. **D**. Labrum, ventral = aboral view. **E**. Mandible with left palpus, rostral view. **F–G**. Masticatory part of left (F) and right (G) mandibles, rostral view. **H**. Labium. **I**. Maxillula, caudal view. **J**. Detail of I, showing bluntly serrated spine.

length and slenderness; most spines smooth, only five most proximal spines slightly microserrated by stiff bristles. Processus molaris plate-like with stiff bristles along most of its periphery. Left mandible (Fig. 42F) less modified, pars incisiva with three large teeth, most proximal broad and bumpy, resembling a mammalian molar tooth. Digitus mobilis also bumpy with three large and two small teeth. Pars centralis with ten slender spines bearing stiff bristles. Processus molaris with strong grinding lamellae and with bundles of stiff bristles on and near proximal edge.

Gut. Foregut (Fig. 43B–E) essentially as in *Amblyopsoides fenestragothica* sp. nov. (Fig. 34). As main differences, modified spines on anterior part of lateralia not serrated (Fig. 43B–C vs Fig. 34B–C) and spines on posterior part of lateralia and on dorsolateral infoldings less strongly serrated (Fig. 43D–E vs Fig. 34D–E). Storage volume filled to about ⅔ by numerous crustacean remains, unidentified masticated organic material, mineral particles and a few foraminiferans. Midgut full of finely masticated material and large amounts of mineral particles. Anal lobe distinct, weakly cuticularized.

Maxillula (Figs 41D, 42I–J). Distal segment with 9–10 strong spines on transverse terminal margin; most distal spine smooth, remaining spines unilaterally, bluntly serrated (Fig. 42J). This segment subterminally with 3–4 setae bearing long stiff barbs. Field of 16–20 pores laterally (= aborally) from this group of setae (not every pore visualized in Fig. 41D). Lateral margin of basal segment furnished with longitudinal, comparatively long series of densely set long hairs. Endite terminally with three large, distally spiny (by stiff bristles) setae flanked by several less strong, shorter setae of that kind. Both sides of endite with numerous additional, barbed setae. As also in *Dactylamblyops benthophilus* sp. nov., most proximal seta of endite long, slender and backward curved.

Maxilla (Fig. 43A). Most similar to that of *Amphiakrops brandtae* gen. et sp. nov. (Fig. 60A). Sympod with three mesial, only distally strongly setose lobes. Exopod extends to distal margin of basal segment of palp. Exopod with numerous plumose setae all along lateral margin; longest seta at tip (accidentally bent backward in Fig. 43A), mesial margin bare. Palpus with apical segment 1.2 times as long as basal segment. Apical segment 1.8–2.2 times as long as maximum width. Basal segment basally broader, its mesial margin with three densely barbed, basally thick setae. Distal ⅔ of apical segment with well setose margins, proximal third bare except for minute hairs, no spines.

Thorax (Fig. 43F–I). Sternite 1 on each side with small, dense field (shaded areas in Fig. 43F) of slender triangular scales. Group of 4–5 basally thick setae on intersegmental joint between sympod 2 and sternite 2. Basal plates of exopods 1–7 about twice as long as maximum width, three times as long as width in exopod 8. Disto-lateral edge with small tooth-like projection in all basal plates. Flagellum of exopods 1–8 with 18–19, 20–21, 22, 21, 21, 20, 22 and 20 segments, respectively (n = 2, 2, 1, 1, 1, 1, 1, 1). Basis of endopod 1 with setose endite (below drawing plane, visualized as dashed line in right endopod drawn to the left in Fig. 43F), remaining segments without endite. Endopod 1 densely setose along mesial margin, much less along lateral margin; its smooth apical claw (Fig. 43G) almost as long as dactylus. Epipod 1 (Fig. 43F) linguiform with narrowly blunt apex, about as long as combined ischium, merus and carpus of endopod 1; no seta. Endopod 2 (Fig. 43H) with six segments counted including basal segment, the latter fused with sympod, no endites; dactylus densely setose, remaining segments less setose; dactylus not clearly reflexed, no claw detected in dense jungle of setae. Thoracic endopods 3–8 broken.

Marsupium (Fig. 43I). Proximal portion of oostegite 1 with dense brush of setae on inner face. These comparatively long setae microserrated by series of stiff, acute bristles along distal half. Less dense brush of such setae on oostegite 2, even fewer on oostegite 3. Only distal third of oostegite 1 with barbed to plumose setae along its margins. Ventral margin of oostegite 1 all along furnished with setae, proximally with microserrated setae, distally turning into barbed setae and finally into plumose setae

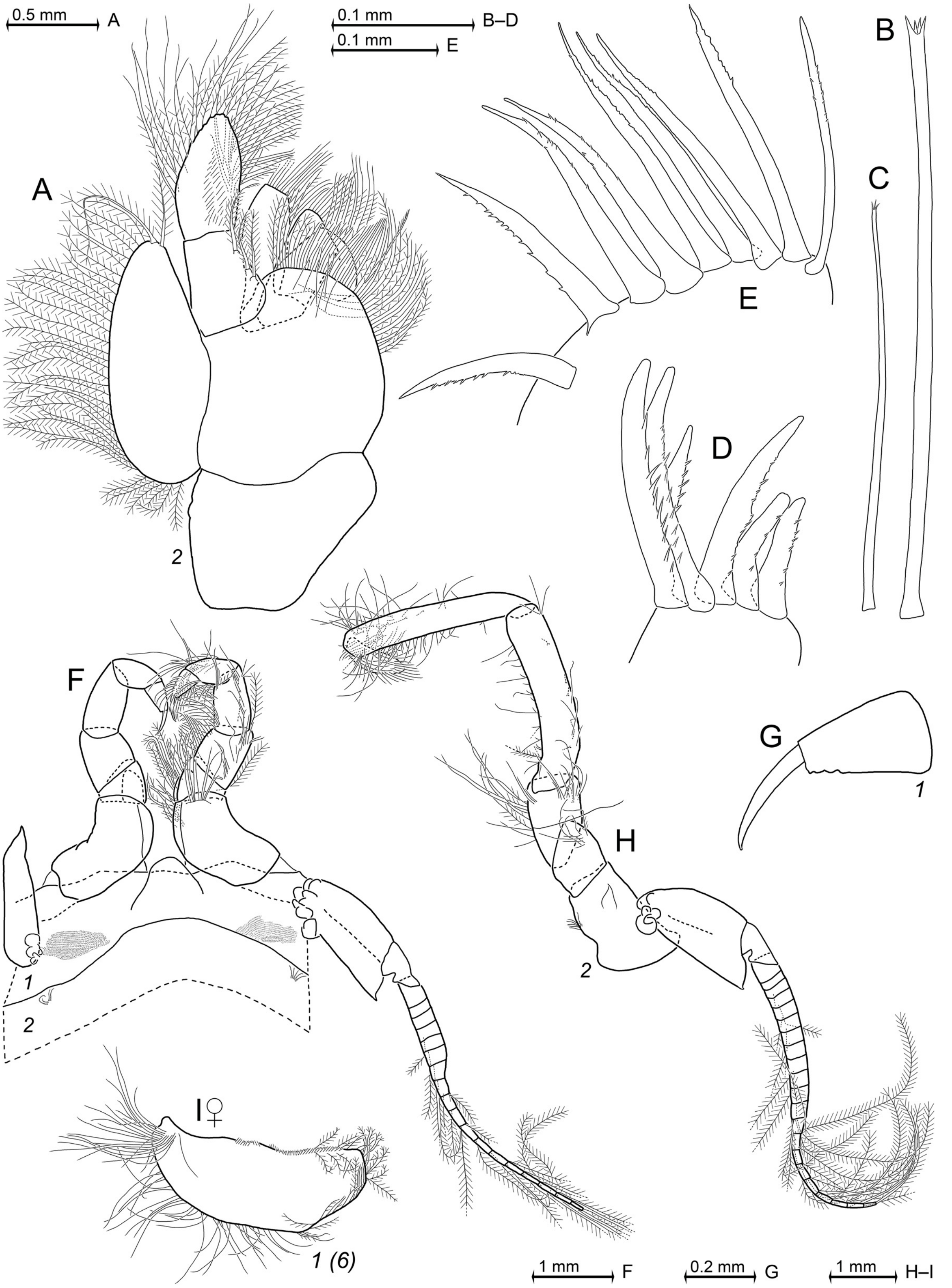

Fig. 43. *Paramblyops petrescui* sp. nov., holotype, adult female with BL of 38.7 mm (ZMH 64684). **A**. Maxilla, rostral view. **B–E**. Modified spines of foregut, from anterior (B), median (C) and posterior (D) parts of lateralia and from dorsolateral infolding (E). **F**. Thoracopod 1 with epipod 1 (caudal view) and sternites 1, 2 (ventral view); setae omitted from right endopod (drawn to the left). **G**. Detail of F, showing dactylus with nail, setae omitted. **H**. Thoracopod 2, caudal view. **I**. Oostegite 1, inner face.

in about continuous series. Proximal third of dorsal margin bare, central third densely lined by tiny hairs. Most of dorsal margin bare in oostegites 2–3. These oostegites with ventral and anterior margins plus part of posterior margin bearing dense series of barbed to plumose setae contributing to ventral and caudal ventilation-pervious closure of marsupium. Oostegites 1–2 with smooth cuticle on outer and inner faces, not counting brush of setae proximally on inner face. Only oostegite 3 with cuticular ornamentation (Fig. 41E–F) and with many loosely scattered, slender whip setae on outer face.

Pleon and tail fan (Figs 41A, 44). Pleomeres 1–5 are 0.5, 0.7, 0.6, 0.6 and 0.7 times length of pleomere 6, respectively; this value 1.7 for exopod of uropods, 1.2 for endopod and 1.0 for telson (Fig. 41A).

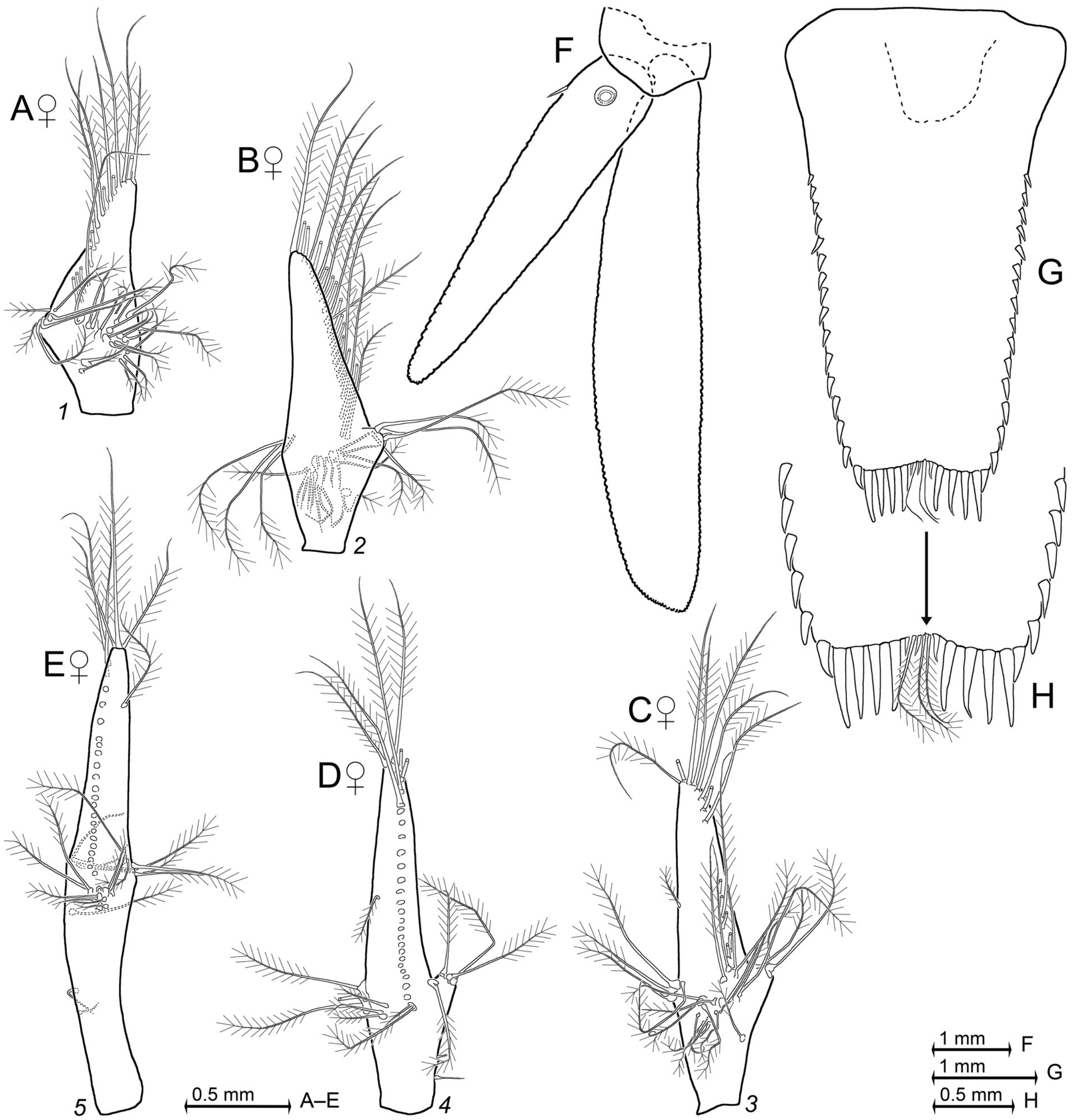

Fig. 44. *Paramblyops petrescui* sp. nov., holotype, adult female with BL of 38.7 mm (ZMH 64684). **A–E**. Pleopods 1–5, lateral = rostral (A, C–E) and mesial = caudal (B) views. **F**. Uropods, dorsal view, setae omitted. **G**. Telson, dorsal view. **H**. Detail of G, showing terminus of telson.

Pleopods 1–5 widening from basis up to rudiment of pseudobranchial lobe, followed by a more slender, straight distal portion on top; setation as in Fig. 44A–E. Pleopod length increasing caudally. Scutellum paracaudale triangular with acute tip. Uropods (Figs 41A, 44F) all around with setose margins, exopod extends 0.3 times its length beyond endopod and 0.4 times beyond telson. Statoliths composed of fluorite, diameter 0.25–0.26 mm (n = 2). Lateral margins of telson (Fig. 44G) weakly sigmoid, almost straight. Telson with total of 43 spines and three plumose setae, no pores, no scales (such as otherwise found in Figs 8G, 14E). Telson furnished with 2 × 16 small spines on lateral margins, 2 × 4 large spines on terminal margin and three minute spines plus three setae in mid-terminal indentation. Additional specimens needed to judge whether asymmetrical arrangement of setae within indentation (Fig. 44H) represents a normal feature.

Genus ***Scolamblyops*** Murano, 1974

Scolamblyops Murano, 1974: 225–226.

Scolamblyops – Mauchline 1980: 27 (in key to genera). — Nouvel *et al.* 1999: 79 (systematics). — Fukuoka & Murano 2006: table iii (pleopod morphology). — Wittmann *et al.* 2014: 336 (systematics). — Petryashov & Frutos 2017: 405 (in key to genera). — Mees & Meland 2024: AphiaID 226134 (accepted).

Type species

Scolamblyops japonicus Murano, 1974, by original designation. So far only females known (Murano 1974a; Fukuoka 2009).

Revised diagnosis

Diagnosis of Murano (1974a) revised to include male of *S. muehlenhardtae* sp. nov. (first male described for genus). Carapace without or with very short rostrum; disto-lateral edges well rounded. Eye rudiments mesially adjoining though not fused, not connected by a membranous integument, each reduced to roughly rectangular pad; lateral margin distally with one tooth-like non-sensory projection, no visual elements, no ocular papilla. Antennular trunk with three segments separated by transverse or slightly oblique articulations; basal segment without ventral carina. Antennal scale not subdivided, its bare lateral margin ending in a single, strong tooth; mesial margin setose all along. Antennal peduncle with three segments lined in a single plane. Clypeus with unpaired, anterior process. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile. Endopod 3 with oblique articulation between carpus and propodus. Marsupium formed by three pairs of well-developed oostegites. Female pleopods representing setose rods with residual differentiation of pseudobranchial lobe. Male pleopods biramous, with well-developed sympod and multi-segmented exopod. Endopod 1 short, unsegmented; endopods 2–5 long, multi-segmented; all endopods with small, setose pseudobranchial lobe. Both rami of uropods undivided, setose all around. Telson trapeziform, distally converging, terminally truncate. Spines densely set all along terminal margin and along distal half up to almost entire lateral margins. Terminal margin with pair of small paramedian spines on each side flanked by large spines continuously increasing in length laterally, leaving a characteristic triangular spine-free portion between left and right spine series; no setae.

Species included

– *S. japonicus* Murano, 1974 from the NW Pacific: off Japan, 35–41° N, 138–144° E, depth 570–2055 m (Murano 1974a; Fukuoka 2009)
– *S. muehlenhardtae* sp. nov. from the Southern Ocean: Drake Passage and Powell Basin, 59–62° S, 47–61° W, depth 1993–2920 m

Remarks

Pseudomma oculospinum W.M. Tattersall, 1951, based on eye morphology, was acknowledged by Wittmann *et al.* (2014) as pertaining to the genus *Pseudomma* rather than to *Scolamblyops* as proposed by Murano (1974a).

Scolamblyops muehlenhardtae sp. nov.

urn:lsid:zoobank.org:act:E52C7FCF-C335-468C-ABF5-D50EF34E8649

Figs 45–49

Diagnosis

Based on adults of both sexes. Covers all features of generic diagnosis. Carapace anteriorly with very short, obtuse-angled rostrum with rounded apex. Freely projecting portion of rostrum up to ⅒ length of terminal segment of antennular trunk. Sub-quadrate eye rudiments with disto-lateral process narrowing to a blunt apex, no ocular papilla. Median segment of antennal peduncle four times as long as basal segment. Terminal lobe of antennal scale short, not or only slightly projecting beyond apical tooth. Scale extending one third its length beyond antennular trunk. Clypeus with long hastate unpaired process projecting anteriorly between antennulae up to basal third of terminal segment of antennular trunk. Labrum with short, tooth-like, rostral projection. Thoracic sternites 2–8 each with one median process in adult male, none in adult female. Marsupium with three pairs of oostegites. Penes short, stout. Female pleopods increasing in length caudally. Endopods of male pleopods 1–5 with 1, 11, 12, 12–13 and 11 segments, exopods with 13, 13, 13, 13 and 12 segments, respectively; no modified setae. Uropods without spine; exopod extending ⅓ its length beyond telson. Distal ⅚ of telson densely furnished with spines along lateral and terminal margins; transversely truncate terminal margin with pair of minute paramedian spines flanked by 5–6 pairs of large spines continuously increasing in length laterally, no setae. Telson with total of 52–74 spines, no laminae, no setae.

Etymology

The species name is a noun in genitive singular with feminine ending, dedicated to Ute Mühlenhardt-Siegel (Hamburg) in recognition of her important contributions to peracarid taxonomy and biogeography.

Material examined

Holotype

SOUTHERN OCEAN • 1 ov. ♀ (BL = 20.1 mm, on slides); Drake Passage, N of South Shetland Islands, ANDEEP-I station 114-4; 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W; depth 2914–2920 m; 18 Feb. 2002; EBS epinet; ZMH 64686.

Paratypes

SOUTHERN OCEAN • 1 ♂ ad. (BL = 16.5 mm, on slides); Drake Passage, N of South Shetland Islands, ANDEEP-I station 105-7; 61°24.16′ S, 58°51.55′ W to 61°24.26′ S, 58°51.83′ W; depth 2297.9–2307.5 m; 12 Feb. 2002; EBS supranet; ZMH 64688 • 1 juv. (BL = 5.3 mm); Drake Passage, NW of Elephant Island, ANDEEP-I station 041-3; 59°22.24′ S, 60°04.06′ W to 59°22.40′ S, 60°03.99′ W; depth 2375–2372 m; 26 Jan. 2002; EBS epinet; ZMH 64687 • 1 juv. (BL = 6.0 mm); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 150-6; 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W; depth 1996–1993 m; 20 Mar. 2005; EBS epinet; ZMH 64689.

Type locality and distribution

The type locality is ANDEEP I station 114-4: Drake Passage, N of South Shetland Islands, 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W, depth 2914–2920 m. This species is only known from the Drake Passage and Powell Basin, total ranges of 59–62° S, 47–61° W, depth 1993–2920 m.

Description

Holotype (♀)

All female features as in specific diagnosis. Female with BL 20.1 mm carrying 16 eggs with diameter 0.73–0.80 mm. Rostrum contributes 1% to BL, thorax 29%, pleon 51%, telson 19% and carapace without rostrum 27%. Carapace with smooth surface (Fig. 46D), no pores detected. Eye rudiments without pigment; tooth-like rostral process 7–9% of eye length (Fig. 46D). Rostral process of clypeus spit-like in dorsal view (as in Fig. 45D), while blade-like with distally converging margins in lateral view (as in Fig. 46C). Blade with only one minute subapical tooth, less than in adult male paratype (Fig. 46C).

Antennula (Fig. 46A). Trunk not dorsoventrally compressed. Basal segment with disto-lateral, setose lobe extending beyond proximal half of median segment; distinct antennular bursa. Each segment about mid-dorsally near distal margin with setose apophysis (lobe), basal segment with additional, small dorsal apophysis. Segmental border between median and terminal segment slightly oblique in dorsal as well as lateral view. Terminal segment without female lobe; disto-median lobe armed with one comparatively large tooth and four barbed setae. Basal portion of lateral flagellum 1.5–1.7 times as wide as in mesial flagellum.

Antenna (Fig. 46B). Two-segmented sympod with a strong tooth (dashed line in Fig. 46B) dorsally above basis of scale, and another less strong tooth (solid line) ventrally shortly behind scale, accompanied by additional tooth near disto-lateral edge of sympod. Peduncle 3-segmented, its basal segment contributes 13%, median segment 52% and terminal segment 36% to total length. Basal segment bare; median segment setose on distal third of mesial margin; terminal segment setose all along mesial margin.

Primary mouthparts (Figs 46E–H, 48A). Labrum and labium as in Figs 46H, 48A. Mandibular palp with basal segment contributing 7%, median segment 60% and terminal segment 33% to total palp length. Palp not hispid, its basal segment without setae. Length of median segment three times maximum width, its mesial margin convex, lateral margin sigmoid, mesial and lateral margins well setose. Terminal segment 4–5 times as long as broad and half as long as median segment. Terminal segment without seta on mesial margin, while comparatively sparsely setose along proximal ⅔ of lateral margin, though with dense series of short microserrated setae on distal third. Pars incisiva of right mandible (Fig. 46G) with four large teeth, digitus mobilis with only two large teeth, each serrated by small secondary teeth. Pars centralis modified, with strong tooth-like spine bearing many acute, stiff bristles proximally followed by dense series of eight subequal subtriangular spines, in part smooth, in part bearing a few stiff bristles. Processus molaris with large masticatory plate formed by densely set cuticular lamellae. Left mandible (Fig. 46F) normal, pars incisiva and digitus mobilis each with four large, blunt teeth. Pars centralis with six slender spines each bearing stiff, acute bristles. Processus molaris with strong but fewer grinding lamellae compared to right mandible. Processus molaris of both mandibles with bundles of long bristles on proximal margin.

Gut (Fig. 47). Gross structure of foregut normal (Fig. 47A). Lateralia with brushes of slender, proximally smooth, apically coronate spines (Fig. 47B) of various length, and with slender, apically pronged spines (Fig. 47C) densely coated with minute teeth along at least distal ⅔ of shaft. Posterior part of lateralia with dense cluster of four toothed spines of various size (Fig. 47D). Dorsolateral infoldings on each side with a pair of large spines, unilaterally strongly serrated along distal ⅔ (Fig. 47E). Storage volume full with food material (removed on right in Fig. 47A) including masticated organic material, crustacean remains, diatoms and mineral particles. Midgut densely filled with finely masticated material. Anal lobe distinct, weakly cuticularized (dashed lines in Fig. 49K).

Maxillula (Fig. 48B). Distal segment with 10–11 strong, smooth spines on transverse terminal margin. This segment subterminally with three densely set setae bearing long stiff barbs; no pores close to these

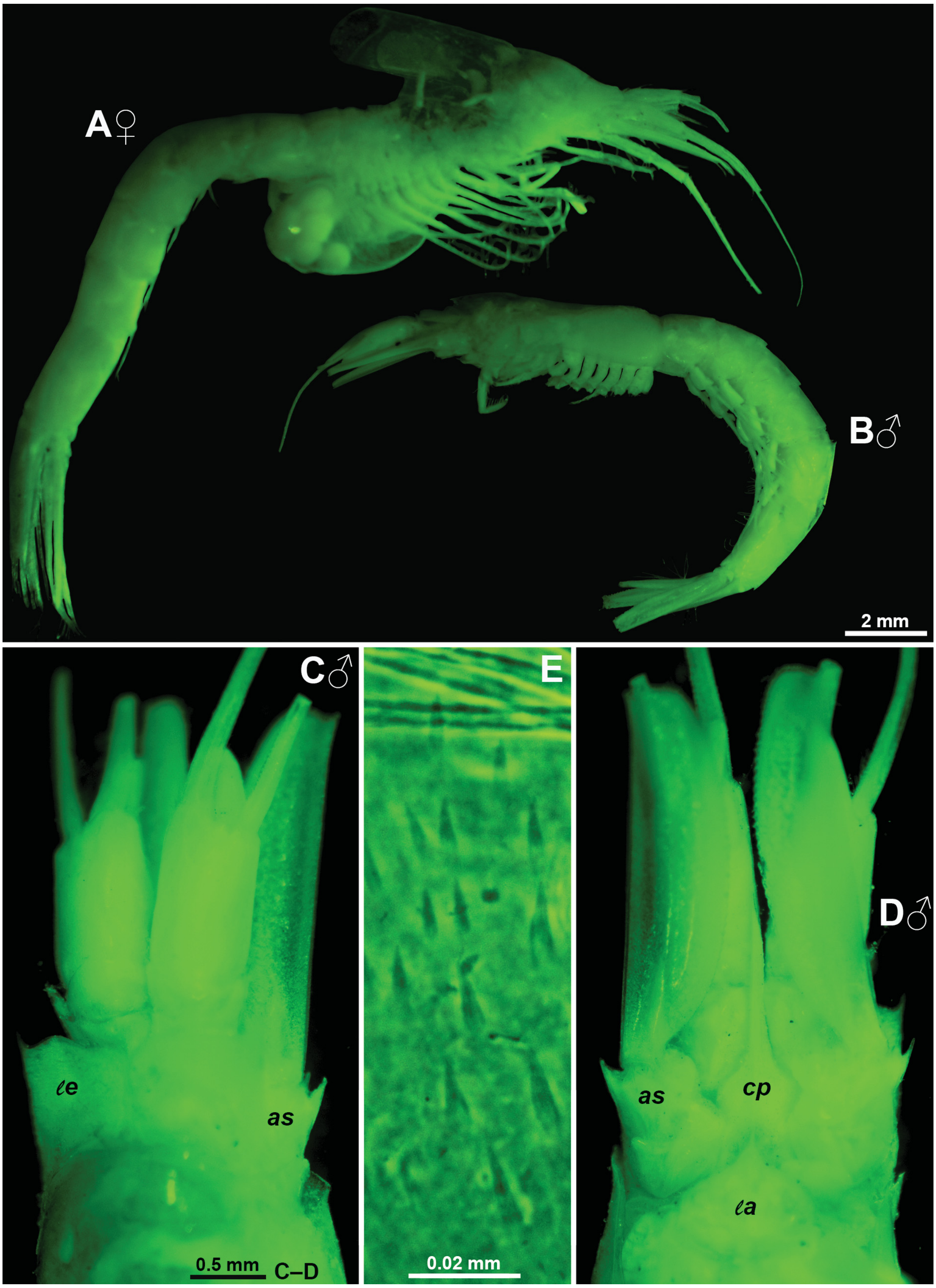

Fig. 45. *Scolamblyops muehlenhardtae* sp. nov., holotype, adult female with BL of 20.1 mm (A, E: ZMH 64686) and paratype, adult male 16.5 mm (B–D: ZMH 64688). **A**. Female holotype in toto, lateral view (carapace accidentally lifted). **B**. Male paratype in toto, lateral view (thoracopods 2–8 broken). **C–D**. Cephalon of male, dorsal (C) and ventral (D) views. **E**. Scales on rostral face of basal lobe of sympod of maxilla. Abbreviations: *as* = antennal sympod; *cp* = clypeus with rostral process; *la* = labrum; *le* = left eye. A–B. Objects artificially separated from background.

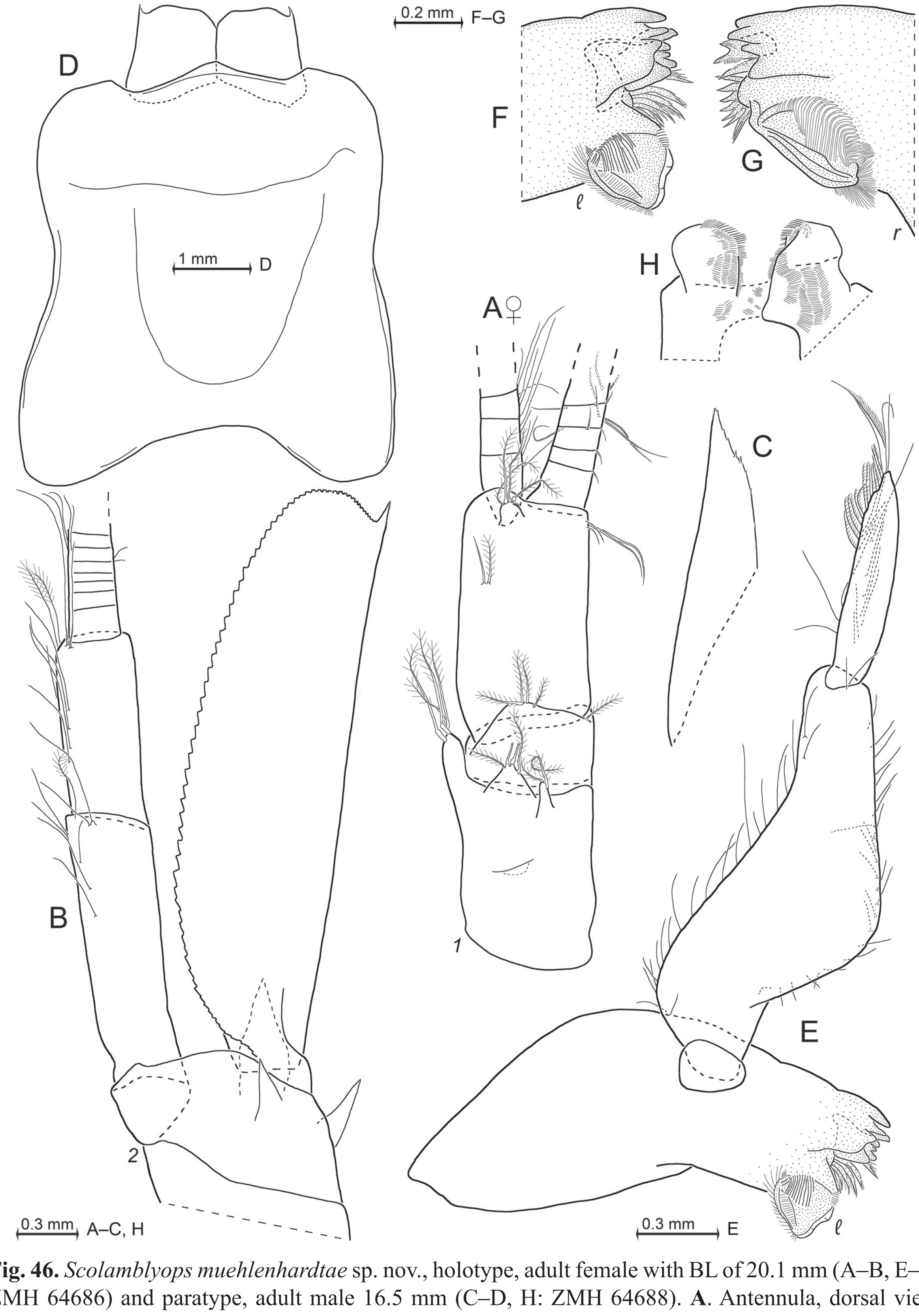

Fig. 46. *Scolamblyops muehlenhardtae* sp. nov., holotype, adult female with BL of 20.1 mm (A–B, E–G: ZMH 64686) and paratype, adult male 16.5 mm (C–D, H: ZMH 64688). **A**. Antennula, dorsal view. **B**. Antenna, dorsal view; setae omitted from antennal scale. **C**. Rostral process of clypeus, lateral view. **D**. Carapace with eyes expanded on slide, dorsal view. **E**. Mandible with left palpus, rostral view. **F–G**. Masticatory part of left (F) and right (G) mandibles, rostral view. **H**. Labium.

setae. Lateral margin of basal segment furnished with longitudinal, comparatively long series of densely set long, fine hairs. Endite terminally with three large, distally spiny (by stiff bristles) setae, in between and more dorsally (on left in Fig. 48B) with four more slender, shorter setae of that kind decreasing in size proximally. Ventral margin with seven barbed setae also decreasing in size proximally. Distal half of endite in addition with 13 smooth setae.

Maxilla (Fig. 48C). Sympod with three mesial, only distally strongly setose lobes plus a less conspicuous more proximal lobe. The latter with field of acute triangular scales (Fig. 45E) on rostral face. Exopod extends shortly beyond basal segment of palp. Exopod with numerous plumose setae all along lateral margin; apical seta longest; no seta on mesial margin except for a medium-sized seta close to disto-mesial edge. Palp with two subequal segments. Basal segment with three barbed, basally thick setae (below drawing plane, visualized by dashed lines in Fig. 48C). Terminally rounded distal segment 1.7 times as long as maximum width; densely setose on distal ⅚, remaining basal portion bare; no spines.

Thoracic sternites (Fig. 48D). Sternite 1 with the usual median lobe contributing to caudal closure of mouth field, no additional median processes, no setae. Sternites 2–8 with groups of 2–5 barbed setae on intersegmental joint with each thoracic sympod, no median processes. Within groups, lateral setae mostly shorter though with longer, more densely set cils compared to setae in more mesial position (Fig. 48F).

Thoracopods (Figs 45A, 48D–E, I–K, 49A–B). Basal plates of exopods 1 and 8 comparatively slender (Fig. 48D); relative width increasing from exopods 1 to 3 and decreasing from 3 to 8. Disto-lateral edge of basal plate in all exopods with tooth-like projection (Fig. 48D). Flagellum of exopods 1 and 8 with 12 segments, flagella 2–7 with 13. Basis of endopod 1 with setose endite (below drawing plane, visualized with dashed lines in Fig. 48D), remaining segments without endite. Endopod 1 strongly setose along mesial margin; disto-lateral edge of basis produced in an acute tooth; lateral margin of basis and ischium without setae; smooth apical nail (Fig. 48E) about as long as propodus. Epipod 1 linguiform (somewhat distorted in Fig. 48D), about as long as combined basis, ischium and merus of endopod 1, no seta. Endopods 1–2 with six segments including basal segment, this last fused with sympod. Endopod 2 with ischium and dactylus strongly setose, remaining segments sparsely setose; dactylus reflexed (Fig. 48I–J), nail smooth, comparatively stout (Fig. 48J). Endopod 2 without endite. Endopod 3 with eight segments (Fig. 49A); its carpopropodus 3-segmented; strongly oblique suture between carpus and 2-segmented propodus; transverse suture between two propodal segments; dactylus slender, hidden in dense brush of setae. Dactyli 1–3 with weakly bent, smooth nail (Figs 48E, J, 49B). Endopods 4–8 broken.

Marsupium (Fig. 48K). Oostegites 1–3 with smooth surface not considering setae; basally with great numbers of setae microserrated by minute acute bristles; no spiniform setae. Dorsal margin of oostegite 1 with tiny hairs along subbasal to apical portions; corresponding stretch bare along ventral margin. Apical portions of oostegite 1 in addition with a few barbed setae. Dorsal margin of oostegite 2 with tiny hairs along subbasal to subapical portions. Distal third of dorsal margin and distal ¾ of ventral margin with dense series of plumose setae; plumose aspect of setae increasing rostrally. Outer face of oostegite 2 with a few short smooth setae. Oostegite 3 with more such setae loosely scattered over outer face. Dorsal margin mostly bare along subbasal to subapical portions. Posterior and ventral (mesial) margins densely furnished with plumose setae interlocking with setae of opposite oostegite.

Pleon (Figs 45A, 49G–I). Pleomeres 1–5 each 0.6 times as long as pleomere 6; this value 1.1 for telson. Scutellum paracaudale triangular with acute apex. Pleopods 1–5 short, increasing in length caudally. Each pleopod widening from basis to roughly ⅔ total length; followed by more slender, straight distal portion. Relative width of distal portion decreasing from pleopod 1 to 5. Setation as in Fig. 49G–I.

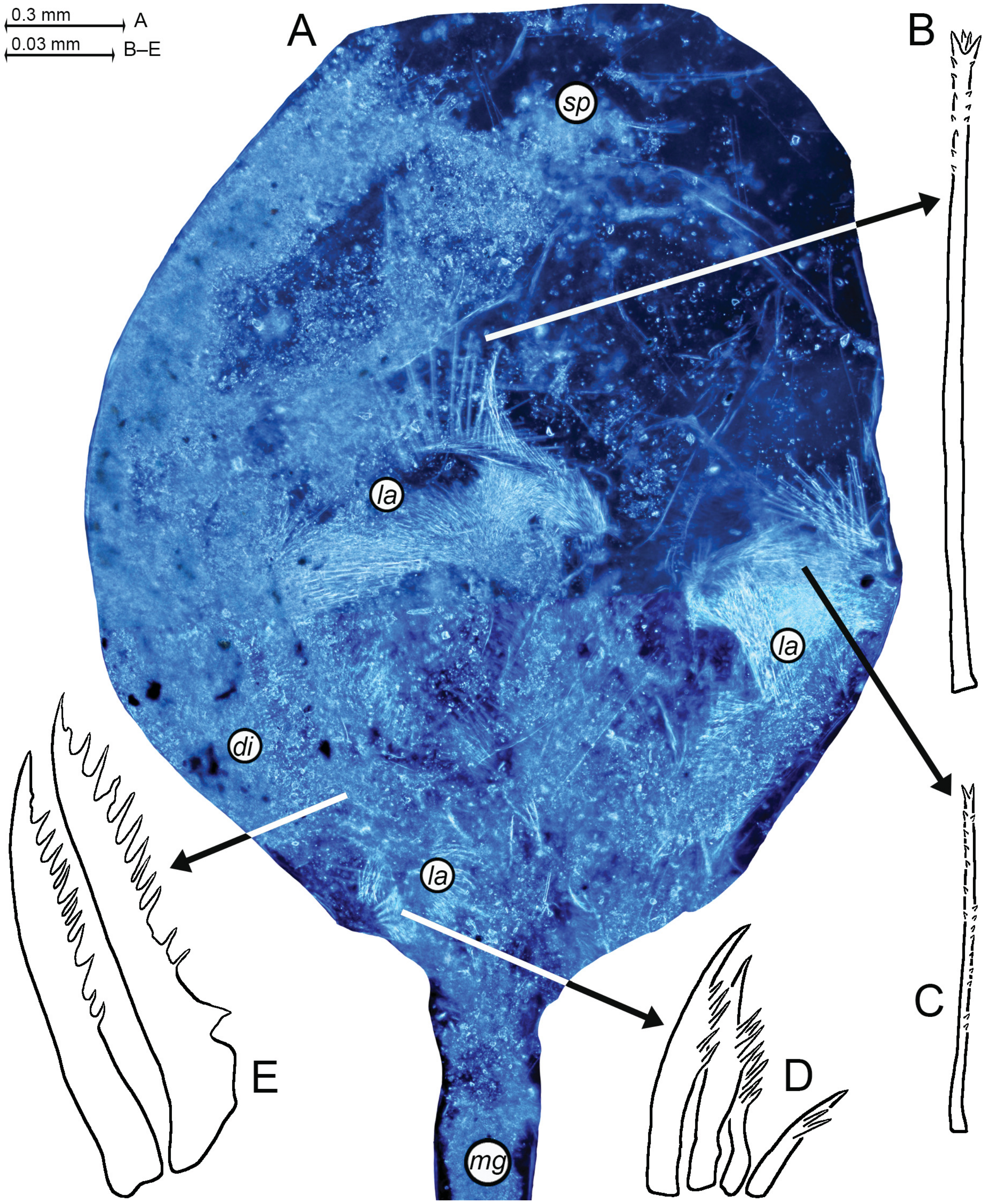

Fig. 47. Foregut in *Scolamblyops muehlenhardtae* sp. nov., holotype, adult female with BL of 20.1 mm (ZMH 64686). **A**. Foregut expanded on slide, dorsal view. **B–E**. Details of A, arrows point to modified spines of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *sp* = storage space. A. Object artificially separated from background.

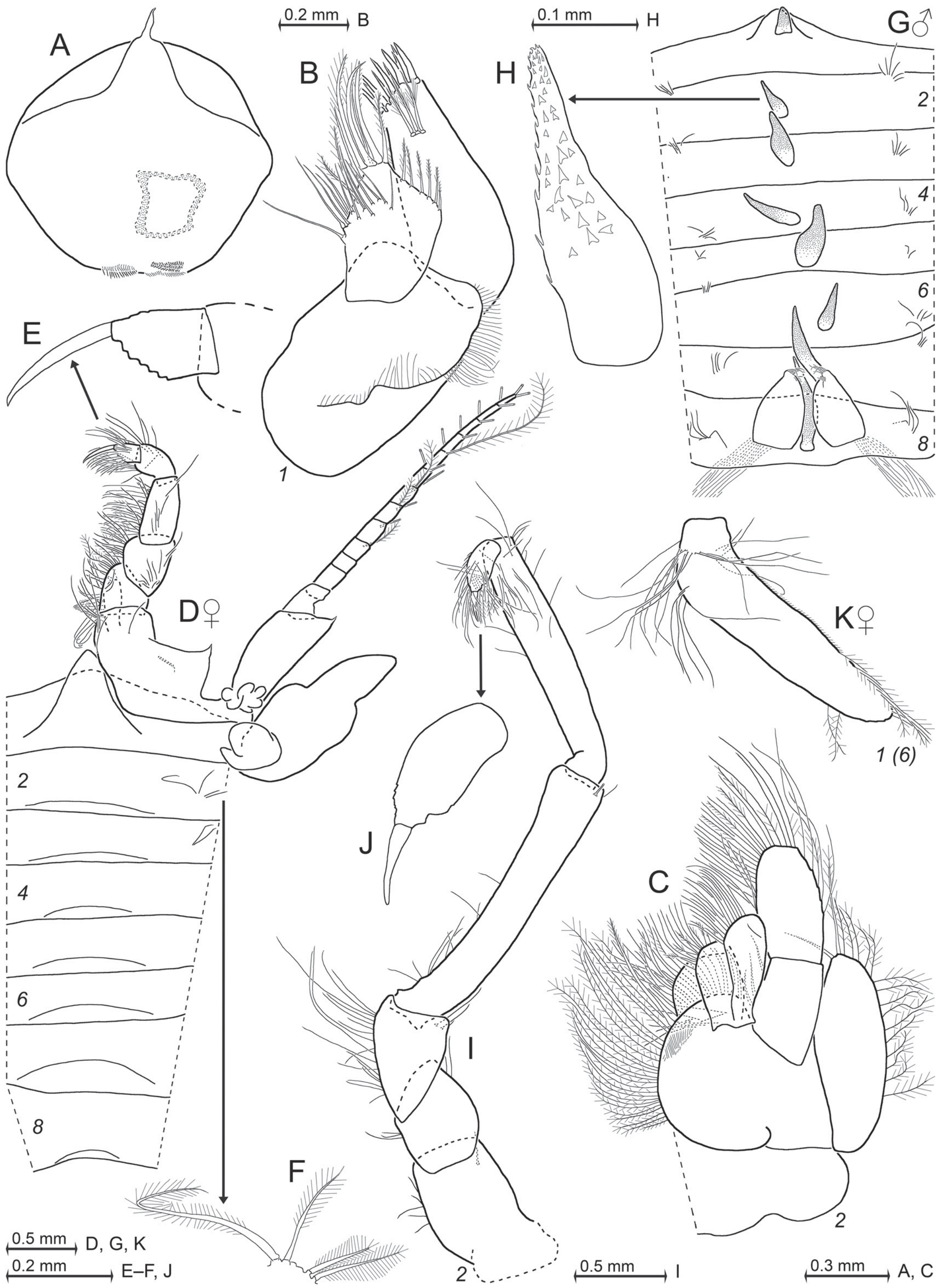

Fig. 48. *Scolamblyops muehlenhardtae* sp. nov., holotype, adult female with BL of 20.1 mm (B–F, I–K: ZMH 64686) and paratype, adult male 16.5 mm (A, G–H: ZMH 64688). **A**. Labrum, ventral = aboral view. **B**. Maxillula, caudal view. **C**. Maxilla, caudal view. **D**. Female thoracic sternites 1–8 (ventral) with thoracopod 1 and epipod 1 (caudal). **E**. Detail of D, showing dactylus with nail, setae omitted. **F**. Detail of D, showing setal group of sternite 2. **G**. Male sternites 1–8 with penes, ventral view. **H**. Detail of G, showing median process from sternite 2. **I**. Thoracic endopod 2, rostral view. **J**. Detail of I, showing dactylus with nail, setae omitted. **K**. Oostegite 1, inner face.

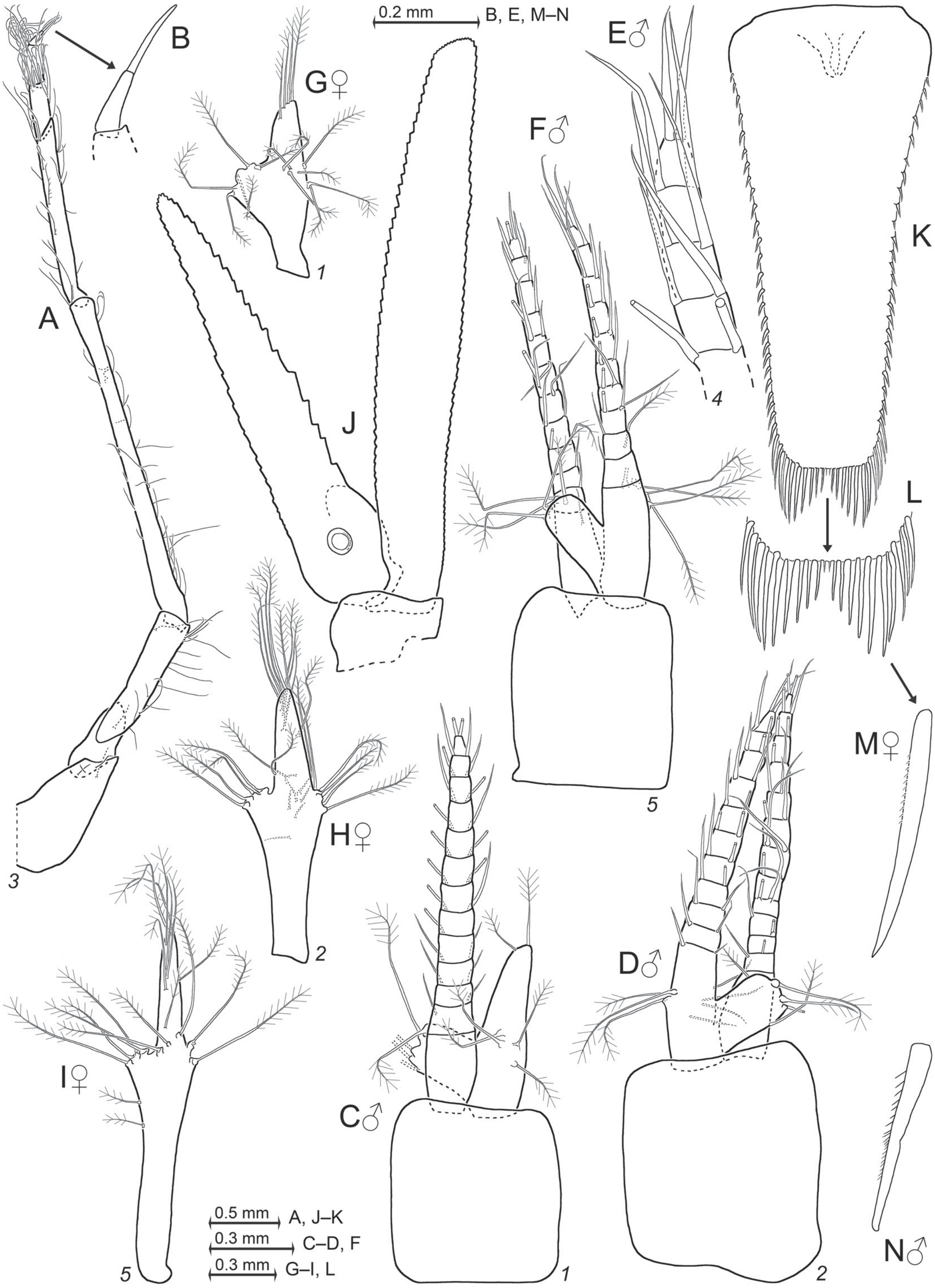

Fig. 49. *Scolamblyops muehlenhardtae* sp. nov., holotype, adult female with BL of 20.1 mm (A–B, G–M: ZMH 64686) and paratype, adult male 16.5 mm (C–F, N: ZMH 64688). **A**. Thoracic endopod 3 with part of sympod, caudal view. **B**. Detail of A, showing dactylus with nail, setae omitted. **C**. Male pleopod 1, caudal view. **D**. Male pleopod 2, rostral view. **E**. Distal fourth of endopod of male pleopod 4, rostral view. **F**. Male pleopod 5, rostral view. **G**. Female pleopod 1, rostral view. **H**. Female pleopod 2, caudal view. **I**. Female pleopod 5, rostral view. **J**. Uropods, ventral, setae omitted. **K**. Telson, dorsal view. **L**. Detail of K, showing terminus of telson. **M–N**. Terminal spines of telson in female (M) and male (N).

Tail fan (Fig. 49J–M). Statoliths composed of fluorite, diameter 0.13–0.16 mm (n = 2). Telson (Fig. 49K–M) with total of 74 spines, including 30 spines of various size on each lateral margin, no pores and no scales detected. Each margin with basal 24 lateral spines slightly discontinuously, weakly increasing in size distally, adjoining six lateral spines strongly increasing distally. Transverse terminal margin with pair of minute paramedian spines flanked by six large spines on each side. Most terminal spines smooth, a few rugged due to minute bristles (Fig. 49M) along subbasal to submedian portions.

Paratype (♂)

All male features as in specific diagnosis. Body length 16.5 mm. Rostrum contributes 1% to BL, thorax 30%, pleon 53%, telson 16% and carapace without rostrum 28%. Appendix masculina well developed.

Thorax (Fig. 48G–H). Each thoracic sternite with one sub-conical to pyriform median process (Fig. 48G). Distal ⅗–⅘ of processes with acute triangular scales (Fig. 48H) increasing in numbers while decreasing in size towards tip. Average size and structure of scales about same as on sympod of maxilla (Fig. 45E). Sternites 2–8 with groups of 2–6 barbed setae (Fig. 48G) on intersegmental joint with respective thoracic sympod; structure of setae as in holotype (Fig. 48F). Penes (Fig. 48G) short, sub-conical, stouter than sternal processes. Penes apically trilobate, with two subapical and six apical, short setae.

Pleon (Figs 45B, 49C–F). Pleomeres 1–5 are 0.5, 0.4, 0.4, 0.4 and 0.5 times as long as pleomere 6, respectively; this value 1.0 for telson. Exopod of pleopods 1–5 and endopods 2–5 subequal (Fig. 49C–D, F), endopod 1 (Fig. 49C) much shorter, unsegmented. All sympods sub-quadrate, without setae. Sympod 2 larger than remaining sympods. All pseudobranchial lobes, entire endopod 1, basal ¼ of endopods 2–5 and all exopods with barbed setae. Distal ¾ of endopods 2–5 and all exopods with on average shorter, smooth setae. These setae slightly modified (thicker) on distal six segments of endopod 4, two setae of that type per segment (Fig. 49E). Compared with modified setae on endopod 4 of *Amphiakrops brandtae* gen. et sp. nov. (Fig. 61D), corresponding setae of *S. muehlenhardtae* sp. nov. (Fig. 49E) thinner and not overlapping like roofing tiles.

Tail fan (Figs 45B, 49N). Telson with total of 52 spines, including 19–21 spines of various sizes on lateral margins, no pores detected. Each lateral margin with 18–20 spines somewhat discontinuously increasing in size distally. Transverse terminal margin with pair of minute paramedian spines flanked by five pairs of larger spines continuously increasing in size laterally. Terminal spines rugged due to minute bristles (Fig. 49N) along subbasal to subapical portions; clearly with more and larger bristles compared with those of female holotype (Fig. 49M).

Genus ***Stellamblyops*** Petryashov & Frutos, 2017

Stellamblyops Petryashov & Frutos, 2017: 405.

Stellamblyops – Mees & Meland 2024: AphiaID 1246750 (accepted).

Type species

Stellamblyops vassilenkoae Petryashov & Frutos, 2017, by original designation.

Revised diagnosis

Diagnosis by Petryashov & Frutos (2017) based on both sexes, here revised for inclusion of *S. doryphorus* sp. nov. Eye rudiments separate, without stalks, positioned laterally, not connected by membranous integument, each reduced to roughly triangular pad with tooth-like, non-sensory distal projection extending beyond median segment of antennular trunk; visual elements strongly reduced, no ocular papilla. Antennular trunk 3-segmented; weakly oblique articulation between median and terminal segment. Antennal scale with bare lateral margin and setose mesial margin. Antennal peduncle with three segments lined in a single plane and separated by transverse articulations. Clypeus with long, unpaired anterior process. Labrum normal, without spiniform rostral process. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile. Female pleopods representing setose rods with residual differentiation of pseudobranchial lobe. Male pleopods biramous, with well-developed sympod and multi-segmented exopod. Endopod 1 short, unsegmented; endopods 2–5 long, multi-segmented; all endopods with small pseudobranchial lobe. Uropods undivided, setose. Telson elongate linguiform with lateral constriction, minimum width at about ⅓ of length from terminus. Telson mid-terminally with small rounded indentation or with distinct, proximally rounded cleft, in any case lined with small laminae and flanked by large spines, no setae; terminal spines with size not increasing in continuous series laterally.

Species included

– *S. vassilenkoae* Petryashov & Frutos, 2017 from the NW Pacific: Kurile-Kamchatka Trench area, Kurile Basin of the Sea of Okhotsk, 41–46° N, 151–157° E, depth 3371–5429 m (Petryashov & Frutos 2017)
– *S. doryphorus* sp. nov. from the Southern Ocean: Weddell Abyssal Plain, Drake Passage, 59–67° S, 0–60° W, depth 2372–4678 m

Stellamblyops doryphorus sp. nov.
urn:lsid:zoobank.org:act:D6415EFD-FF66-4C08-8041-910A2B7AC5F6
Figs 50–53

Diagnosis

Based on subadult females only. All features matching generic diagnosis. Rostrum triangular, short, not reaching beyond proximal half of basal segment of antennular trunk. Eye rudiments elongate tear-shaped with finger-like distal process extending beyond median segment of antennular trunk. Eyes disto-laterally positioned, dorsoventrally weakly flattened, near basis 1.3–1.5 times as wide as thick; basis inside with bulbous, well-delimited corneal rudiment containing numerous reduced ommatidia not reaching surface. Antennular trunk without ventral carina. Antennal sympod with three teeth near insertion of scale. Antennal scale extending far beyond antennular trunk (tip of scale unknown). Clypeus with strong median process extending to second segment of antennular trunk or beyond. Rostral margin of labrum triangular with blunt tip. Female pleopods 3–4 rod-like, with residual differentiation of pseudobranchial lobe. Uropods without spine. Telson elongate linguiform, waisted, with minimum width at ⅓ of length from terminus. Lateral margins with spines along distal ⅔; spines increasing in length distally. Mid-terminal notch with four small laminae (toothlets) flanked by three pairs of spines, also larger than disto-lateral spines. Telson with total of ≈40 spines and four laminae, no setae.

Etymology

The species name is the transliterated Ancient Greek adjective ‘δορυφόρος’ (‘spear-bearing’) with Latinized masculine ending, related to the large rostral process of the clypeus.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ subad. (BL = 8.1 mm, on slides); eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, ANDEEP-III station 059-5; 67°29.74′ S, 00°01.93′ W to 67°29.61′ S, 00°02.19′ W; depth 4655–4655 m; 14 Feb. 2005; EBS supranet; ZMH 64690.

Paratypes

SOUTHERN OCEAN • 1 juv. (BL = 4.8 mm); northern Weddell Abyssal Plain, ANDEEP-II station 135-4; 65°00.06′ S, 43°01.19′ W to 64°59.97′ S, 43°00.91′ W; depth 4677.6–4678.2 m; 11 Mar. 2002; EBS supranet; ZMH 64692 • 1 ♀ subad. (tailfan broken, estimated BL ≈ 8.6 mm); Drake Passage, NW of Elephant Island, ANDEEP-I station 041-3; 59°22.24′ S, 60°04.06′ W to 59°22.40′ S, 60°03.99′ W; depth 2375–2372 m; 26 Jan. 2002; EBS epinet; ZMH 64691.

Type locality and distribution

The type locality is ANDEEP III station 059-5: eastern Weddell Abyssal Plain, S of Maud Rise and E of Sanae Canyon, 67°29.74′ S, 00°01.93′ W to 67°29.61′ S, 00°02.19′ W, depth 4655 m. This species was also recorded in the deep waters of the Drake Passage. Total ranges 59° S–67° S, 00°–60° W, depth 2372–4678 m.

Description

Holotype (♀)

All features as in specific diagnosis. Body length 8.1 mm. Rostrum contributes 2% to BL, carapace without rostrum 31%, thorax 34%, pleon 44% and telson 20%. Rostrum right-angled triangular with acute tip (Fig. 51B). Disto-lateral edges of carapace with small, tooth-like projection (Fig. 51B). Most of carapace surface ornamented by minute depressions as in Fig. 50D, no pores detected. Eye rudiments without pigment; long rostral process extending to distal segment of antennular trunk (Fig. 50A–B); no pores, no organ of Bellonci. Rostral process of clypeus (Fig. 50B) spit-like in dorsal view, blade-like with distally converging margins in lateral view.

ANTENNULA (Fig. 50A–B). Trunk dorsoventrally compressed with distally decreasing thickness (Fig. 50A), basal segment 1.4 times as wide as thick, terminal segment 2.4 times. Terminal segment of left and right trunks with artificial transverse fold (not present in paratypes) feigning an additional segmentation in Fig. 50A–B. Basal segment with disto-lateral, setose lobe extending beyond proximal half of median segment. No antennular bursa detected. Segmental border between median and terminal segment oblique in dorsal view, to a minor degree also in lateral view; distal portion of median segment dorsally overlapping part of terminal segment. Terminal segment with four barbed setae on disto-median lobe, no tooth. Basal portions of both flagella with about same width.

ANTENNA (Fig. 51A). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Sympod with a strong tooth (dashed line in Fig. 51A) dorsally above basis of scale, another strong tooth (solid line) proximally accompanied by smaller tooth ventrally near disto-lateral edge of sympod. Peduncle 3-segmented, its basal segment contributes 14%, median segment 49% and terminal segment 37% to total length. Basal segment bare, median and terminal segments each with a few barbed setae near distal margin.

PRIMARY MOUTHPARTS (Figs 51C–E, 53A–B). Labrum and labium normal (Fig. 53A–B). Mandibular palp (Fig. 51C) with basal segment contributing 6%, median segment 62% and terminal segment 32% to total palp length. Palp not hispid, its basal segment without setae. Length of median segment four times maximum width, its mesial margin convex, lateral margin sigmoid, densely setose along mesial and lateral margins. Terminal segment seven times as long as broad and 0.6 times as long as median segment. Terminal segment comparatively sparsely setose along lateral margins, though with dense series of short microserrated setae on tip. Right mandible (Fig. 51D) with four large teeth on pars incisiva and with only two large teeth, each serrated by small secondary teeth, on digitus mobilis. Pars centralis modified, with distally serrated, broad tooth-like spines proximally followed by continuous series of nine smooth, subtriangular spines decreasing in size proximally. Processus molaris also modified, with series of 13 teeth, median teeth longest. Left mandible (Fig. 51E) almost normal, pars incisiva with three large teeth,

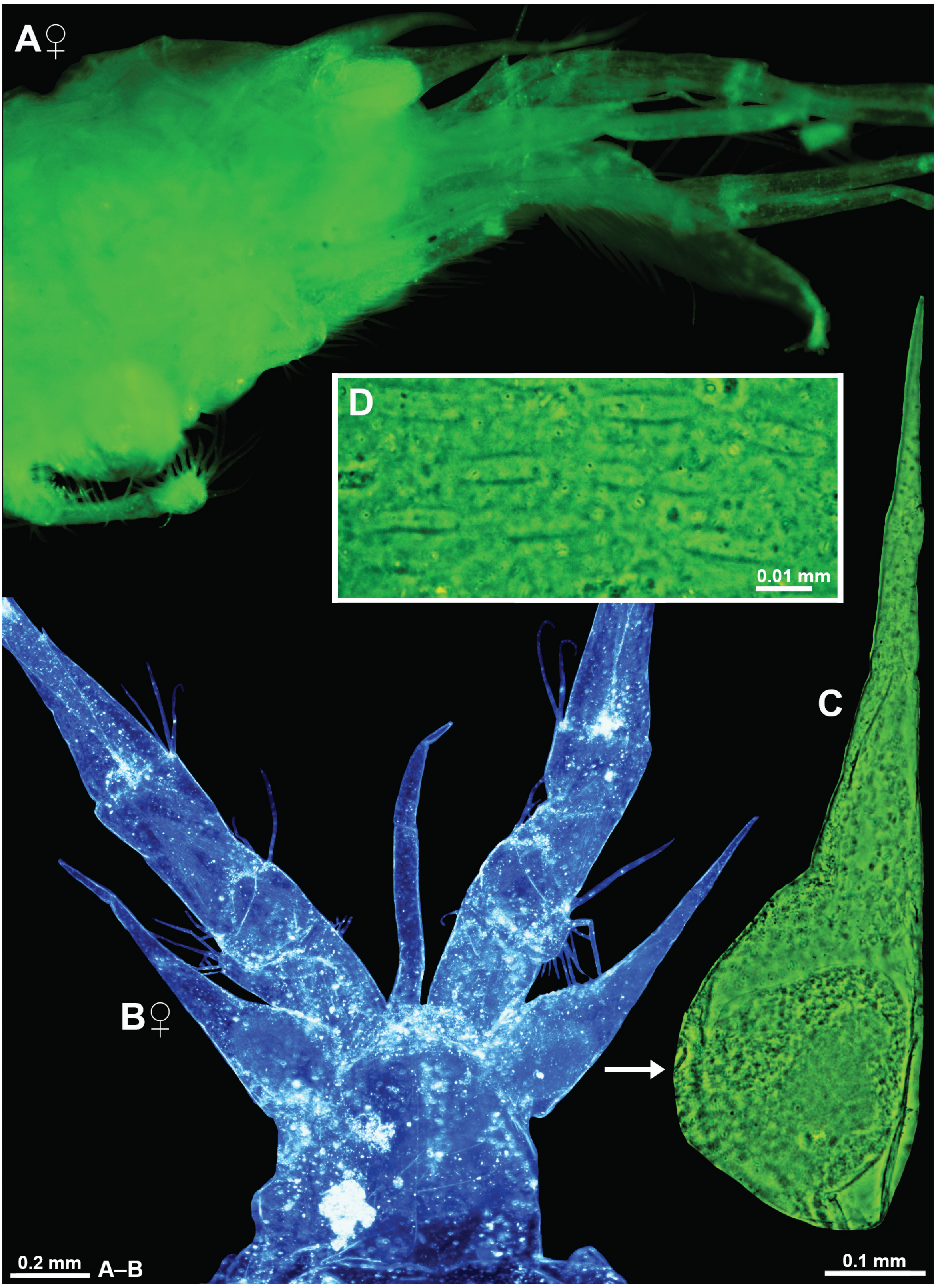

Fig. 50. *Stellamblyops doryphorus* sp. nov., holotype, subadult female with BL of 8.1 mm (ZMH 64690). **A**. Cephalon prior to dissection, lateral view. **B**. Cephalon mounted on slide, ventral view, antennae removed. **C**. Detail of B, showing right eye. **D**. Ornamentation of carapace surface. A–C. Objects artificially separated from background.

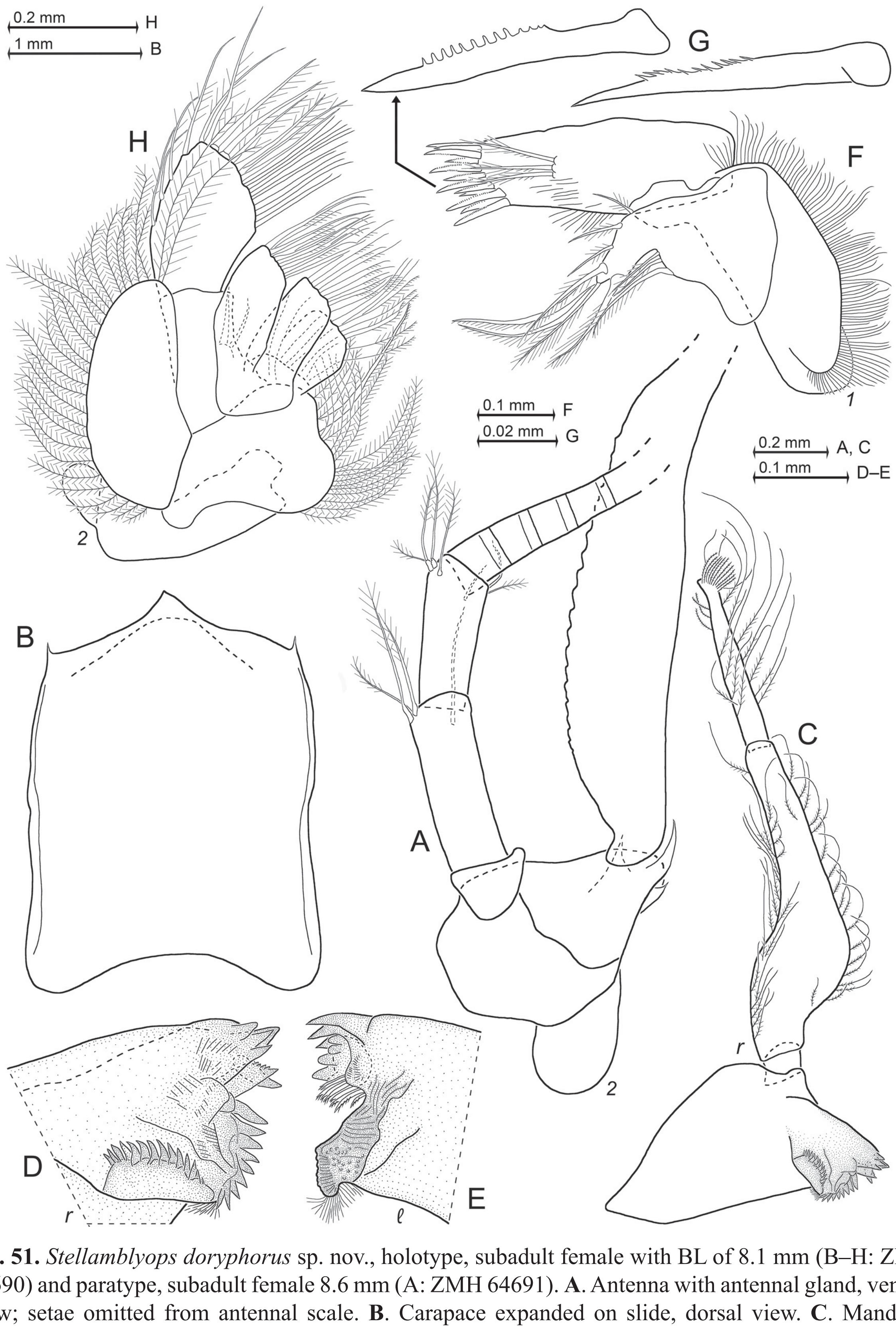

Fig. 51. *Stellamblyops doryphorus* sp. nov., holotype, subadult female with BL of 8.1 mm (B–H: ZMH 64690) and paratype, subadult female 8.6 mm (A: ZMH 64691). **A**. Antenna with antennal gland, ventral view; setae omitted from antennal scale. **B**. Carapace expanded on slide, dorsal view. **C**. Mandible with right palpus, caudal view. **D–E**. Masticatory part of right (D) and left (E) mandibles, caudal view. **F**. Maxillula, caudal view. **G**. Details of F, showing two examples of serrated spines. **H**. Maxilla, caudal view.

digitus mobilis with five large, blunt, distal processes (one of which below drawing plane in Fig. 51E). Pars centralis with seven slender spines bearing stiff bristles. Processus molaris with strong grinding lamellae not ending in teeth. Processus molaris of left mandible with bundle of stiff bristles on proximal edge. Right mandible with such a bundle on lateral margin of processus molaris.

Gut (Fig. 52). Foregut, not considering its artificial deformation (Fig. 52A), most similar to that of *Scolamblyops muehlenhardtae* sp. nov. (Fig. 47). Posterior part of lateralia (accidentally shifted caudally) in *Stellamblyops doryphorus* sp. nov. with complex of at least eight toothed spines of various sizes (Fig. 52D; potential additional spines poorly differentiated due to superposition in optical path. Dissected foregut with almost empty storage volume, midgut completely filled with finely masticated material. Anal lobe distinct, weakly cuticularized.

Maxillula (Fig. 51F–G). Distal segment with eleven strong spines on transverse terminal margin; most distal spine smooth, remaining spines unilaterally serrated, armed with acute to blunt micro-teeth

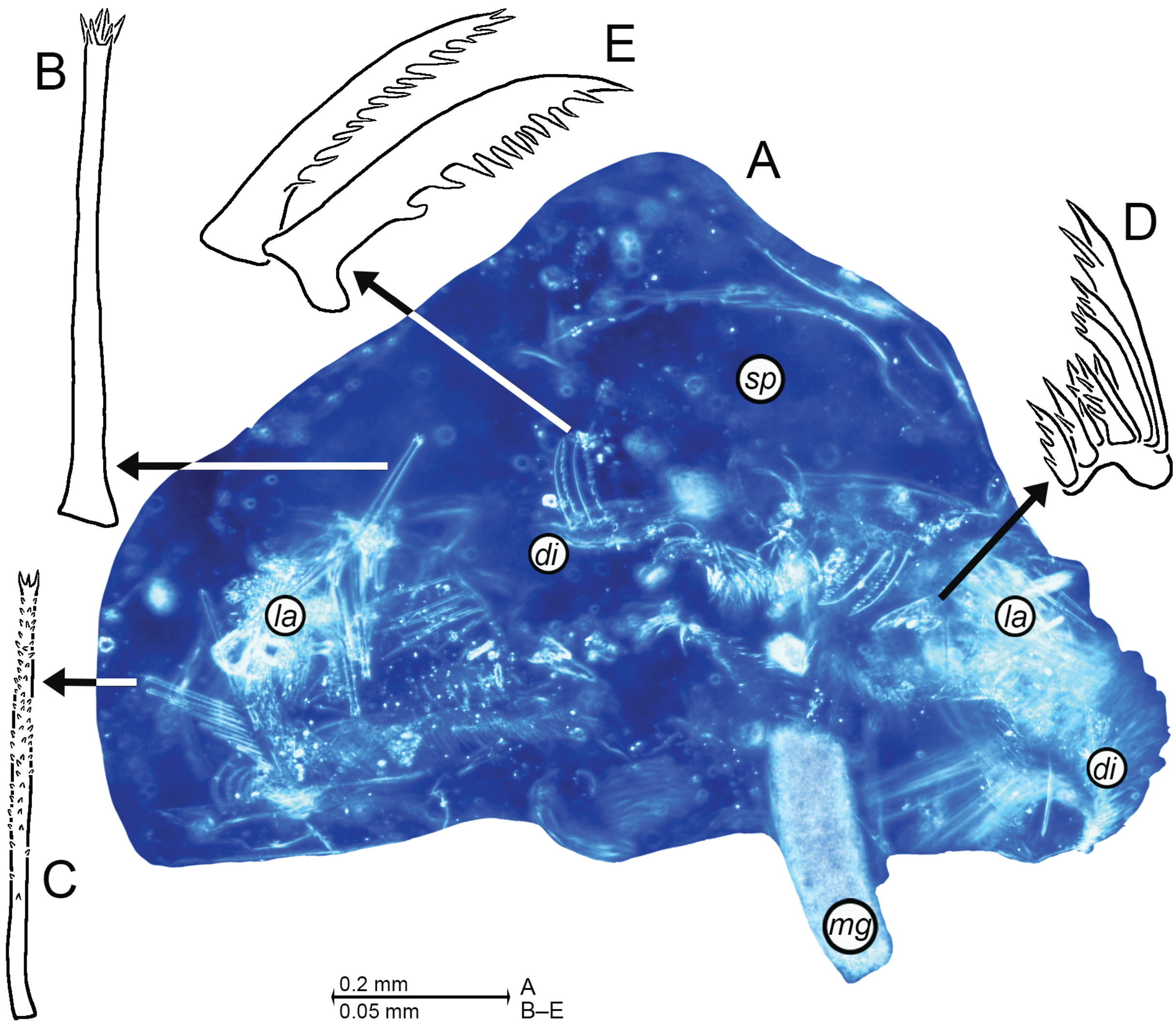

Fig. 52. Foregut in *Stellamblyops doryphorus* sp. nov., holotype, subadult female with BL of 8.1 mm (ZMH 64690). **A**. Foregut expanded on slide, dorsal view. **B–E**. Details of A, arrows point to modified spines of foregut. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *sp* = storage space. A. Foregut deformed, large portions of lateralia accidentally shifted caudally; object artificially separated from background.

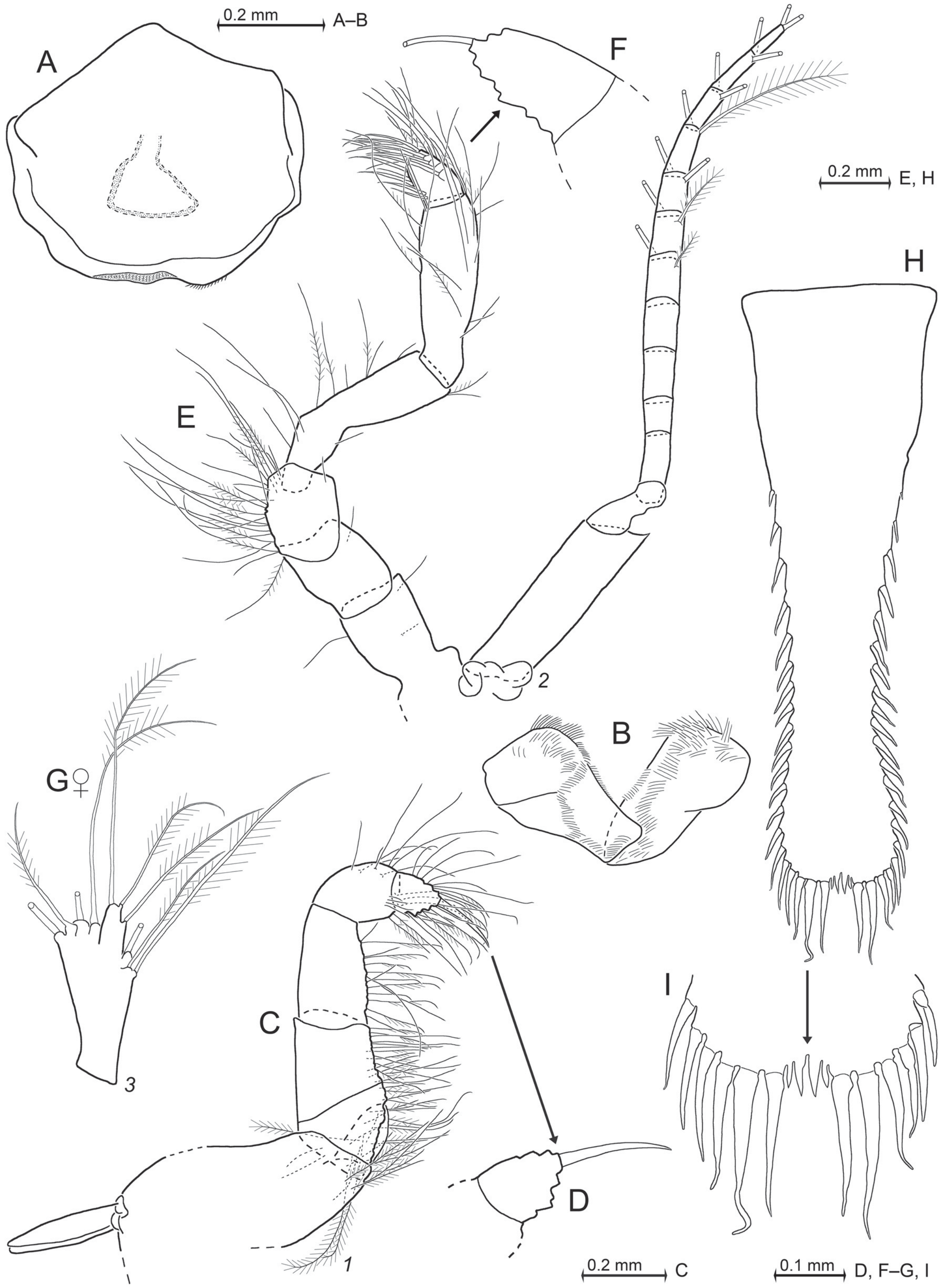

Fig. 53. *Stellamblyops doryphorus* sp. nov., holotype, subadult female with BL of 8.1 mm (ZMH 64690). **A**. Labrum, ventral = aboral view. **B**. Labium. **C**. Thoracic endopod 1 with epipod 1, caudal view (exopod broken). **D**. Detail of C, showing dactylus with nail, setae omitted. **E**. Thoracopod 2, rostral view. **F**. Detail of E, showing dactylus with nail (tip broken), setae omitted. **G**. Right pleopod 3, mesial face. **H**. Telson, dorsal view. **I**. Detail of H, showing terminus of telson.

(examples in Fig. 51G). This segment subterminally with three setae bearing long stiff barbs. Lateral margin of basal segment furnished with longitudinal, comparatively long series of densely set, long hairs. Endite terminally with two large, distally spiny (due to stiff bristles) setae flanked by several less strong, shorter setae.

Maxilla (Fig. 51H). Sympod with three mesial, only distally strongly setose lobes. Additional mesial bulge short, not clearly classified as lobe. Exopod extends shortly beyond basal segment of palp. Exopod with numerous plumose setae all along lateral margin; tip with two large plumose setae almost twice as long as largest lateral setae, mesial margin bare. Palp with two subequal segments. Apical segment 1.6 times as long as maximum width. Basal segment less wide, bearing two barbed, basally thick setae (below drawing plane, visualized by dashed lines in Fig. 51H). Obliquely transverse distal margin of apical segment densely setose, lateral margin with only four barbed setae, mesial margin bare, no spines.

Thoracopods (Fig. 53C–F). Basal plates of thoracic exopods 1–2 and 8 slender, disto-lateral edge with tooth-like projection (Fig. 53E); remaining exopods broken. Flagellum of exopod 1 with ten segments, exopods 2 and 8 each with eleven. Basis of thoracic endopod 1 with setose endite (mostly below drawing plane in Fig. 53C), remaining segments without endite. Endopod 1 strongly setose along mesial margin; merus and carpus without setae on lateral margin; smooth apical nail (Fig. 53D) slightly longer than propodus. Epipod 1 linguiform, only about as long as carpus of endopod 1, no seta. Endopod 2 (Fig. 53E) with six segments including basal segment, the latter fused with sympod; ischium and dactylus strongly setose, remaining segments sparsely setose; dactylus not reflexed, nail smooth, slender (tip of nail broken, Fig. 53F); no endite. Thoracic endopods 3–8 broken.

Pleon and tail fan (Fig. 53G–I). Pleomeres 1–5 are 0.5, 0.5, 0.5, 0.5 and 0.7 times as long as pleomere 6, respectively; this value 1.7 for telson. Subadult female pleopods 3–4 short, distally widening, with setation as in Fig. 53G; remaining pleopods broken. Uropods with setose lateral margins, no spines, but tips of all available uropods broken. Statoliths not preserved. Telson (Fig. 53H) with total of 40 spines, including 17 spines on each lateral margin, 2 × 3 large, in part (artificially?) limp spines on transverse terminal margin; no pores and no scales detected. Notch with pair of small paramedian laminae flanked by a pair of even smaller laminae.

Paratypes

Carapace length about one third of BL. Antennular trunk clearly 3-segmented, terminal segment without artificial fold in both paratypes (unlike holotype in Fig. 50B).

Schizurakrops gen. nov.

urn:lsid:zoobank.org:act:4AF77738-BAF1-4A19-BFDC-D735B03FBAD5

Type species

Schizurakrops meesi gen. et sp. nov. by monotypy and present designation.

Diagnosis

Based on adult female. Carapace anteriorly produced into large, spearhead-like rostrum. Eye rudiments set apart, not connected by membranous integument; dorsoventrally strongly flattened, with one acute distal projection from disto-lateral edge, no visual elements, no ocular papilla. Three segments of the antennular trunk separated by transverse articulations. Antennal peduncle with three segments lined in a single plane. Antennal scale not subdivided, without terminal lobe; mesial margin setose; bare portion of lateral margin ending in a single, strong tooth. Clypeus with unpaired median, blade-like anterior process. Labrum normal, anteriorly rounded; no longitudinal ridge. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile. Three pairs of oostegites contributing to wall of marsupium.

Female pleopods reduced to setose rods with residual differentiation of pseudobranchial lobe. Uropods undivided, setose. Telson elongate, roughly trapeziform, with deep apical incision lined with laminae, no seta. Disto-lateral lobes with spines on narrowly transverse terminal margin.

Etymology

The genus name is a noun with Greek masculine ending, condensed from the Ancient Greek verb 'σχίζω' ('divide'), noun 'οὐρά' ('tail'), adjective 'ἀκρος' ('acute') and noun 'ὤψ' ('eye'), referring to the cleft telson in combination with rostrally acute eye rudiments.

Schizurakrops meesi gen. et sp. nov.
urn:lsid:zoobank.org:act:A99E05AD-A910-483E-B6EE-B03FB5C839DE
Figs 54–57

Diagnosis

Based on adult female only. All features as in generic diagnosis. Rostrum reaching beyond antennal scale. Eye rudiments with strong tooth-like anterior projection extending beyond basal segment of antennular trunk; this segment without ventral carina. Antennal sympod with three teeth near disto-lateral edge; median segment of peduncle five times as long as basal segment; scale length four times as long as maximum width. Blade-like extension of clypeus proceeds anteriorly between antennae up to end of second segment of antennular trunk. Uropods without spine. Telson trapezoid not considering terminal incision. Terminal incision $\frac{1}{7}$ of telson length, lined all along with densely-set, slender laminae. Lateral margins distally converging; basal $\frac{3}{10}$ bare except for small stand-alone spine at $\frac{1}{5}$ of telson length from basis; distal $\frac{7}{10}$ with discontinuous series of large spines with 1–2 small spines in between; large spines increasing in length distally. Each disto-lateral lobe with two spines, outer spine $\frac{2}{3}$ length of incision, inner spine $\frac{1}{3}$. Telson with total of ≈34 spines and ≈35 laminae, no setae.

Etymology

The species name is a noun with Latinized masculine ending in genitive singular, dedicated to Jan Mees in recognition of his important contributions to the taxonomy and ecology of mysids.

Material examined

Holotype

SOUTHERN OCEAN • 1 ov. ♀ ad. (BL = 13.8 mm, on slides); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 150-6; 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W; depth 1996–1993 m; 20 Mar. 2005; EBS epinet; ZMH 64685.

Type locality

The type locality is ANDEEP III station 150-6: Powell Basin, SW continental slope of South Orkney Islands, 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W, depth 1996–1993 m.

Description

Holotype (♀)

All features as in specific diagnosis. Female with BL 13.8 mm carried eleven eggs with a diameter 0.64–0.67 mm. Rostrum contributing 11% to BL, carapace 26% (without rostrum), thorax 29%, pleon 44% and telson 16%. Carapace with smooth surface, disto-lateral edges well rounded (Fig. 55D), no pores. Eye rudiments (Fig. 55A) dorsoventrally compressed by a factor of 4.7, without pigment, no pores, no organ of Bellonci.

Antennula (Figs 54A, 55A). Basal segment of trunk with disto-lateral, setose lobe extending beyond proximal half of median segment. Basal and median segments each with dorsal apophysis bearing a few setae on tip. Terminal segment about as long as combined median and basal segments (not counting apophyses). Terminal segment with disto-median lobe armed with three barbed setae and with three teeth, teeth increasing in length laterally (as in Fig. 33C). Basal portion of mesial flagellum 0.8 times as wide as base of lateral flagellum.

Antenna (Fig. 55B). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Sympod with two strong teeth, one above and one below basis of antennal scale, a third strong tooth on disto-lateral edge; distally rounded, linguiform lobe mesially positioned near peduncle. Peduncle 3-segmented, its basal segment contributing 11%, median segment 60% and terminal segment 30% to

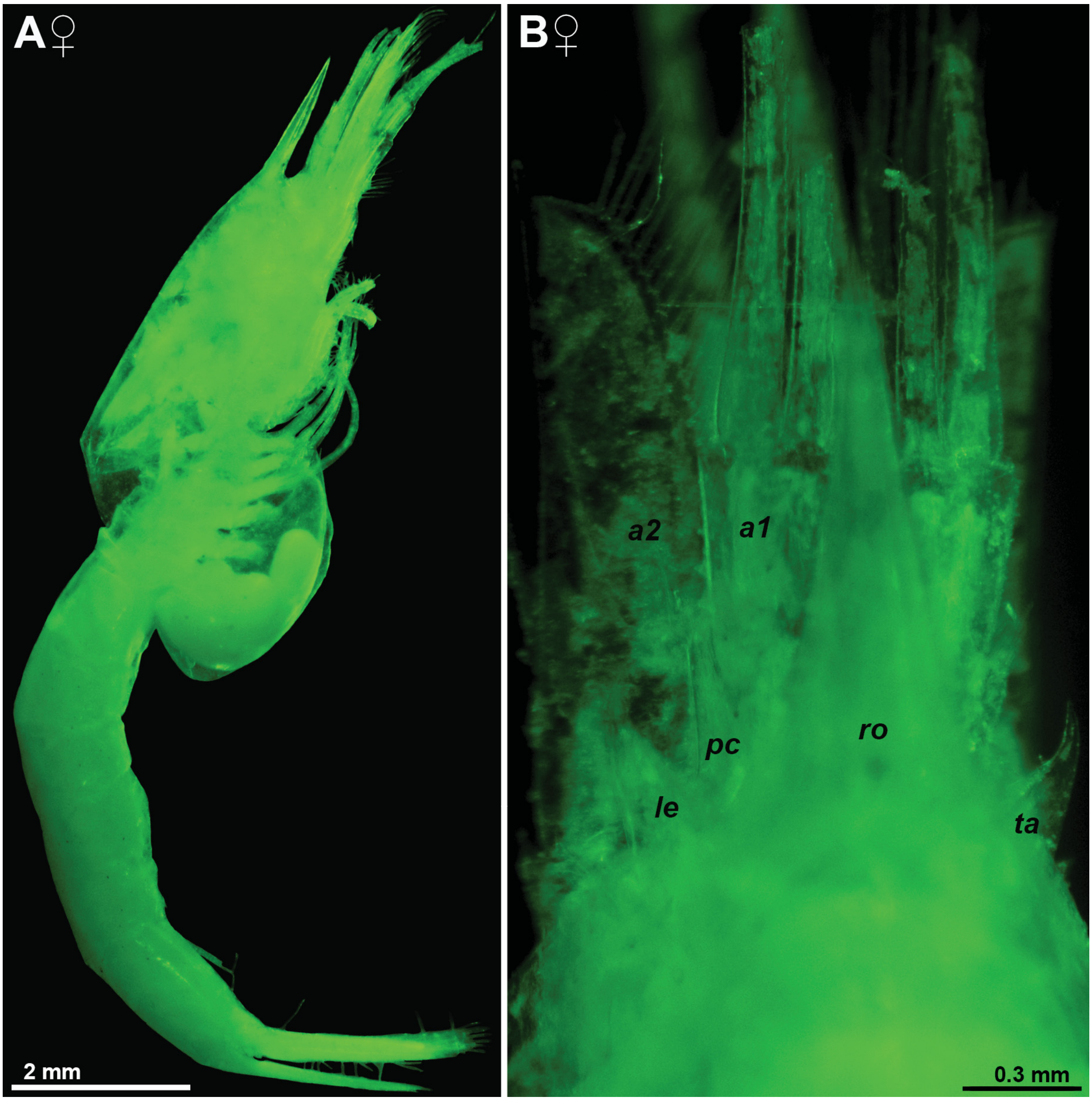

Fig. 54. *Schizurakrops meesi* gen. et sp. nov., holotype, adult female with BL of 13.8 mm (ZMH 64685). **A**. Holotype in toto, lateral view; accidental incomplete rupture between thoracomeres 2 and 3. **B**. Cephalon, obliquely dorsal, inclined to the right. Abbreviations: *a1* = antennula; *a2* = antenna; *le* = left eye rudiment; *pc* = rostral process of clypeus; *ro* = rostrum; *ta* = tooth-like extension of antennal sympod. A. Object artificially separated from background.

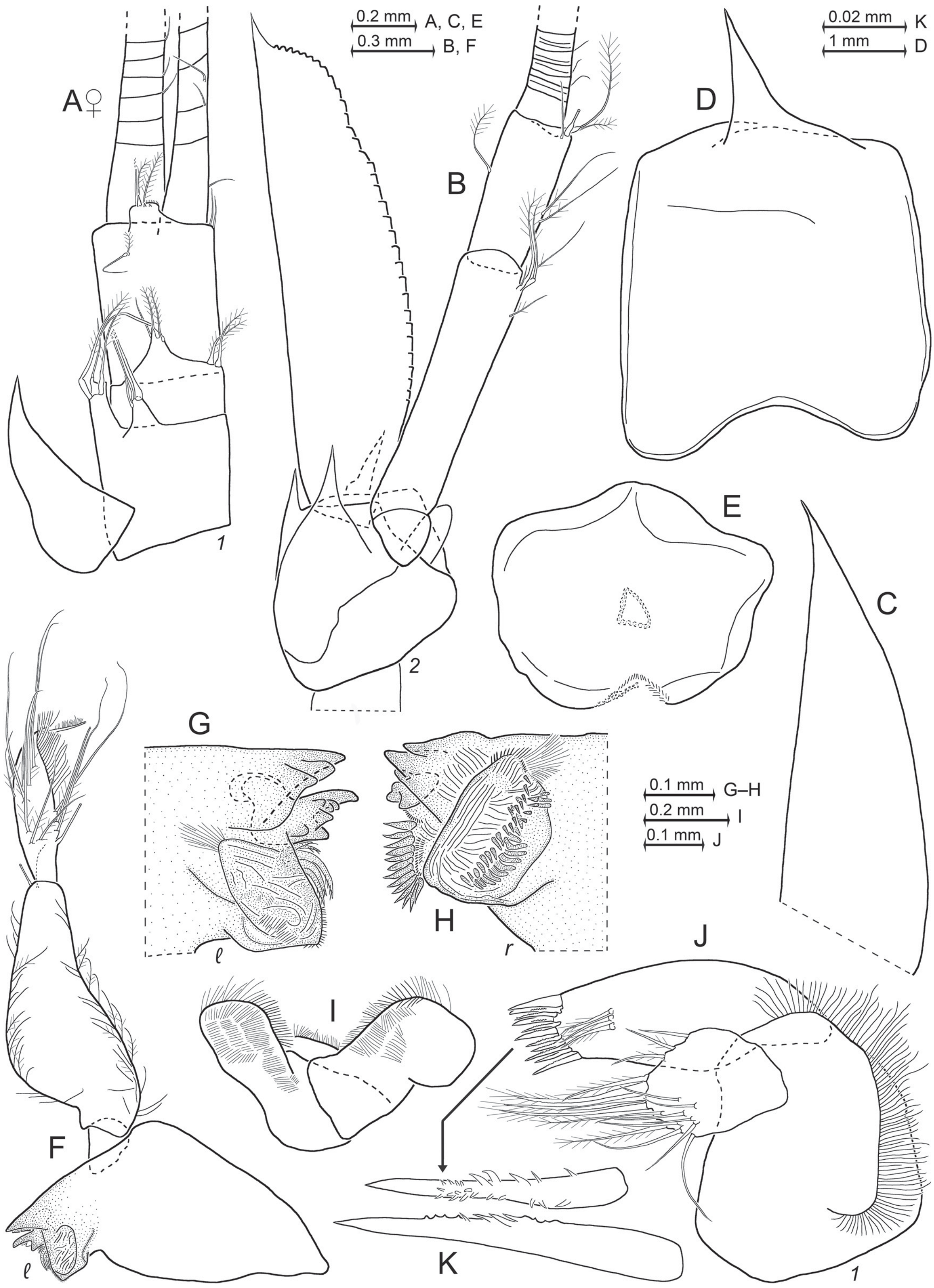

Fig. 55. *Schizurakrops meesi* gen. et sp. nov., holotype, adult female with BL of 13.8 mm (ZMH 64685). **A**. Antennula and left eye rudiment, dorsal view. **B**. Antenna, ventral view; setae omitted from antennal scale. **C**. Distal process of clypeus, lateral view. **D**. Carapace expanded on slide, dorsal view. **E**. Labrum, ventral = aboral view. **F**. Mandible with left palpus, caudal view. **G–H**. Masticatory part of left (G) and right (H) mandibles, rostral view. **I**. Labium. **J**. Maxillula, caudal view. **K**. Details of J, showing two examples of serrated spines.

total length. Basal segment bare, median segment with a few barbed setae near distal margin, terminal segment with a few setae on distal, mesial and lateral margins.

Primary mouthparts (Fig. 55E–I). Labrum and labium normal (Fig. 55E, I). Mandibular palp (Fig. 55F) with basal segment contributing 9%, median segment 59% and terminal segment 32% to total palp length. Palp not hispid, its basal segment without setae, median segment setose along both margins. Length of median segment 2.6 maximum width, its mesial margin convex, lateral margin sigmoid. Terminal segment 3.7 times as long as broad and 0.6 times as long as median segment. Terminal segment well setose, with dense series of short microserrated setae on distal ⅖ of lateral margin. Right mandible (Fig. 55H) with three large teeth on pars incisiva and with only two smooth blunt teeth on small digitus mobilis. Pars centralis modified, with continuous series of 13 smooth, subtriangular, tooth-like spines, proximally (with respect to mouth field) decreasing in basal width rather than length. Processus molaris with most masticatory lamellae bearing small teeth. Left mandible (Fig. 55G) essentially as in most Mysidae, pars incisiva with three large teeth, digitus mobilis with one large plus five small, blunt, distal processes. Pars centralis with six slender spines bearing stiff bristles. Processus molaris with strong grinding lamellae, and with minute teeth on and close to proximal edge. Processus molaris of both mandibles with bundle of stiff bristles on ventro-lateral edge (distally with respect to mouth field).

Gut (Fig. 56). Foregut with normal gross structure. Spines similar to those of *Stellamblyops doryphorus* sp. nov. (Fig. 52). Lateralia of *Schizurakrops meesi* gen. et sp. nov. with dense series of slender, apically pronged spines (Fig. 56B_1–B_2) coated with tiny teeth along most of shaft. Lateralia also with slender, seta-like spines (Fig. 56C) coated with micro-teeth most densely along distal half. Posterior part of lateralia with complex of about ten serrated (toothed) spines of various sizes (Fig. 56D). Dorsolateral infoldings on each side with three larger spines, unilaterally serrated on ⅕ to ⅔ of length from basis (Fig. 56E). Three large toothed spines (Fig. 56F) at half foregut length to the right appear not fixed to foregut and show no counterparts to the left; their affiliation with *S. meesi* appears unclear (extraneous origin not excluded). Foregut with almost full storage volume containing great numbers of crustacean remains, also sponge spicules, foraminiferans, masticated organic material and mineral particles. Midgut less densely filled with finely masticated material. Anal lobe distinct, weakly cuticularized (dashed line in Fig. 57J).

Maxillula (Fig. 55J–K). Distal segment with 11–12 strong spines on transverse terminal margin; the most distal spine smooth, remaining spines mostly unilaterally, also bilaterally serrated, armed with acute to blunt micro-teeth (examples in Fig. 55K). This segment subterminally with three setae bearing long, stiff barbs. Lateral margin of basal segment furnished with longitudinal, comparatively long series of densely set, long hairs. Endite terminally with three large, distally spiny (by stiff bristles) setae flanked by several less strong, shorter setae.

Maxilla. Most similar to that of *Stellamblyops doryphorus* sp. nov. (Fig. 51H). Sympod with three mesial, only distally strongly setose lobes. Additional mesial protrusion short, not clearly classified as lobe. Exopod extends shortly beyond basal segment of palp. Exopod with numerous plumose setae all along lateral margin; tip with 2–3 large plumose setae almost twice as long as largest lateral setae, mesial margin bare. Palp with two segments subequal in length. Apical segment 1.6 times as long as maximum width. Basal segment less wide, its mesial margin with two barbed, basally thick setae in subbasal position, and with a smaller barbed seta in subterminal position. Distal ⅗ of apical segment with well setose margins, proximal ⅖ bare, no spines.

Thoracopods (Fig. 57A–D). Intersegmental joints between sternites and sympods 2 and 5–7 with basally thick, all along barbed seta (Fig. 57C); on sympod 6 accompanied by one smaller seta of that type. Such setae not seen, possibly broken on sympods 3–4 and 8, though expected in analogy to *D. benthophilus* sp. nov. (Fig. 7H). Basal plates of exopods 2 and 5–6 slender, disto-lateral edge with tooth-like projection (Fig. 57C); flagellum of these exopods with ten segments; remaining exopods broken. Basis of endopod 1 with setose endite (below drawing plane, visualized as dashed line in Fig. 57A), remaining segments without endite. Endopod 1 strongly setose along mesial margin, much

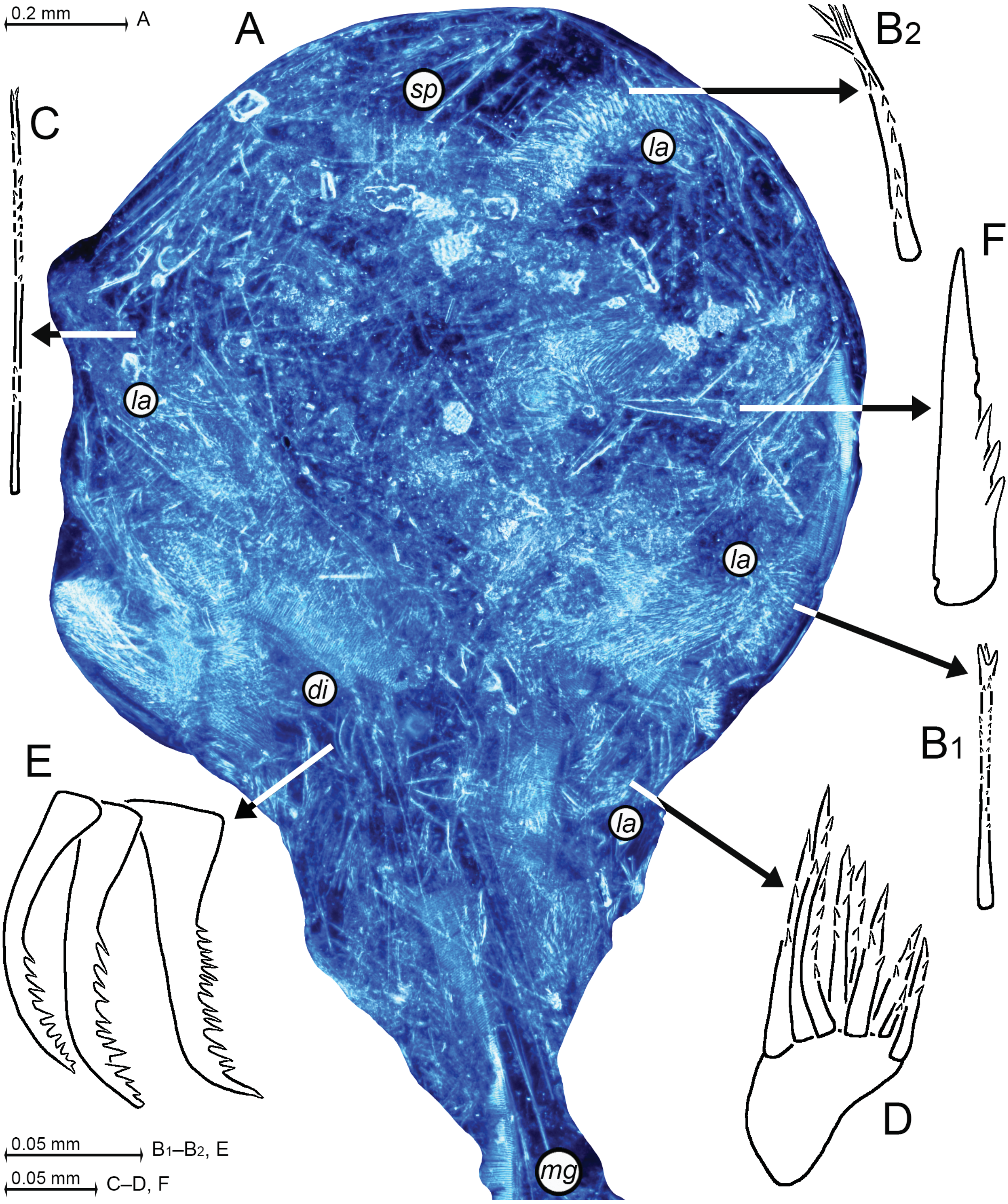

Fig. 56. Foregut in *Schizurakrops meesi* gen. et sp. nov., holotype, adult female with BL of 13.8 mm (ZMH 64685). **A**. Foregut expanded on slide, dorsal view. **B–E**. Details of A, arrows point to modified spines of foregut. **F**. Spine of unclear origin. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *mg* = midgut; *sp* = storage space. A. Object artificially separated from background.

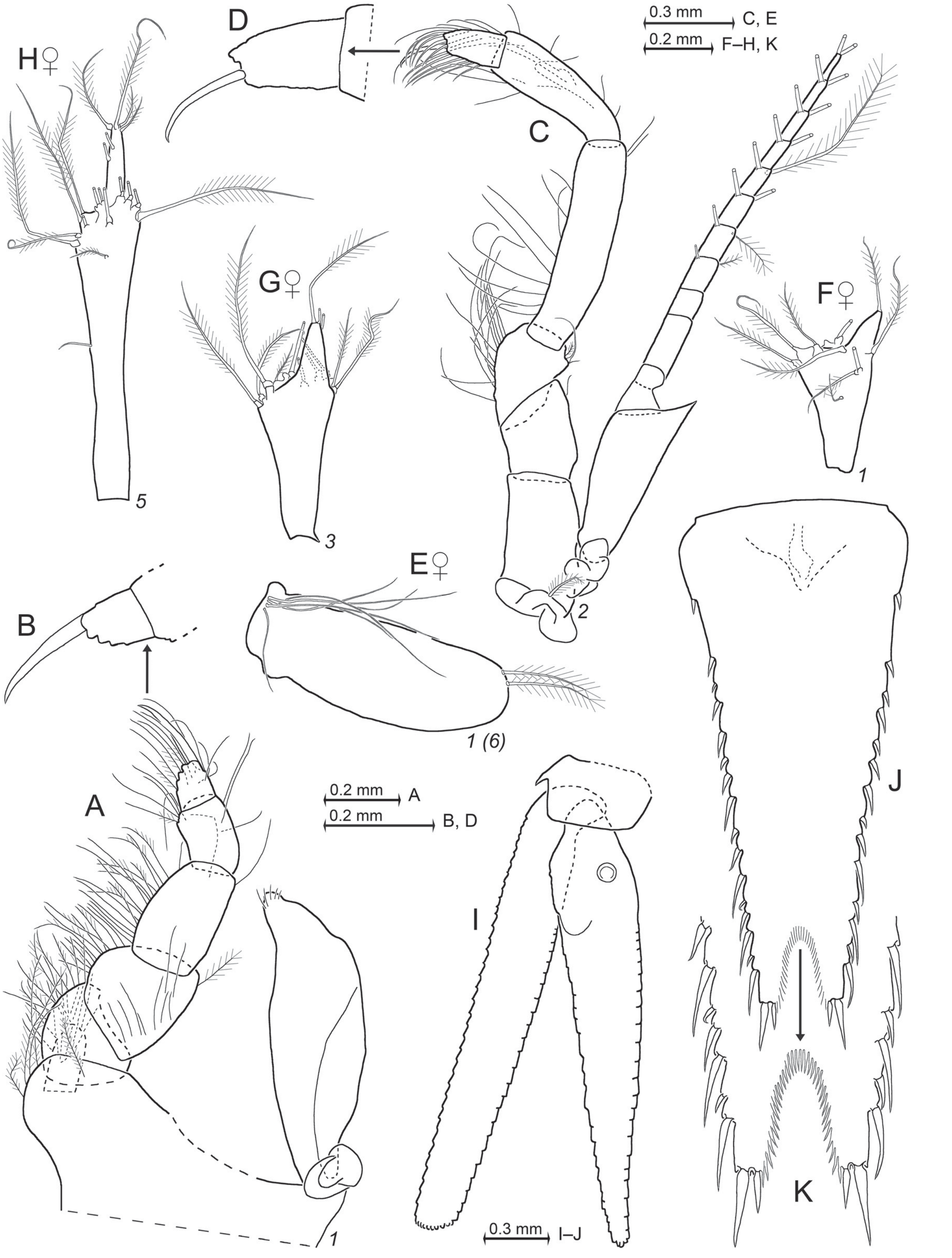

Fig. 57. *Schizurakrops meesi* gen. et sp. nov., holotype, adult female with BL of 13.8 mm (ZMH 64685). **A**. Thoracic endopod 1 with epipod 1 (exopod broken), caudal view. **B**. Detail of A, showing dactylus with nail, setae omitted. **C**. Thoracopod 2, caudal view. **D**. Detail of C showing dactylus with nail, setae omitted. **E**. Oostegite 1, inner face. **F**. Pleopod 1, rostral = lateral. **G**. Pleopod 3, caudal = mesial view. **H**. Pleopod 5, rostral view. **I**. Uropods, dorsal view, setae omitted. **J**. Telson, dorsal view. **K**. Detail of J, showing terminus of telson.

less along lateral margin; its smooth apical nail (Fig. 57B) slightly longer than propodus. Epipod 1 (Fig. 57A) linguiform, about as long as combined ischium, merus, and carpus of endopod 1; tip with five minute bristles. Endopod 2 (Fig. 57C) with six segments including basal segment, the latter fused with sympod; ischium and dactylus strongly setose, remaining segments less setose; no endites; dactylus not reflexed, claw (Fig. 57D) smooth, slender, about as long as dactylus. Endopods 3–8 broken.

Marsupium (Fig. 57E). Oostegites with smooth cuticle on outer and inner faces, not counting setae. Proximal portion of oostegites 1–3 on inner face with 5–8, 8–10 and 10–13 long setae, respectively; setae microserrated by series of stiff, acute bristles along distal half. Oostegite 1 with only two additional, plumose setae near terminus. In contrast, oostegites 2–3 with ventral and anterior margins plus part of posterior margin bearing dense series of setae contributing to ventral and caudal, ventilation-pervious closure of marsupium. Proximal setae smooth but numbers of barbs per seta increase distally, yet not attaining configuration of typical plumose seta. Basal portions of dorsal margin without setae in oostegites 2–3. Only oostegite 3 with numerous slender whip setae loosely scattered over its outer face.

Pleon and tail fan (Figs 54A, 57F–K). Pleomeres 1–5 are 0.6, 0.5, 0.6, 0.4 and 0.5 times as long as pleomere 6, respectively (Fig. 54A); this value 1.2–1.3 for exopod of uropods, 1.2 for endopod and 1.4 for telson (telson inserts more rostrally than rami of uropods). Pleopods 1–5 representing distally widening plates bearing narrow digitus on top; setation as in Fig. 57F–H. Pleopod length increasing caudally. Scutellum paracaudale triangular. Statoliths composed of fluorite, diameter only 0.08–0.10 mm (n = 2). Lateral margins of telson (Fig. 57J–K) (almost) straight, no pores or scales detected.

Amphiakrops gen. nov.

urn:lsid:zoobank.org:act:90554F72-6514-4128-B01D-A0533B775212

Paramblyops bidigitatus-group – Murano 2002a: 35, table 1.

Type species

Amphiakrops brandtae gen. et sp. nov. by present designation.

Diagnosis

Eye rudiments without definite stalk; eyes set apart, not connected by membranous integument, both distal edges produced into tooth-like, non-sensory processes, no visual elements, no ocular papilla. Third segment of antennular trunk undivided (divided into two portions in *Teratamblyops* Murano, 2001). Bare lateral margin of antennal scale ending in a single, strong tooth; mesial margin setose all along. Three segments of antennal peduncle lined in a single plane. Clypeus with rostral process, if present, not strongly elongate. Thoracomeres and pleomeres normal. Thoracic endopod 2 not prehensile. Marsupium formed by three pairs of well-developed oostegites. Female pleopods representing setose rods with residual differentiation of pseudobranchial lobe. Male pleopods biramous, with well-developed sympod and multi-segmented exopod; endopod 1 short, unsegmented; endopods 2–5 long, multi-segmented; all endopods with setose pseudobranchial lobe; endopod 4 as far as known with modified setae. Both rami of uropods undivided, setose all around (with one spine in currently known species). Telson trapeziform, distally converging, terminally truncate. Spines densely set along distal portions of lateral margins. Terminal margin with pair of paramedian setae and 1–2 small spines, together flanked by several large spines.

Etymology

The genus name is a transliterated noun with Greek masculine ending, condensed from the Ancient Greek preposition ‘ἀμφί’ (‘on both sides’) with the adjective ‘άκρος’ (‘acute’) and the noun ‘ὤψ’ (‘eye’), referring to the tooth-like extensions on both sides of each eye rudiment.

For differences from related genera and for the inclusion of two species of *Paramblyops*, see 'Discussion' below.

Species included

- *A. bidigitatus* (W.M. Tattersall, 1911) comb. nov. (recombined from *Paramblyops bidigitata* W.M. Tattersall, 1911) from the NE Atlantic: Bay of Biscay, off Ireland, SW of Faroes, Iceland Basin, 44–64° N, 3–29° W, depth 976–2900 m (W.M. Tattersall 1911; Tattersall & Tattersall 1951; Mauchline 1982; Lagardère 1985; Petryashov 2014b; Astthorsson & Brattegard 2022)
- *A. japonicus* (Murano, 1981) comb. nov. (recombined from *Paramblyops japonica* Murano, 1981) from the NW Pacific: E of Japan, on sea floor at a depth of 1690 m (plus 0–1250 m recorded with non-closing device), 33–36° N, 141–142° E (Murano 1981)
- *A. brandtae* gen. et sp. nov. from the Southern Ocean: Weddell Sea, Drake Passage, South Sandwich Trench, 58–65° S, 25–61° W, depth 2086–2920 m

Amphiakrops brandtae gen et. sp. nov.
urn:lsid:zoobank.org:act:129A500D-3F04-43AF-A2EB-B78CDC5A6A0B
Figs 58–61

Diagnosis

Based on adults of both sexes. All features as in generic diagnosis. Carapace with broadly rounded anterior and disto-lateral margins; rostrum almost non-existent, forming very narrow transverse prolongation of carapace. Eye rudiments dorsoventrally flattened, without visual elements, set apart, with concave anterior and mesial margins, and with weakly convex lateral margin; both anterior corners produced into tooth-like processes. Antennular trunk without mid-ventral carina. Median segment of antennal peduncle 4–5 times as long as basal segment. Antennal scale not subdivided; length three times maximum width. Terminal lobe of scale clearly projecting beyond tooth on lateral margin. Scale extending ⅓–⅔ of its length beyond antennular trunk. Clypeus with unpaired, short triangular rostral process. Labrum normal, with short, broadly rounded to bluntly triangular rostral projection. Thoracomeres 2–8 with unpaired mid-sternal processes in adult male, none in adult female. Marsupium with three pairs of oostegites. Penes short, stout. Female pleopods increasing in length distally; no modified setae. Male pleopods with large quadrangular sympod; endopods 1–5 with 1, 11, 11, 11 and 9 segments, exopods with 11, 11, 11, 11 and 9 segments, respectively; distal half of endopod 4 with longitudinal series of basally thickened smooth setae. Endopod of uropods with single spine below statocyst. Lateral margins of telson straight, moderately converging, proximally bare; distally with (almost) continuous series of about 13–16 spines increasing in length distally. Terminal margin with pair of long, barbed setae in median position, flanked by pair of minute spines, in turn flanked by 3–4 pairs of large spines subequal among each other. Telson with total of ≈36–40 spines and two setae.

Etymology

The species name is a noun with feminine ending in genitive singular, dedicated to Angelika Brandt in recognition of her role as leading scientist of the ANDEEP expeditions and of her important contributions to peracarid taxonomy and biogeography.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♂ ad. (BL = 17.5 mm, on slides); NW Weddell Sea, ANDEEP-II station 132-2; 65°17.74′ S, 53°22.82′ W to 65°17.56′ S, 53°22.83′ W; depth 2086–2086 m; 6 Mar. 2002; EBS epinet; ZMH 64667.

Paratype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 23.8 mm, marsupium empty, on slides); Drake Passage, N of South Shetland Islands, ANDEEP-I station 114-4; 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W; depth 2914–2920 m; 18 Feb. 2002; EBS supranet; ZMH 64668.

Other material

SOUTHERN OCEAN • 1 juv. (only cephalothorax); same collection data as for holotype.

Type locality and distribution

The type locality is ANDEEP II station 132-2: NW Weddell Sea, 65°17.74′ S, 53°22.82′ W to 65°17.56′ S, 53°22.83′ W, depth 2086 m. This species has also been recorded in the deep waters of the Drake Passage. Total ranges 62–65° S, 53–61° W, depth 2086–2920 m.

Description

Holotype (♂)

All male features as in specific diagnosis. Body length 17.5 mm. Thorax contributes 37% to BL, pleon 50%, telson 14% and carapace 30%. Crescent-shaped subrostral plate (as in Fig. 59C), 0.1–0.3 times length of terminal segment of antennular trunk. Carapace with smooth surface, anteriorly broadly rounded, no pores detected. Eye rudiments in dorsal view roughly parallelogram-shaped, without pigment; disto-lateral tooth-like process ⅕ of eye length, disto-mesial process ⅒; organ of Bellonci in basal position. Clypeus with short rostral process (Fig. 58C). Labrum with bluntly obtuse-angled rostral projection (Figs 58C, 59D).

Antennula (Figs 58C, 59A). Trunk dorsoventrally weakly flattened by a factor of 1.2. Basal segment contributes 30%, median segment 14% and terminal segment 55% to total length of antennular trunk. Basal segment with antennular bursa and with disto-lateral, setose lobe extending beyond proximal half of median segment. Each segment about mid-dorsally near distal margin with setose apophysis, basal segment with additional, small dorsal apophysis. Segmental border between median and terminal segments slightly oblique in dorsal as well as lateral view. Terminal segment with disto-median lobe bearing four barbed setae, no tooth. Basal portion of lateral flagellum 1.3 times as wide as in mesial flagellum. Appendix masculina large, 0.1 times BL and 1.2 times length of terminal segment of antennular trunk (Fig. 59A).

Antenna (Fig. 59B). Two-segmented sympod (not considering end sac of antennal gland in Fig. 59B) dorsally with tooth (dashed line in Fig. 59B) above basis of antennal scale and another stronger tooth (solid line) ventrally shortly behind scale, accompanied by additional small tooth near disto-lateral edge of sympod. Peduncle 3-segmented, its basal segment contributes 15%, median segment 61% and terminal segment 24% to its total length. Basal segment bare; median and terminal segments sparsely setose on mesial and lateral margins.

Mandibles (Fig. 59E–G). Palp with basal segment contributing 13%, median segment 56% and terminal segment 31% to total palp length. Palp not hispid, its basal segment without setae, median segment densely setose along lateral and mesial margins. Length of median segment twice maximum width, mesial and lateral margins convex. Terminal segment 3–4 times as long as broad and about half as long as median segment. Terminal segment with great numbers of smooth setae, only its distal fifth with dense series of short, microserrated setae. Pars incisiva of right mandible (Fig. 59F) with four large teeth, digitus mobilis with only two large teeth, each serrated by small secondary teeth. Pars centralis modified, with strong tooth-like spine bearing several acute, stiff bristles. This spine proximally followed by dense series of nine subequal, about triangular, slender tooth-like spines also bearing stiff bristles. Processus molaris with large masticatory plate formed by densely set cuticular lamellae. Left

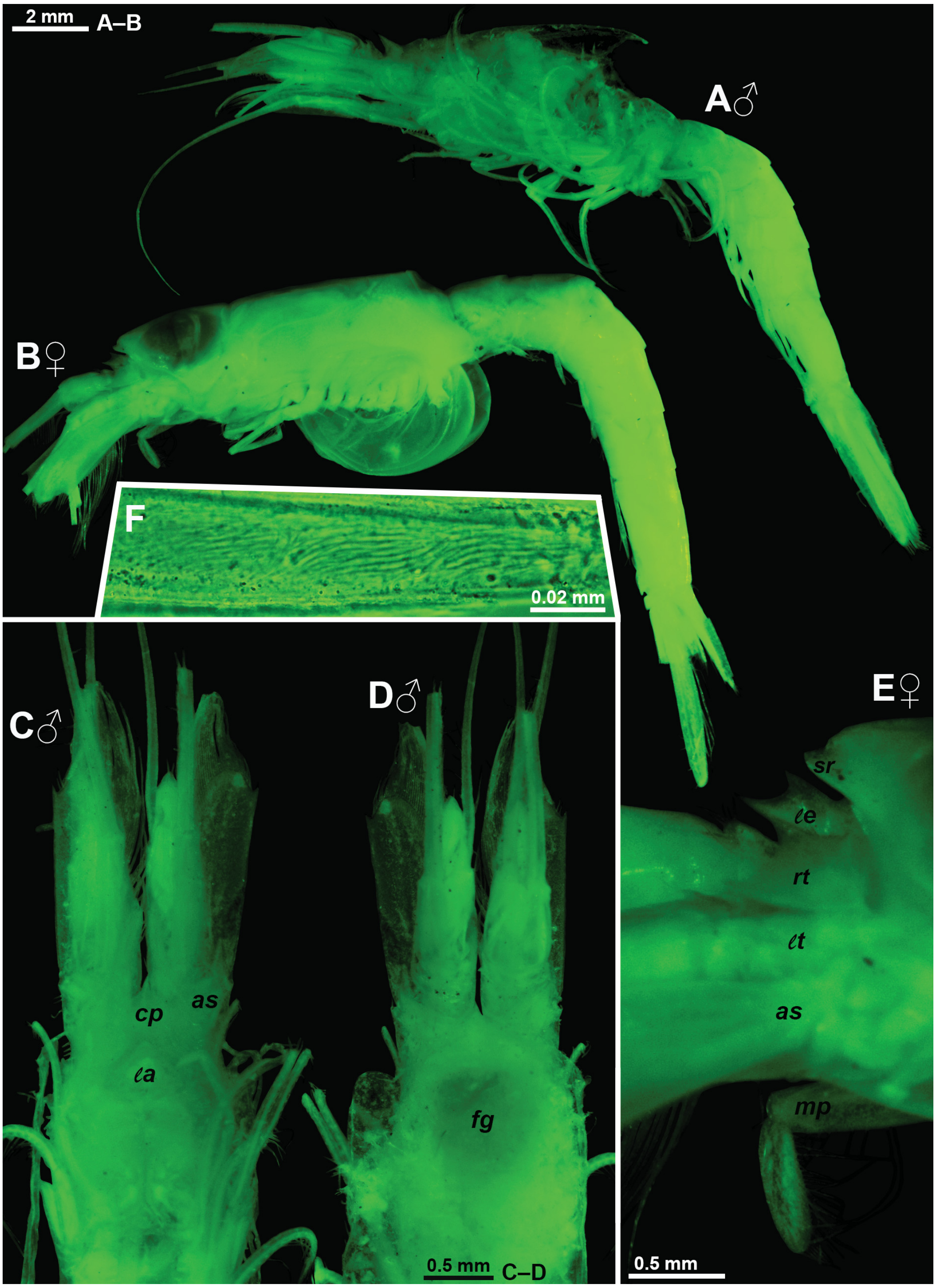

Fig. 58. *Amphiakrops brandtae* gen. et sp. nov., holotype, adult male with BL of 17.5 mm (A, C–D, F: ZMH 64667) and paratype, adult female 23.8 mm (B, E: ZMH 64668). **A**. Male holotype in toto, lateral view (thoracic endopods 3–8 broken). **B**. Female paratype in toto, lateral view (thoracopods 3–8 and part of uropods broken). **C**–**D**. Cephalon of male, ventral (C) and dorsal (D) views. **E**. Rostral margin of female cephalon, lateral view. **F**. Surface cuticle structures of spine on terminal margin of telson. Abbreviations: *as* = antennal sympod; *cp* = clypeus with short rostral process; *fg* = foregut; *la* = labrum; *le* = left eye; *lt* = left antennular trunk; *mp* = mandibular palp; *rt* = right antennular trunk; *sr* = subrostral lobe. A–E. Objects artificially separated from background.

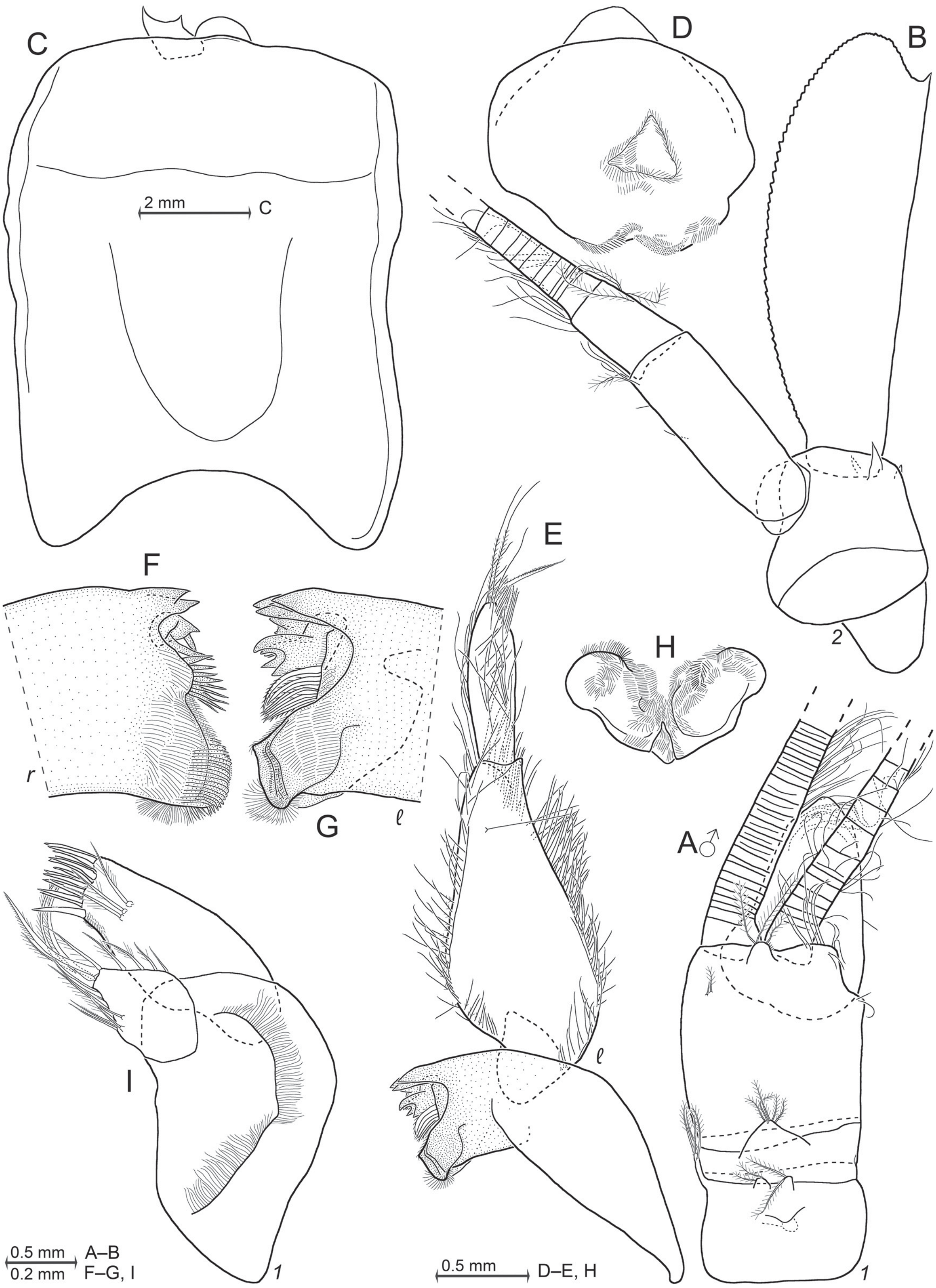

Fig. 59. *Amphiakrops brandtae* gen. et sp. nov., holotype, adult male with BL of 17.5 mm (A–B, E–I: ZMH 64667) and paratype, adult female 23.8 mm (C–D: ZMH 64668). **A**. Male antennula, dorsal view. **B**. Antenna, dorsal view, setae omitted from antennal scale. **C**. Carapace with subrostral plate and left eye, expanded on slide, dorsal view. **D**. Labrum, dorsal = oral view. **E**. Mandible with left palpus, caudal view. **F–G**. Masticatory part of right (F) and left (G) mandibles, caudal view. **H**. Labium. **I**. Maxillula, caudal view.

mandible (Fig. 59G) normal, pars incisiva and digitus mobilis each with four large, blunt teeth. Pars centralis with seven slender spines each bearing stiff, acute bristles. Processus molaris with strong but fewer grinding lamellae compared to right mandible. Processus molaris of both mandibles with bundles of long bristles on proximal margin.

Gut (Fig. 60B–E). Foregut as in *Paramblyops petrescui* sp. nov. (Fig. 43) except that cluster on posterior part of lateralia contains fewer (four vs six) all along unilaterally more strongly serrated spines (Fig. 60D vs Fig. 43D) and that cluster on dorsolateral infoldings contains fewer (six vs nine), unilaterally more strongly serrated (toothed) spines along distal ⅔ (Fig. 60E vs Fig. 43E). Holotype of *A. brandtae* gen. et sp. nov. with storage volume ¾ filled with unidentifiable masticated organic material and great numbers of mineral particles. Abundant mineral particles also found in midgut. Anal lobe distinct, weakly cuticularized.

Maxillula (Fig. 59I). Distal segment with 13 strong spines on transverse terminal margin, 10–11 proximal (= oral) spines slightly serrated in median to subapical portions, remaining (distal = aboral) spines smooth. This segment subterminally with three densely set setae bearing long stiff barbs, no pores beneath setae. Basal segment furnished with longitudinal, comparatively long series of densely set long, fine hairs. Endite terminally with three large, distally spiny (by stiff bristles) setae, in between and more orally (to the left in Fig. 59I) with three more slender, shorter setae of that type decreasing in size proximally. Aboral margin with five barbed setae also decreasing in size proximally. Distal half of endite in addition with five smooth setae.

Maxilla (Fig. 60A). Sympod with four mesial, only distally strongly setose lobes. Longest seta extends beyond dense fan of barbed setae on proximal lobe, this seta (sub)-apically rugged by stiff bristles. Exopod extends shortly beyond basal segment of palp. Exopod with numerous plumose setae all along lateral margin (position of broken setae indicated by dashed lines in Fig. 60A); two longest setae on apex; no seta on mesial margin except for medium-sized seta at disto-mesial edge. Distal segment of palp terminally rounded, two times as long as maximum width, 1.3 times length of proximal segment. Distal segment densely setose on distal half of mesial margin, remaining portions sparsely setose, no spines. Proximal segment with three barbed setae on rostral face plus 3–4 smaller barbed setae on caudal face (caudal setae visualized by dashed lines in Fig. 60A).

Thorax (Fig. 60F–H). Sternite 1 (Fig. 60F) with usual median lobe contributing to caudal closure of mouth field, no additional median processes, no setae. Sternites 2–8 (Fig. 60F) each with one triangular, mostly acute median process, surface of process covered by minute, acute triangular scales (as in Fig. 48H). Only sternite 2 on each side with cluster of 2–6 barbed setae (Fig. 60H) on intersegmental joint with sympod 2. Penes (Fig. 60F) short, tube-like, distally trilobate with eight setae.

Thoracopods (Fig. 60F–H, J–K). Length of basal plates increases from exopod 2 to exopod 5 and then decreases to exopod 7, plate of exopod 8 as in exopod 7; exopod 1 broken. Ratio of length to maximum width 2.2, 2.1, 1.7, 1.8–1.9, 1.6–1.7, 1.6 and 1.9 in series of plates 2–8. Disto-lateral edge of basal plate in exopods 2–8 with small, tooth-like projection (Fig. 60J). Flagellum of exopods 2–8 with 16, 17, 17–18, 18, 18, 17–18 and 18 segments, respectively. Basis of endopod 1 with setose endite (dashed line in Fig. 60F); no tooth-like process. Endopod 1 strongly setose along mesial margin, much less so along lateral margin; lateral margin of basis and ischium without setae. Weakly curved, smooth apical nail (Fig. 60G) longer than dactylus, though shorter than propodus. Epipod 1 linguiform, about as long as combined ischium, merus and carpus of endopod 1, no seta. Endopods 1–2 with six segments including basal segment, the latter fused with sympod. Endopod 2 with carpopropodus and dactylus strongly setose, remaining segments sparsely setose; dactylus not reflexed, nail smooth, comparatively stout (Fig. 60K); no endite. Endopods 3–8 broken.

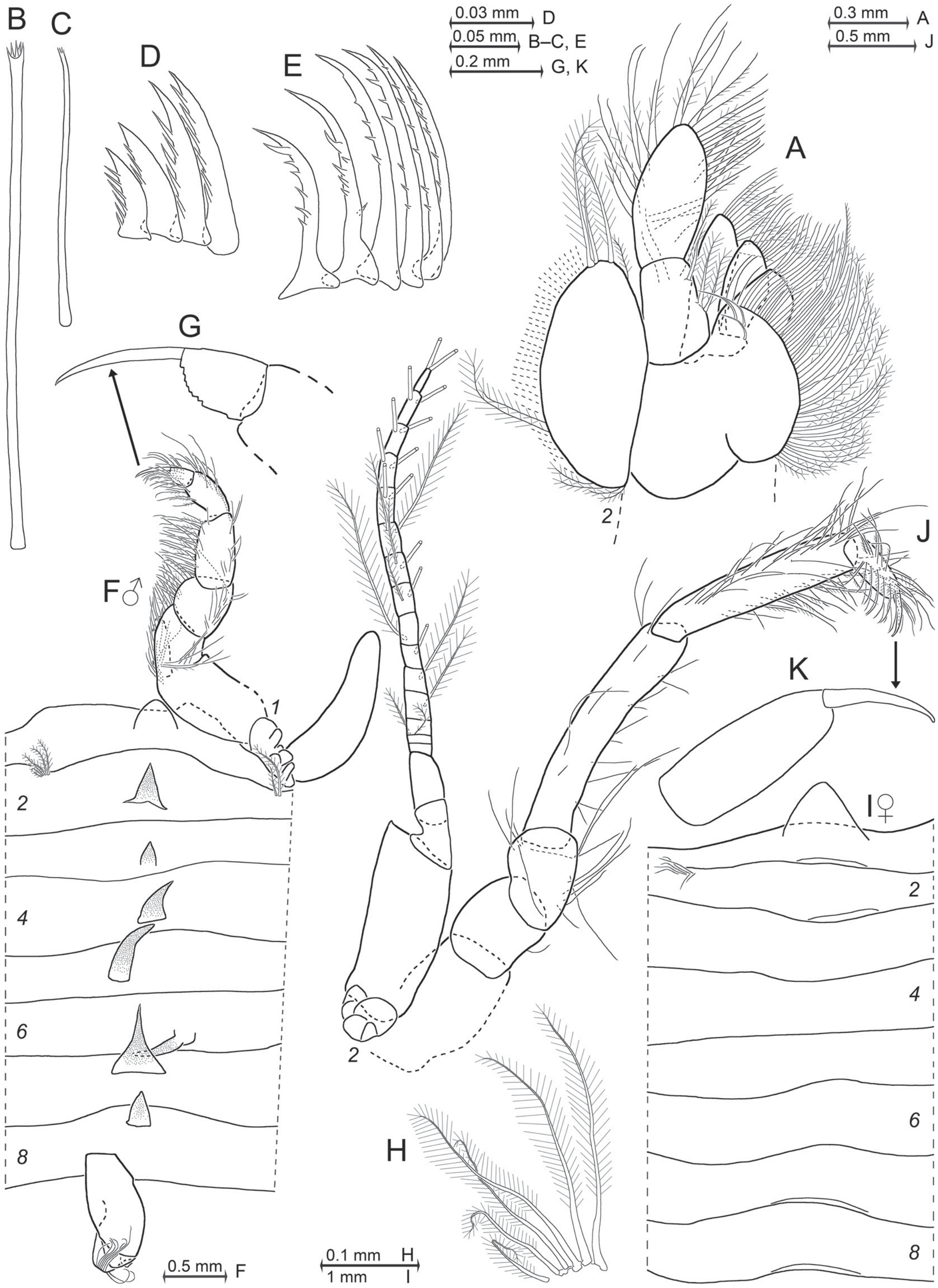

Fig. 60. *Amphiakrops brandtae* gen. et sp. nov., holotype, adult male with BL of 17.5 mm (A–H, J–K: ZMH 64667) and paratype, adult female 23.8 mm (I: ZMH 64668). **A**. Maxilla, rostral view, thin dashed lines indicate position of broken setae of exopod. **B–E**. Modified spines of foregut, from anterior (B), median (C) and posterior (D) parts of lateralia and from dorsolateral infolding (E). **F**. Male thoracic endopod 1 (exopod broken) with epipod 1 (caudal view) and sternites 1–8 with right penis (ventral view). **G–H**. Details of F, showing dactylus with nail (G, setae omitted) and setae on sternite 2 (H). **I**. Female sternites 1–8, ventral view. **J**. Thoracopod 2, rostral view. **K**. Detail of J, showing dactylus with nail, setae omitted.

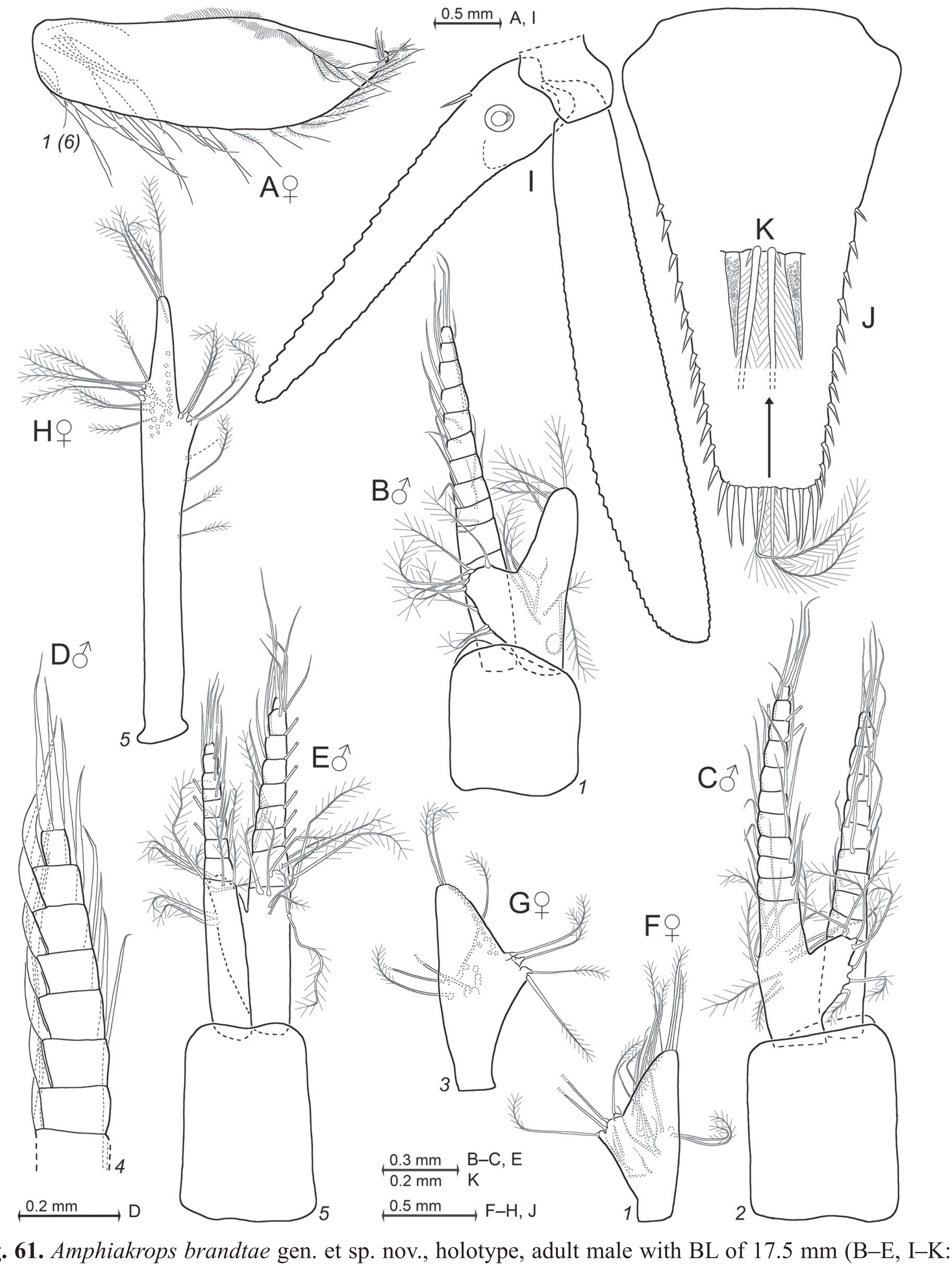

Fig. 61. *Amphiakrops brandtae* gen. et sp. nov., holotype, adult male with BL of 17.5 mm (B–E, I–K: ZMH 64667) and paratype, adult female 23.8 mm (A, F–H: ZMH 64668). **A**. Oostegite 1, outer face. **B**. Male pleopod 1, rostral view. **C**. Male pleopod 2, rostral view. **D**. Distal half of endopod of male pleopod 4, caudal view. **E**. Male pleopod 5, caudal view. **F**. Female pleopod 1, caudal view. **G**. Female pleopod 3, caudal view, setae bases in series along mesial margin are remnants of broken setae. **H**. Female pleopod 5, caudal view. **I**. Uropods, ventral view, setae omitted. **J**. Telson, dorsal view. **K**. Detail of J, showing median portion of terminal margin of telson.

Pleon (Figs 58A, 61B–E). Pleomeres 1–5 are 0.4, 0.5, 0.4, 0.4 and 0.6 times as long as pleomere 6, respectively; this value 1.1 for telson. Sympods of pleopods 1–5 sub-quadrate, without setae (Fig. 61B–C, E). Sympod 2 wider than remaining sympods. Total length increases by ¼ in series from pleopod 1 (Fig. 61B) to pleopod 4; pleopod 5 (Fig. 61E) not in series, about as long as pleopod 2 (Fig. 61C). Pseudobranchial lobes 1–5 and basal ⅓–½ of endopods 2–5, as well as exopods 2–5, with barbed setae. Distal portions of exopods 1–5 and of endopods 2–5 with on average shorter, smooth setae. Only endopod 4 with modified, basally thickened setae (Fig. 61D) on lateral margin of segments 4–10; one such seta per segment, setae of adjoining segments overlapping like roofing tiles. Scutellum paracaudale triangular with acute apex.

Tail fan (Figs 58F, 61I–K). Exopod of uropods (Fig. 61I) extends ¼ of length beyond endopod and half-length beyond telson (in part due to telson inserting more rostrally). Statoliths composed of fluorite, diameter 0.20–0.21 mm (n = 2). Telson length 1.7 times maximum width. Telson with total of 36 spines, including 13–14 spines on each lateral margin (Fig. 61J). Transverse terminal margin with two barbed setae (Fig. 61K), two minute spines and seven large spines; only large spines (Fig. 61J) with furrowed surface (Fig. 58F). Telson without pores or scales.

Paratype (♀)

All female features as in specific diagnosis. Body length 23.8 mm. Rostrum contributes 1% to BL, thorax 36%, pleon 49%, telson 14% and carapace without rostrum 33%. Basal segment contributes 32%, median segment 18% and terminal segment 50% to total length of antennular trunk. Terminal segment of antennular trunk without female lobe.

Thorax (Fig. 58B, 60I). Sternite 1 with usual median lobe contributing to caudal closure of mouth field, no additional median processes; no setae. Sternites 2–8 (Fig. 60I) without median process. Sternite 2 on each side with group of seven barbed setae (structure as in Fig. 60H) on intersegmental joint with sympod 2. Endopods 3–8 broken.

Marsupium (Figs 58B, 61A). Oostegites 1–3 with smooth surface not counting setae (hairs); basally with many setae microserrated by minute acute bristles; no spiniform setae. Dorsal margin of oostegite 1 (Fig. 61A) with tiny hairs along subbasal to apical portions; no such hairs along ventral margin. Distal half of ventral margin and (sub)-apical portions of dorsal margin with barbed setae. Dorsal margin of oostegite 2 with tiny hairs along subbasal portions. Distal third of dorsal margin and distal ¾ of ventral margin with dense series of plumose setae. Only oostegite 3 with numerous whip setae, widely scattered over outer face. Dorsal margin mostly bare along subbasal to subapical portions. Posterior and ventral (mesial) margins densely furnished with plumose setae interlocking with setae of opposite oostegite.

Pleon (Figs 58B, 61F–H). Pleomeres 1–5 are 0.5, 0.6, 0.6, 0.6 and 0.5 times as long as pleomere 6, respectively; this value 1.1 for telson. Pleopod size increases caudally. Pleopods 1–3 widening from basis to roughly half-length, then converging up to blunt apex (Fig. 61F–G); pleopods 4–5 with longer, subrectangular basal portion (Fig. 61H). Setation of pleopods as in Fig. 61F, H; most setae broken in pleopod 3 (Fig. 61G).

Tail fan. Exopod of uropods extends 44% of its length beyond telson (in part due to telson inserting more rostrally; Fig. 58B). Endopods with slender spine on mesial margin below statocyst. Statoliths composed of fluorite, diameter 0.16–0.19 mm (n = 2). Telson length 1.8 times maximum width. Each lateral margin with 16 spines. Left half of truncate terminal margin with three large and one minute spine plus one barbed seta, only large spines with furrowed surface; right half of terminus broken. Telson with extrapolated total of 40 spines plus two barbed setae.

Chelamblyops gen. nov.
urn:lsid:zoobank.org:act:FCE3D6CF-C4AC-4697-AAA6-60650293EB3F

Paramblyops – Birstein & Tchindonova 1970 (partim): 288 (upon species description).

Type species

Paramblyops globorostris Birstein & Tchindonova, 1970 by present designation. This species was recorded by Birstein & Tchindonova (1970) from the NE Pacific, Kurile-Kamchatka Trench, 44°17′ N, 149°33′ E, depth 4690–4720 m. It is here transferred to the new genus as *Chelamblyops globorostris* (Birstein & Tchindonova, 1970) comb. nov.

Diagnosis

Based in modified form on description of two adult females by Birstein & Tchindonova (1970). Eyes not connected, set apart, slender, roughly conical with weakly converging proximal and median portions, each distally strongly converging to an acute mid-apical process. Eyes all along densely packed with visual elements (lacking pigment), no ocular papilla. Antennular trunk with three segments separated by transverse articulations. Antennal scale not subdivided, its bare lateral margin ending in single, strong apical tooth; mesial margin setose all along. Antennal peduncle with three segments lined in a single plane. Labrum with spiniform mid-rostral process. Thoracomeres and pleomeres normal. Thoracic endopod 2 subchelate by dactylus inserting on disto-lateral edge of propodus; from there dactylus mesially bent and reflexed, opposing rugged and setose disto-mesial margin of propodus. Thoracic endopod 8 with carpus separated from 2-segmented propodus by oblique articulation. Both rami of uropods unsegmented, setose all around. Lateral margins of telson basally with small stand-alone spine, at some distance followed by series of less distantly set spines (distal portions of telson unknown).

Etymology

The genus name is a noun with Greek masculine ending, formed by amalgamation of the Greek noun ‘χηλή’ (‘pincers’) with the generic name *Amblyops*, related to the subchelate thoracic endopod 2.

Tribus Pseudommini Wittmann, Ariani & Lagardère, 2014
Genus *Pseudomma* G.O. Sars, 1870

Pseudomma antarcticum Zimmer, 1914

Pseudomma antarcticum Zimmer, 1914: 89, 389–390, pl. xxiii figs 10–12.

Pseudomma antarcticum – O.S. Tattersall 1955: 94 (records, Antarctic). — Ledoyer 1990: 41 (record, Weddell Sea). — Brandt *et al.* 1998: table 1 (biogeography). — Meland 2004: fig. 4, app. 2 (taxonomy, morphology, phylogeny). — Petryashov 2006: 1416 (bathymetric distribution). — Meland & Brattegard 2007: 54–57, figs 7–8 (description, range extension, Iceland Basin). — San Vicente 2010: 48, fig. 37f–g (distribution, Antarctic). — Wittmann & Chevaldonné 2021: 154, 205, table 1, suppl. (distribution, sensory structures, taxonomy, in key). — Astthorsson & Brattegard 2022: 68, fig. 79 (distribution, Iceland Basin). — Mees & Meland 2024: AphiaID 226237 (accepted).

Material examined

SOUTHERN OCEAN • 1 imm. (BL = 12.4 mm); South Sandwich Trench, SE of Montagu Island, ANDEEP-II station 143-1; 58°44.69′ S, 25°10.27′ W to 58°44.49′ S, 25°10.47′ W; depth 773.9–755.6 m; 25 Mar. 2002; EBS epinet • 1 imm. (BL = 8.0 mm); same collection data as for preceding except for occurrence in supranet • 1 imm. (BL = 12.7 mm), 2 juv.; NW Weddell Sea, ANDEEP-II station 131-3; 65°19.83′ S, 51°31.62′ W to 65°19.95′ S, 51°31.41′ W; depth 3049–3050 m; 5 Mar. 2002; EBS epinet • 1 ♀ imm. (BL = 15.8 mm), 1 imm. (BL = 11.5 mm), 8 juv.; same collection data as for preceding • 1 ♂ ad. (BL = 21.2 mm), 1 imm. (BL = 5.8 mm); same collection data as for preceding except for occurrence in supranet • 1 ♂ ad. (BL = 12.8 mm), 1 ♀ subad. (BL = 10.1 mm); NW Weddell Sea, ANDEEP-II station 133-3; 65°20.15′ S, 54°14.35′ W to 65°20.06′ S, 54°14.51′ W; depth 1122–1119 m; 7 Mar. 2002; EBS epinet • 3 ♂♂ imm. (BL = 11.2–11.7 mm), 7 juv.; SE Weddell Sea, ANDEEP-III station 074-6; 71°18.35′ S, 13°57.71′ W to 71°18.28′ S, 13°57.31′ W; depth 1030–1040 m; 20 Feb. 2005; EBS epinet • 1 damaged juv.; same collection data as for preceding except for occurrence in supranet • 1 ♂ ad. (BL = 14.6 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 078-10; 71°09.39′ S, 13°59.30′ W to 71°09.36′ S, 13°58.81′ W; depth 2156–2147 m; 21 Feb. 2005; EBS epinet • 1 juv. (BL = 4.7 mm); Weddell Slope, entrance to Powell Basin, ANDEEP-III station 121-10; 63°37.73′ S, 50°38.09′ W to 63°37.55′ S, 50°38.37′ W; depth 2663–2659 m; 15 Mar. 2005; EBS epinet • 1 ♂ ad. (BL = 16.3 mm), 3 imm. (BL = 9.3–9.7 mm); same collection data as for preceding except for occurrence in supranet • 1 ♂ ad. (BL = 14.3 mm); Powell Basin, ANDEEP-III station 133-2; 62°46.49′ S, 53°03.50′ W to 62°46.38′ S, 53°03.98′ W; depth 1584–1579 m; 16 Mar. 2005; EBS epinet • 1 ♀ ad. (BL = 16.7 mm), 1 ♀ subad. (BL = 13.3 mm), 1 ♂ ad. (BL = 12.6 mm), 1 ♂ subad. (BL = 12.9 mm), 7 juv.; Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 150-6; 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W; depth 1996–1993 m; 20 Mar. 2005; EBS epinet • 1 imm. (BL = 8.3 mm), 1 juv.; Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 151-7; 61°45.52′ S, 47°07.68′ W to 61°45.42′ S, 47°08.04′ W; depth 1182–1185 m; 21 Mar. 2005; EBS epinet • 1 damaged juv.; Drake Passage, NW of Elephant Island, ANDEEP-I station 041-3; 59°22.24′ S, 60°04.06′ W to 59°22.40′ S, 60°03.99′ W; depth 2375–2372 m; 26 Jan. 2002; EBS supranet • 1 ♀ ad. (BL = 10.6 mm), 1 ♀ subad. (BL = 9.3 mm), 5 damaged juv.; Drake Passage, NW of Elephant Island, ANDEEP-I station 042-2; 59°40.29′ S, 57°35.43′ W to 59°40.42′ S, 57°35.27′ W; depth 3683–3680 m; 27 Jan. 2002; EBS epinet • 1 ♀ ad. (BL = 14.1 mm), 1 ♀ ad. (damaged, BL = 14.0 mm), 1 ♀ subad. (BL = 9.0 mm), 3 imm. (BL = 4.9, 8.0, 8.9 mm); Drake Passage, N of South Shetland Islands, ANDEEP-I station 046-7; 60°38.35′ S, 53°57.36′ W to 60°38.12′ S, 53°57.49′ W; depth 2893.6–2893.2 m; 30 Jan. 2002; EBS epinet • 2 ♀♀ ad. (BL = 12.9, 16.5 mm), 2 damaged imm.; same collection data as for preceding except for occurrence in supranet • 1 ♀ ad. (damaged, BL = 8.8 mm), 1 juv.; same collection data as for preceding • 1 imm. (BL = 6.8 mm), 1 juv.; Drake Passage, NW of Elephant Island, ANDEEP-I station 129-2; 59°52.21′ S, 59°58.75′ W to 59°52.15′ S, 59°59.03′ W; depth 3643–3622 m; 23 Feb. 2002; EBS epinet • 2 imm. (BL = 7.3, 7.8 mm) in separate vial, same collection data as for preceding • 1 imm. (BL = 11.5 mm); Bellingshausen Sea, NW of Anvers Island, ANDEEP-III station 154-9; 62°31.47′ S, 64°39.45′ W to 62°31.36′ S, 64°39.25′ W; depth 3804–3808 m; 30 Mar. 2005; EBS epinet.

Type locality and distribution

The type locality by monotypy is 65°15′ S, 80°00′ E, 3425 m (Zimmer 1914). So far recorded from the Southern Ocean: East Antarctica, Kerguelen Island, South Georgia, South Shetlands, Clarence Island, Antarctic Peninsula and Weddell Sea, 61–80° S, 80° E westward to 63° W, 278–3425 m (Zimmer 1914; O.S. Tattersall 1955; Ledoyer 1990; San Vicente 2010); and from the N Atlantic: Iceland Basin, 62–63° N, 15–18° W, 1085–2270 m (Meland & Brattegard 2007; Astthorsson & Brattegard 2022). All ANDEEP materials are from the Southern Ocean: South Sandwich Trench, Weddell Sea, Powell Basin, Drake Passage and Bellingshausen Sea, 59° S–71° S, 14° W–65° W, 756–3808 m. These records extend the known ranges in the Southern Ocean only marginally northward to 59° S, westward to 65° W, and down to 3808 m.

Remarks

Eye rudiments mesially fused except for a short disto-median cleft. Median eye-cyst leads to this cleft. Eye without ocular papilla, no visual elements, no organ of Bellonci. Basal segment of antennular trunk dorsally with antennular bursa. Terminal segment without female lobe. This segment with disto-median lobe armed with four teeth increasing in size laterally and, out of this series, an additional 0–1 short tooth positioned mesially; lobe disto-laterally with four barbed setae. Telson with bare lateral margins.

Pseudomma sarsii Willemoes-Suhm in G.O. Sars, 1884

Pseudomma Sarsii Willemoes-Suhm in G.O. Sars, 1884: 37–38 (preliminary description, Kerguelen Islands, Antarctica).

Pseudomma sarsii – G.O. Sars 1885: 189–191, pl. xxxiv figs 1–3 (detailed description). — Murray 1895: 1296, 1301 (Challenger Expedition records). — Brandt *et al.* 1998: table i (biogeography, endemism). — Petryashov 2006: 1416 (vertical distribution, in key); 2007: table 2 (biogeography). — Wittmann & Chevaldonné 2021: 155, suppl. (spelling accepted, distribution, in key).
Pseudomma Sarsii – Stebbing 1893: 269 (Antarctic, in citation). — Patience 1907: 76 (occurrence, in citation). — Hansen 1913: 13 (records, South Georgia). — Rustad 1930: 7–8, fig. 1 (record, South Georgia).
Pseudomma Sarsi – Gerstaecker & Ortmann 1901: 672, 677 (distribution).
Pseudomma sarsi – O.S. Tattersall 1955: 93 (taxonomy, distribution, sub-Antarctic). — Siegel & Mühlenhardt-Siegel 1988: 182, fig. 1 (records, Bransfield Strait). — Ledoyer 1995: 607–608, fig. 2b (record, distribution, description). — Meland 2004: 4, fig. 4 (distribution, phylogeny). — San Vicente 2010: 51, fig. 29 (distribution, in key to Antarctic species). — Petryashov 2014a: 150, map 2 (biogeography). — Mees & Meland 2024: Aphia-ID 226910 (spelling accepted).

Material examined

SOUTHERN OCEAN • 1 ♀ ad. (BL = 15.7 mm), 6 juv.; Drake Passage, NW of Elephant Island, ANDEEP-I station 041-3; 59°22.24′ S, 60°04.06′ W to 59°22.40′ S, 60°03.99′ W; depth 2375–2372 m; 26 Jan. 2002; EBS epinet • 1 ♀ ad. (damaged, BL = 7.3 mm); South Shetland area, NNW of Elephant Island, ANDEEP-I station 043-8; 60°27.12′ S, 56°05.10′ W to 60°27.24′ S, 56°05.25′ W; depth 3961.2–3962.4 m; 4 Feb. 2002; EBS epinet.

Nomenclatorial note

The nominative '*Sarsius*' and the genitive '*Sarsii*' are valid Latinizations of the proper name 'Sars'. As previously stressed by Wittmann & Chevaldonné (2021) the original ending '*ii* 'ought to be maintained according to ICZN (1999), Article 33.4.

Distribution

Type locality not defined. First description by Sars (1884) based on "several" specimens from the Kerguelen Islands, 48°41′ S, 69°03′ E, depth 219 m, and on one larger mutilated specimen from Challenger station 153 off East Antarctica, 65°42′ S, 79°49′ E, depth 3030 m, this last specimen doubted by Hansen (1913) and O.S. Tattersall (1955) to pertain to this species. These and subsequent records were made in the Southern Ocean: Kerguelen Islands, South Georgia, Weddell Sea, Drake Passage, South Orkneys, Bransfield Strait, Shetlands Islands, Falkland Islands (Malvinas) and Beagle Channel, 49–67° S, 69° E westward to 69° W, depth 75–3962 m (G.O. Sars 1884, 1885; O.S. Tattersall 1955; Siegel & Mühlenhardt-Siegel 1988; Ledoyer 1995; Brandt *et al*. 1999; San Vicente 2010; Wittmann & Chevaldonné 2021). The record in Murano (1974b) from Japan, Sagami Bay, 35° N, was not accepted by Meland (2004) as belonging to this species. The ANDEEP I samples from deep waters of the Drake Passage, 59–60° S, 56–60° W, depth 2372–3962 m, are within previously published acknowledged ranges.

Descriptive notes

Features of eye and antennula as described for *P. antarcticum*. Anterior margin of eye rudiments lined with minute teeth (scales). Antennular trunk with disto-median lobe armed with three small teeth increasing in size laterally, lobe disto-laterally with three barbed setae. Distal lobe of antennal scale extends beyond tooth on outer margin. Antennal scale extends ⅗ of its length beyond antennular trunk and ⅓ beyond 3-segmented antennal peduncle. Uropods setose all around, no spine; endopod extends ⅐ of its length beyond telson. Proximal third of linguiform telson without spines; distal ⅔ of each lateral margin with nine small subequal spines; terminal margin with pair of paramedian setae flanked by three pairs of large spines.

Tribus Mysimenziesini Tchindonova, 1981
Genus *Marumomysis* Murano, 1999

Marumomysis antarctica San Vicente, 2007

Marumomysis antarctica San Vicente, 2007: 685–689, figs 1–4.

Marumomysis antarctica – San Vicente 2010: 47, figs 26, 36d–e (diagnosis, distribution). — Petryashov 2014a: 149–150 (biogeography). — Wittmann 2020: 33 (eye morphology, in comparison). — Mees & Meland 2024: AphiaID 431975 (accepted).

Material examined

SOUTHERN OCEAN • 1 ♀ ad. (BL = 23.1 mm), 1 ♂ subad. (at pre-molt stage, BL = 9.7 mm), 1 imm.; Drake Passage, N of South Shetland Islands, ANDEEP-I station 114-4; 61°43.54′ S, 60°44.20′ W to 61°43.54′ S, 60°44.55′ W; depth 2914–2920 m; 18 Feb. 2002; EBS supranet.

Type locality and distribution

The type locality is in the Southern Ocean: Bellingshausen Sea, 68°59′53″ S, 90°26′58″ W, depth 1895 m (San Vicente 2007). Additional records in the Bellingshausen Sea at 69–70° S, 80–90° W, depth 1320–1895 m (San Vicente 2010). The present record at ANDEEP I station 114-4 is in the Drake Passage at 62° S 61° W, depth 2914–2920 m, indicating significant latitudinal, longitudinal and bathymetric extensions of the known range. The resulting total range is 62–70° S, 61–90° W, depth 1320–2920 m.

Remarks

Eye rudiments set apart, sickle-shaped with single, tooth-like, non-sensory disto-lateral process, organ of Bellonci present near base, no visual elements, no ocular papilla. Basal segment of antennular trunk dorsally with antennular bursa, ventrally with rounded mid-sagittal carina. Terminal segment without female lobe. Disto-median lobe with four barbed setae and six teeth, five of the latter increasing in size laterally (three such teeth in *Dactylamblyops benthophilus* sp. nov.: Fig. 4B); as an unusual feature, small sixth tooth on lateral side of largest tooth in *M. antarctica*. Both rami of pleopod 4 with nine segments in present subadult male. In the original description, San Vicente (2007) reported nine segments in the exopod vs twelve in the endopod of adult males. In the ANDEEP material the left antennular trunk of the adult female and the frons of the subadult male are infested with settled spores of ellobiopsid parasites.

Subfamily Heteromysinae Norman, 1892
Tribus Mysidetini Holt & Tattersall, 1906
Genus *Mysidetes* Holt & Tattersall, 1906

Mysidetes sp. M

nec *Mysidetes* sp. – Wittmann *et al.* 1993:32. — Wittmann 1995: fig. 1c.

Material examined

SOUTHERN OCEAN • 1 imm. (BL = 8.7 mm); South Sandwich Trench, SE of Montagu Island, ANDEEP-II station 143-1; 58°44.69′ S, 25°10.27′ W to 58°44.49′ S, 25°10.47′ W; depth 773.9–

755.6 m; 25 Mar. 2002; EBS supranet • 1 ♀ subad. (BL = 14.1 mm); NW Weddell Sea, ANDEEP-II station 133-3; 65°20.15′ S, 54°14.35′ W to 65°20.06′ S, 54°14.51′ W; depth 1122–1119 m; 7 Mar. 2002; EBS epinet • 2 juv., SE Weddell Sea, ANDEEP-III station 074-6; 71°18.35′ S, 13°57.71′ W to 71°18.28′ S, 13°57.31′ W; depth 1030–1040 m; 20 Feb. 2005; EBS epinet • 1 imm. (BL = 5.3 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 078-10; 71°09.39′ S, 13°59.30′ W to 71°09.36′ S, 13°58.81′ W; depth 2156–2147 m; 21 Feb. 2005; EBS epinet • 1 ♀ subad. (BL = 16.4 mm), 6 juv. (BL = 4.1–5.9 mm); Powell Basin, SW continental slope of South Orkney Islands, ANDEEP-III station 150-6; 61°48.70′ S, 47°28.04′ W to 61°48.57′ S, 47°28.19′ W; depth 1996–1993 m; 20 Mar. 2005; EBS epinet • 1 ♀ subad. (BL = 16.1 mm); same collection data as for preceding except for occurrence in supranet • 1 ♂ ad. (BL = 20.5 mm), 1 imm. (BL = 9.6 mm); Bellingshausen Sea, NW of Anvers Island, ANDEEP-III station 153-7; 63°19.31′ S, 64°36.94′ W to 63°19.15′ S, 64°37.18′ W; depth 2092–2118 m; 29 Mar. 2005; EBS supranet.

Distribution

Widely distributed in the areas covered by the ANDEEP II–III expeditions: SE Weddell Sea, eastern Weddell Slope, NW Weddell Sea, Powell Basin, Bellingshausen Sea, South Sandwich Trench; total ranges 59–71° S, 14–65° W, depth 774–2147 m. The lower depth range significantly exceeds the maximum depth of 1105 m previously known for species of *Mysidetes* at a worldwide scale (Wittmann & Chevaldonné 2021).

Remarks

The ANDEEP specimens closely approach the first description of *Mysidetes macrops* O.S. Tattersall, 1955, and the respective features given in the worldwide key to *Mysidetes* species by Wittmann & Chevaldonné (2021). However, the ANDEEP specimens differ by larger body size, antennal scale extending longer beyond antennular trunk, rostrum slightly covering base of eyestalks, and tip of triangular rostrum narrowly rounded rather than acute. This material will be treated in greater detail in a forthcoming publication on *Mysidetes* materials from other Antarctic expeditions.

Subfamily Mysidellinae Czerniavsky, 1882

Genus Mysidella G.O. Sars, 1872

Mysidella G.O. Sars, 1872: 266, 267.

Mysidella – G.O. Sars 1879: 84–86 (definition). – Zimmer 1909: 169 (diagnosis, key to species). — Illig 1930: 600 (key to species). — Valkanov 1935: 282–283 (in part synonym of *Limnomysis*). — Banner 1948b: 108 (diagnosis). — Tattersall & Tattersall 1951: 427 (diagnosis). — Ii 1964: 574 (diagnosis). — Kathman *et al.* 1986: 191 (description, in key). — Fenton 1990: 437 (diagnosis). — Gerken *et al.* 1997: 140 (diagnosis). — Murano 2002b: 66 (revision, diagnosis). — Chevaldonné *et al.* 2015: fig. 5 (molecular systematics). — Shimomura 2016: 30–31 (key to species). — San Vicente 2017: table 2 (distribution of NE Atlantic species). — Mees & Meland 2024: Aphia-ID 119883 (accepted).

Diagnosis

Based on adults of both sexes. Eyes well developed or less frequently rudimentary, in any case separate. Antennula with small, setose male lobe. Antennal scale lanceolate, setose all around, with small apical segment separated by a transverse suture. Antennal peduncle 3-segmented. Labrum asymmetrical with two unequal posterior lobes. Cutting edge of each mandible reduced to triangular mesial lobe with mostly narrowly rugged margins, no teeth, no spines, no setae. Distal segment of maxillula distally widened, distal margin with series of spines decreasing in size mesially, no setae; endite with few, mostly three, large barbed setae, sometimes also with much smaller setae. Maxilla comparatively small, setose, with well-developed exopod, no spines. Thoracic endopod 1 with enlarged propodus armed with spiniform modified setae on distal margin; dactylus slender with slender nail. Carpopropodus of thoracic endopods 3–8 with two or more segments separated by transverse articulations. Marsupium with two pairs of large oostegites plus a vestigial pair on thoracopods 6. Penes mostly large, tubular. Pleopods reduced to setose plates in both sexes. Uropods unsegmented, setose all around, endopod ventrally with series of spines proceeding parallel and close to mesial margin. Telson with terminal cleft armed with laminae or spines, no seta; terminal lobes outside cleft with spines only; lateral margins with spines at least on distal portions.

Type species

Mysidella typica G.O. Sars, 1872 by original designation according to ICZN (1999), Article 68.2.1. The type locality of this species is in the NE Atlantic: Norway, Hardangerfjord, off Utne, 60°26′ N, 6°38′ E, depth 366 m (G.O. Sars 1872b) according to Article 76.1. of the CODE (ICZN, 1999).

Species included (18 species acknowledged)

– *M. americana* Banner, 1948 from the NE Pacific: California, Canada, 33–52° N, 118–159° W, depth 30–600 m (Banner 1948b; Gleye 1981; Price 2001)
– *M. antarctica* sp. nov. from the Southern Ocean: Weddell Slope, 71° S, 15° W, depth 3103 m
– *M. australiana* Fenton, 1990, from the SW Pacific: Tasmania, Bass Strait, 39–41° S, 144–149° E, 32–95 m (Fenton 1990; Price 2001)
– *M. biscayensis* Lagardère & Nouvel, 1980 from the NE Atlantic and Mediterranean: Bay of Biscay, Catalan Sea, 39–44° N, 2° E–6° W, depth 190–720 m (Lagardère & Nouvel 1980; Price 2001; San Vicente 2017; Ríos *et al.* 2022)
– *M. hoshinoi* Shimomura, 2016 from the NW Pacific: Japan, 35° N, 139° E, depth 35 m (Shimomura 2016)
– *M. incisa* Wang, 1998 from the NW Pacific and E Indian Ocean: Qiongzhou Strait, northern South China Sea, Timor Sea, 12° S–22° N, 110–130° E, depth 20–115 m (Wang 1998; Liu & Wang 2000; Murano 2002b)
– *M. macrophthalma* Murano, 2002 from the NW Pacific: northern South China Sea, 22° N, 118° E, depth 415–437 m (Murano 2002b)
– *M. minuta* Brattegard, 1973 from the Caribbean: Colombia, Isla Morro Grande de Santa Marta, 11° N, 74° W, depth 5–40 m (Brattegard 1973, 1974)
– *M. mukaii* Murano, 2002 from the Indo-Pacific: W Australia, 32° S, 116° E, depth 3 m (Murano 2002b)
– *M. nana* Murano, 1970 from the NW Pacific: Japan, 33–35° N, 130–140° E, depth 18–80 m (Murano 2002b)
– *M. orientalis* Murano, 2002 from the NW Pacific: eastern East China Sea, Sea of Japan, 31–43° N, 128–135° E, depth 347–528 m (Murano 2002b; Golovan *et al.* 2013)
– *M. rotundincisa* Wang, 1998 from the NW Pacific: northern South China Sea, 19–22° N, 112–113° E, depth 26–260 m (Wang 1998; Liu & Wang 2000)
– *M. sulcata* Murano, 2002 from the E Indian Ocean: Timor Sea, Sulu Sea, 13° S–8° N, 118–123° E, depth 535–738 m (Murano 2002b)
– *M. tanakai* Ii, 1964 from the NW Pacific: off Japan, 35–43° N, 138–145° E, depth 220–1075 m (Murano 2002b; Fukuoka 2009; Shimomura 2016)
– *M. tenuicauda* Wang, 1998 from the NW Pacific: northern South China Sea, 20° N, 113° E, depth 78 m (Wang 1998; Liu & Wang 2000)
– *M. truncata* Murano, 2002 from the NW Pacific: Japan, 28° N, 129° E, depth 138–141 m (Murano 2002b)

- *M. typhlops* G.O. Sars, 1872 from the NE Atlantic: Norway, Iceland, 60–64° N, 5° E–27° W, depth 293–794 m (G.O. Sars 1872b; Astthorsson & Brattegard 2022)
- *M. typica* G.O. Sars, 1872 from the NE Atlantic: Iceland, Norway, Ireland, Bay of Biscay, Mediterranean (Balearic Sea, off Monaco, Gulf of Naples), 41–65° N, 14° E–15° W, depth 55–540 m (G.O. Sars 1872b; Holt & Beaumont 1900; Holt & Tattersall 1906a; Zimmer 1915; Colosi 1929; Băcesco 1941; Price 2001; Wittmann & Ariani 2019)

Mysidella antarctica sp. nov.
urn:lsid:zoobank.org:act:40D908D9-D8C6-479B-BA31-7A6289440CBB
Figs 62–65

Diagnosis

Based on adult females only. All female features as in generic diagnosis. Carapace with broadly rounded anterior margin; rostrum forming a very short, wide-angled, apically rounded prolongation of carapace. Large, broadly rounded (shoulder-like) disto-lateral lobes anteriorly extending to basis of antennal scale. Eyes set apart, cushion-like, only slightly dorsoventrally flattened, with slightly produced rostral margin; presence of a few strongly reduced, completely internal ommatidia not forming a compound organ, no ocular papilla. Second and third segments of antennular trunk separated by, in frontal plane, oblique articulation, resulting in lateral bending of entire trunk. Antennal scale length about 5⁄2 of maximum width. Scale extending slightly less than half its length beyond antennular trunk. Only basis of thoracic endopod 1 mesially with setose endite (lobe); enlarged propodus with distal margin armed with about seven spiniform modified setae, laterally increasing in size; dactylus slender, about half as long as propodus; dactylus with slender nail about as long as propodus. Endopod of uropods with ≈32 spines ventrally along mesial margin between statocyst and tip; proximal fifth of spine series with small spines discontinuously increasing in size distally, followed by medium-sized subequal spines up to a single subapical spine measuring more than twice that size. Lateral margins of telson straight, slowly converging, proximal 2⁄5 bare; distally remaining stretch with uninterrupted series of 19–22 spines organized in groups of medium-sized spines with smaller spines in between, average spine size of groups increasing in length distally. Terminal margin with triangular, somewhat ogival incision at 11–12% of telson length. Incision armed with ≈12 laminae, no spine, no seta. Each latero-terminal lobe of telson apically with large spine (precise length unknown) flanked by pair of spines with length subequal to that of distal-most lateral spines.

Etymology

The species name is a New Latin adjective with feminine ending referring to the distribution of the species in Antarctic marine waters.

Material examined

Holotype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 7.5 mm); eastern Weddell Slope, Kapp Norvegia, ANDEEP-III station 080-9; 70°39.07′ S, 14°43.36′ W to 70°39.22′ S, 14°43.39′ W; depth 3103–3102 m; 23 Feb. 2005; EBS supranet; ZMH 64682.

Paratype

SOUTHERN OCEAN • 1 ♀ ad. (BL = 7.9 mm, on slides); same collection data as for holotype except for occurrence in epinet; ZMH 64683.

Type locality

Type locality is ANDEEP III station 080-9: eastern Weddell Slope, Kapp Norvegia, SW of Wegener Canyon, 70°39.07′ S, 14°43.36′ W to 70°39.22′ S, 14°43.39′ W, depth 3103–3102 m. Both type specimens from the same haul, the holotype from the supranet and the paratype from the epinet.

Description

Holotype (♀)

Adult female with BL 7.5 mm, brood pouch empty, not dissected. All features visible without dissection are within limits of specific diagnosis. Rostrum contributes 1%, cephalothorax 31%, pleon (without telson) 54% and telson 16% to total BL.

Carapace. Normal, length 28% of BL (including rostrum), surface smooth (Fig. 62D), no sulci visible. Concave posterior margin leaving ultimate 1½ thoracomeres dorsally exposed.

Eyes (Fig. 62C–D). Antero-posterior extension 0.8 times maximum width (= transverse extension) and 1.3 times length of terminal segment of antennular trunk. Disto-lateral margin of eyes with spiniform scales (as in Fig. 63D). Additional details given below for the dissected paratype.

Antennula (Fig. 62C–D). Trunk length 9% of BL, extending half its length beyond eyes. Measured along dorsal midline, basal segment 38% trunk length, median 27% and terminal 35%. Length of basal segment 0.8 times width, a setose dorsal apophysis shortly extending beyond its rostral margin. Length of terminal segment 0.7 times width. Width of outer antennular flagellum near basis 1.3 times width of inner flagellum.

Antenna (Fig. 62C). Sympod 2-segmented, caudally in addition with large end sac of antennal gland. Segments 1–3 of peduncle contribute 18%, 40% and 42% to total length in dorsal view.

Cephalothorax (Fig. 62). Clypeus with short triangular rostral process reaching to basal third of basal segment of antennular trunk; acute apex of process visible in dorsal view (Fig. 62D). Thoracic endopod 1 with six segments. Endopods 2–8 broken.

Pleon and tail fan (Fig. 62A–B). Length of pleomeres 1–5 is 0.8, 0.8, 0.8, 0.7 and 0.7 times length of pleomere 6, respectively. Scutellum paracaudale convex, broadly rounded. Uropods with smooth cuticle, not considering setae and spines. Exopod 1.1 times as long as endopod and 1.2 times as long as telson; endopod 1.1 times as long as telson. Endopod with straight margins weakly converging to blunt terminus. Telson length 1.9 times maximum width and 1.5 times length of ultimate pleomere; width at terminus (measured between lateral margins of latero-terminal spines) 0.4 times maximum width near basis and 0.2 times telson length.

Paratype (♀)

Covers features requiring dissection. No pores or scales detected on carapace.

Eyes (Fig. 63A–E). Spiniform scales loosely scattered over dorsal face (Fig. 63E) and more densely in series along disto-lateral margin (Fig. 63D). About twenty completely internal, large, seemingly empty bodies present in lateral third of eye, here interpreted as residuals of ommatidia (Fig. 63C). Organ of Bellonci located mesially from these residuals; a completely internal sphere containing more than fifty small black bodies (Fig. 63B). No pores detected.

Antennula (Fig. 64A). Basal segment of trunk without antennular bursa, no ventral carina. Terminal segment with disto-median lobe armed with three small teeth increasing in size laterally, lobe disto-laterally with three barbed setae. This segment without callynophore, no female lobe.

Primary mouthparts (Fig. 64D–G). Both lobes of labrum with longitudinally narrow, rugged margin (Fig. 64D). Left mandibular palp (Fig. 64E) comparatively small, 3-segmented; basal segment contributes 11%, median segment 56% and apical segment 33% (not including laterally bent tip) to total palp length (right palp complete though artificially distorted). Median segment 3.1 times as long as wide, both margins slightly convex, lateral margin almost straight. Length of apical segment 2.7 times maximum width. Each palp with a few setae, not hispid, its basal segment without setae, median segment with 3–4 smooth setae on distal third of lateral margin and only one smooth seta on mesial margin at ⅔ of length from basis; apical segment with only 1–2 small setae on proximal half of lateral margin; its distal half

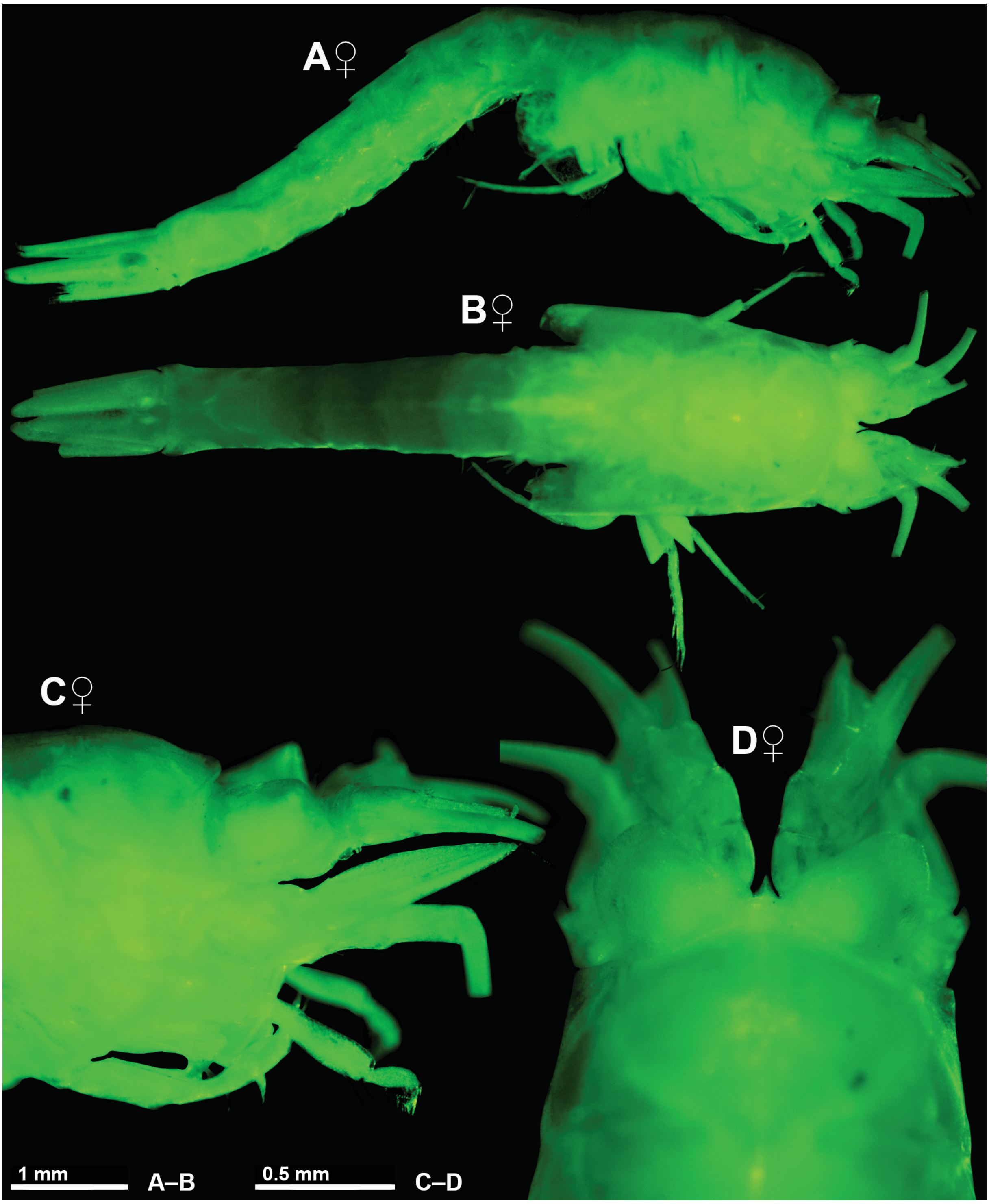

Fig. 62. *Mysidella antarctica* sp. nov., holotype, adult female with BL of 7.5 mm (ZMH 64682). **A–B**. Holotype in toto, lateral (A) and dorsal (B) views (thoracic endopods 2–8 and most exopods broken). **C–D**. Cephalon, lateral (C) and dorsal (D) views. Objects artificially separated from background.

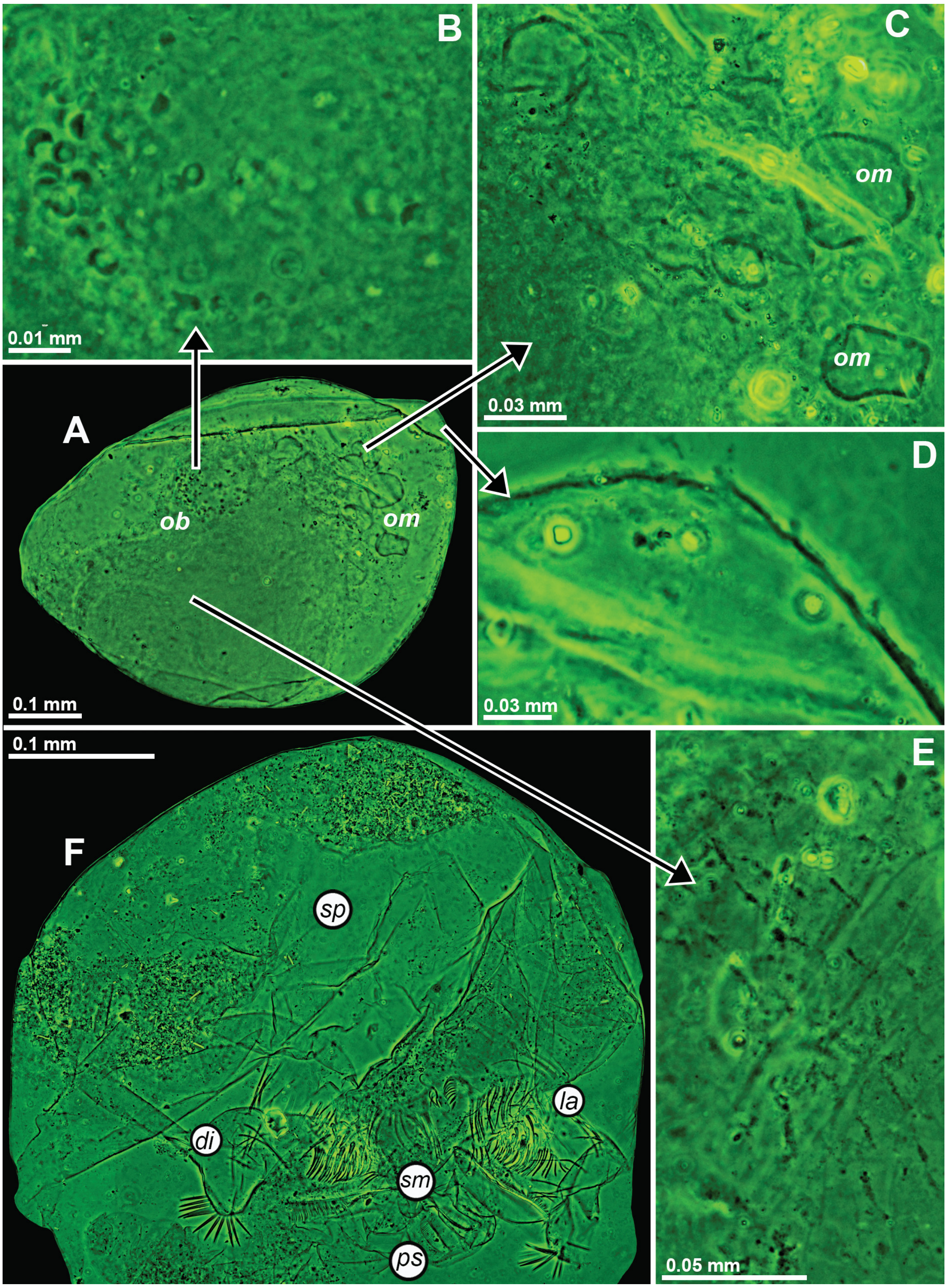

Fig. 63. Eyes and foregut in *Mysidella antarctica* sp. nov., paratype, adult female with BL of 7.9 mm (ZMH 64683). **A**. Right eye rudiment, dorsal view. **B–D**. Details of A, showing inclusions in organ of Bellonci (B), rudimentary ommatidia (C) and scales on anterior margin (D). **E**. Scales in respective position on dorsal face of left eye. **F**. Foregut, dorsal view, caudal fifth not shown. Abbreviations: *di* = dorsolateral infolding; *la* = lateralia; *ob* = organ of Bellonci; *om* = rudimentary ommatidia; *ps* = pyloric secondary filter; *sm* = superomedianum; *sp* = storage space. A, F. Objects artificially separated from background.

rostrally with 10–14 setae (rugged due to stiff barbs) along lateral margin; distal half of caudal face with longitudinal series of 6–8 barbed setae along ¼ of segment width from mesial margin, these setae with soft barbs. In addition, mandibular palp bears three setae at laterally bent tip, namely two setae with stiff barbs and a shorter seta without barbs, only largest barbed seta at tip extending beyond any other seta of

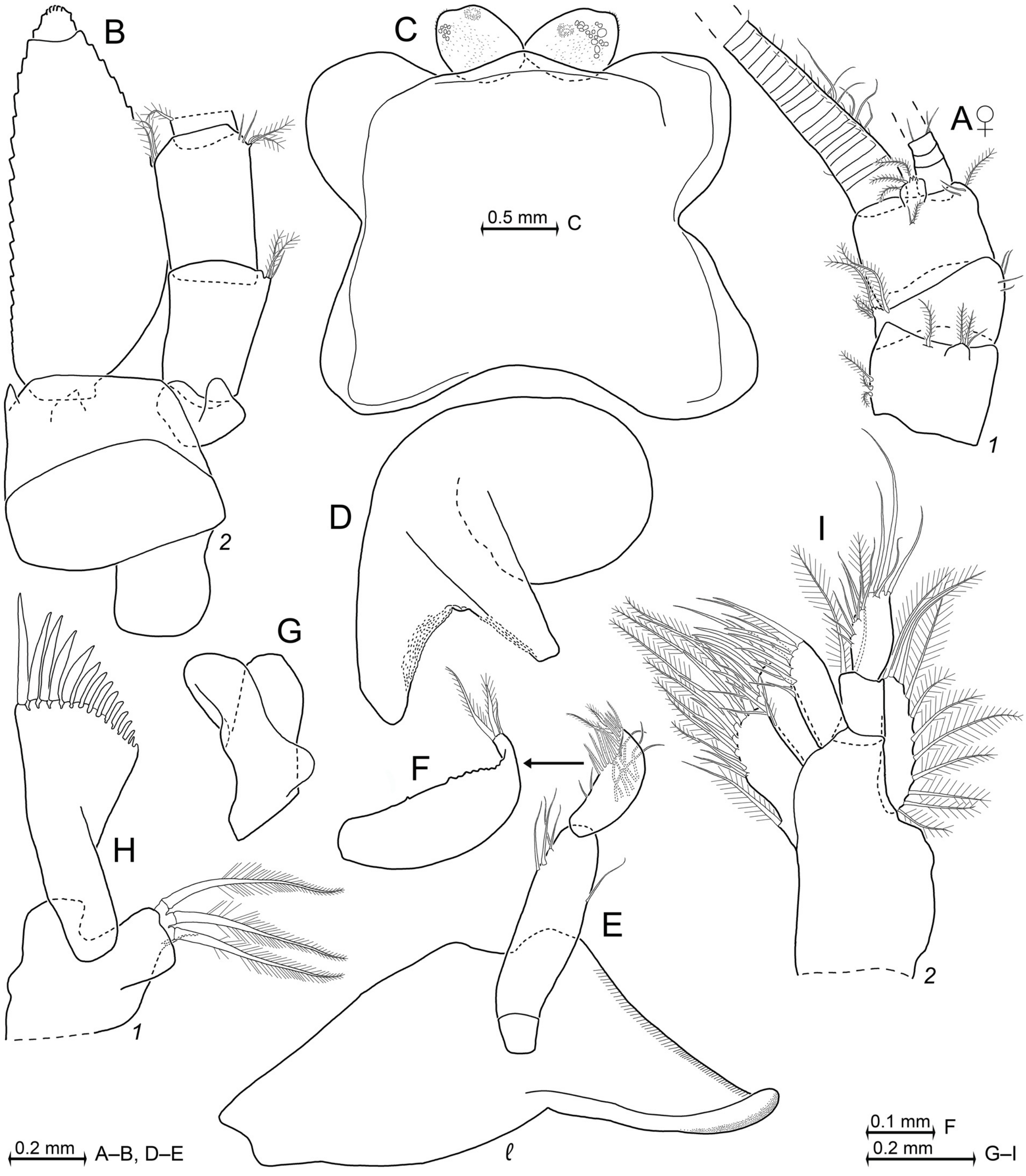

Fig. 64. *Mysidella antarctica* sp. nov., paratype, adult female with BL of 7.9 mm (ZMH 64683). **A**. Antennula, dorsal view. **B**. Antenna with antennal gland, dorsal view; setae of antennal scale omitted. **C**. Carapace and eyes expanded on slide, dorsal view. **D**. Labrum. **E**. Left mandible, rostral view. **F**. Detail of E, showing distal segment of palpus with only three distalmost setae depicted. **G**. Labium. **H**. Maxillula, rostral view. **I**. Maxilla, caudal view.

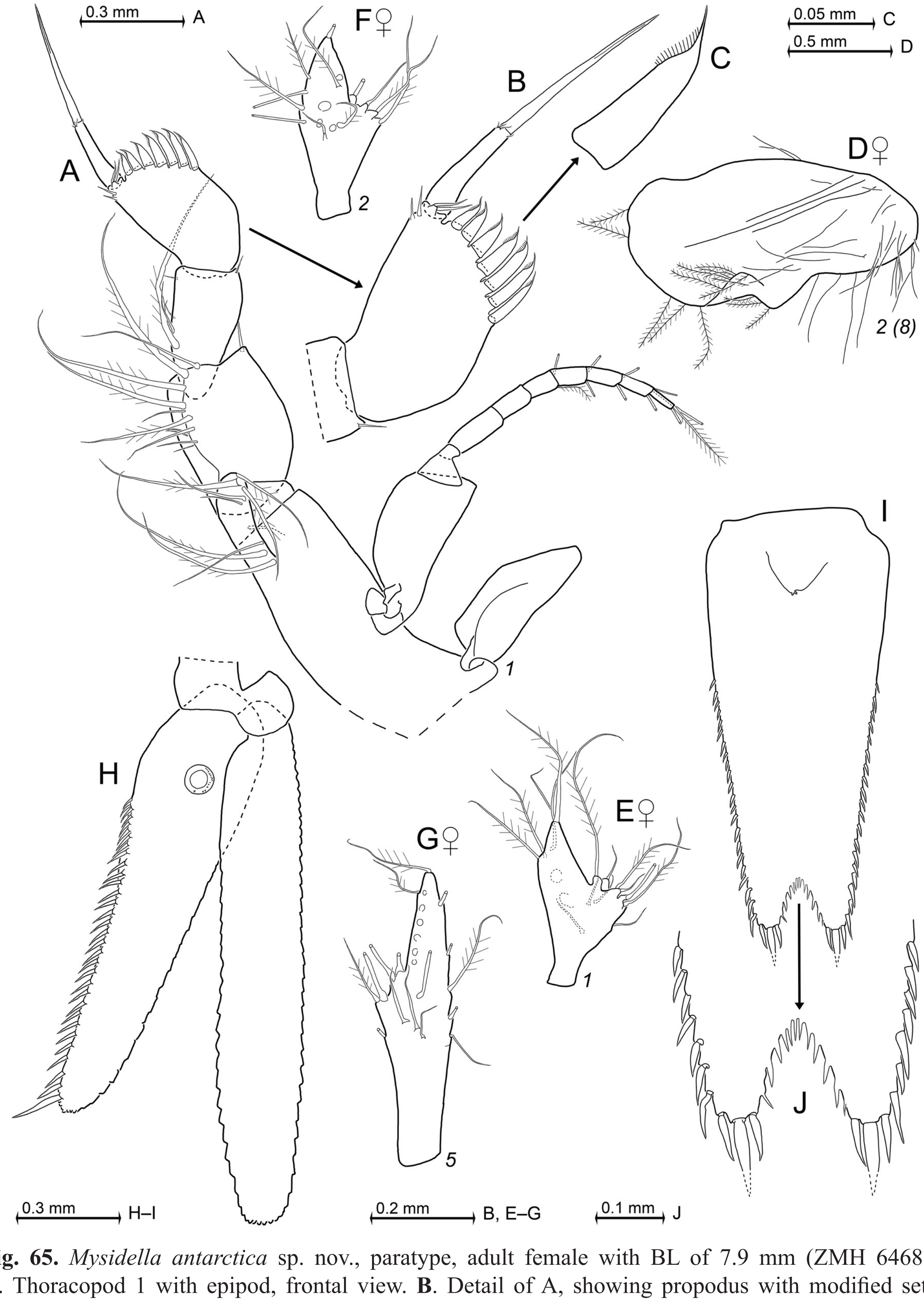

Fig. 65. *Mysidella antarctica* sp. nov., paratype, adult female with BL of 7.9 mm (ZMH 64683). **A**. Thoracopod 1 with epipod, frontal view. **B**. Detail of A, showing propodus with modified setae plus dactylus with nail. **C**. Detail of B, showing modified seta of propodus. **D**. Oostegite 2, inner face. **E**. Pleopod 1, mesial = caudal. **F**. Pleopod 2, lateral = rostral. **G**. Pleopod 5, lateral view. **H**. Uropods, ventral view, setae omitted. **I**. Telson, ventral view. **J**. Detail of I, showing terminus of telson. D–G. Many setae broken.

apical segment (Fig. 64F). Cutting edge of mandibles narrowly rugged along mesial margins (Fig. 64E). Labium bilobate, no seta detected (Fig. 64G).

Gut (Fig. 63F). Foregut with gross structure as in other Mysidae examined here. As a novelty within this family, foregut contains only smooth setae and smooth spines, no modified spines. No foreguts of any other species of Mysidellinae have been studied so far. Storage volume filled to 80% (partly removed in Fig. 63F) with unidentifiable masticated material and abundant mineral particles plus a few diatoms. Midgut content with essentially same material, though with smaller maximum size of particles. Anal lobe weakly cuticularized (Fig. 65I).

Maxillula (Fig. 64H). Distal segment with distally increasing width, length 2.3 times maximum width; with 14 smooth spines on transverse distal margin, no seta, no pores; spines in continuous series strongly decreasing in size mesially. Endite terminally with three large, barbed setae plus one tiny smooth seta.

Maxilla (Fig. 64I). Without pores. Sympod with three mesial lobes which are densely setose along disto-mesial margins. Exopod reaches to terminal margin of basal segment of maxillary palp. Exopod with plumose setae all along lateral margin; largest seta at tip; mesial margin bare. Distal segment of palp contributing ⅔ to total length; palp length 3.2 times maximum width. Distal segment densely setose on transverse terminal margin and on distal ⅔ of mesial margin; lateral margin bare, no spines. Terminal margin of proximal segment ventrally with two large barbed setae, lateral seta partly covered by distal segment in Fig. 64I.

Thoracopods (Fig. 65A–D). Basal plate of thoracic exopod 1 with smooth cuticle, length 1.4 times maximum width; plate with bluntly tipped rectangular disto-lateral edge; flagellum 7-segmented (Fig. 65A); exopods 6–8 with length of basal plate 1.7–2.2 times maximum width, flagellum 8-segmented. Epipod 1 leaf-like, 1.2 times as long as merus 1 in frontal view, no seta (Fig. 65A). Endopods 2–8 broken. Outer face of marsupium without setae; inside proximally with setae microserrated by minute stiff cils, ventrally and distally with barbed (plumose) setae (many setae broken in Fig. 65D).

Pleopods and tail fan (Fig. 65E–J). Pleopods 1–2 (Fig. 65E–F) of about same size, pleopods 2–5 increase in length caudally, no modified setae. Statoliths composed of fluorite, diameter 0.08–0.11 mm (n = 2). Telson with spines and laminae only, no setae, scales or pores.

Discussion

Morphology

Sensory pores

A group of 8–10 pores flanks a larger pore-like structure on the midline shortly in front of the posterior margin of the carapace in four species of the tribe Amblyopsini, namely *Amblyops tattersalli* (Fig. 13B), *Amblyopsoides fenestragothica* sp. nov. (Fig. 31D), *A. lepidophthalma* sp. nov. (Fig. 39B) and *Desmocornea subchelata* gen. et sp. nov. (Fig. 25E). Lerosey-Aubril & Meyer (2013) described similar pore patterns as a ‘sensory dorsal organ’ in certain decapods. Mauchline (1977) found a great variety of pore patterns on the carapace and integument of the body trunk in diverse crustacean orders including Mysida. Additional sites with diverse pore groups are here added for the uptilted anterior margin of the carapace (Fig. 14D), maxillula (Fig. 41D), propodus and dactylus of thoracic endopod 1 (Figs 7C, E, 40G), and for the telson (Figs 8G, I, 13C–D, 24F–G, 30F–G, 36C–D, 38E–F). Pores at tip of ocular papillae discussed below.

Eye structure and ontogeny

The lateral corneal ribbons (Fig. 27B) of *Desmocornea* gen. nov. superficially resemble the filaria of parasitic nematodes, some of which use crustaceans, including species of Mysidae, as intermediate hosts (Norris & Overstreet 1976). However, the ribbons showed no trace of internal organs typical of nematodes, but rather ommatidia-like structures symmetrically present in the left and right eyes of both dissected specimens.

Prehensile legs could be more efficient when supported by an imaging visual system. This combination was found along with clear ontogenetic changes in *D. subchelata* gen. et sp. nov. The juvenile had fully developed eyes, the immature male had nearly complete as well as clearly incomplete ommatidia, and the adult female exhibited throughout vestigial ommatidia not reaching the surface in the main (mesial) part of the eye. In parallel, the relative size of the ocular papillae decreased with the advancement of stages. All available stages had a small lateral eye lobe containing ommatidia in a parallel, ribbon-like arrangement. These ommatidia featured a banded rhabdom (Fig. 27D) in the juvenile and immature, not so in the adult. According to Land (2004), banded rhabdoms potentially provide a polarization analyzing system that could be useful for horizon detection and directional swimming.

In *Thalassomysis tattersalli*, Nouvel (1943) found no visual elements and only a minute ocular papilla in the eyes of the adult female holotype (defined by him in 1942) with a BL of 20 mm from the Bay of Biscay (NE Atlantic). Murano & Krygier (1985) reported imperfectly developed visual elements for an adult female with a BL of 17.5 mm. The respective drawing by Murano & Krygier (1985: fig. 4a) suggests an ocular papilla length of ⅒ of the antero-posterior extension of the eye. In the ANDEEP material the immature male with a BL of 13.4 mm showed less reduced eyes with the papilla measuring ⅕ of the eye extension (Fig. 10D). The immature female with a BL of 10.3 mm showed pigmented eyes with ommatidia reaching the surface and long papillae measuring ⅓ of the eye extension.

In conclusion, *T. tattersalli* and *D. subchelata* gen. et sp. nov. share a reduction of the cornea and shrinking of the ocular papillae with increasing body size and advancing age stages. The observed ontogenetic changes suggest that non-adults profit from food availability in the photic zone until having developed to (sub)-adults, whereupon they descend to safer deep-sea habitats for reproduction. Considering that a reversal of eye development after liberation of young is unlikely, the proposed developmental cycle implies that females reproduce only once during their lifetime. An analogous life cycle was concluded by Wittmann & Chevaldonné (2021) for *Mysidetes hanseni* Zimmer, 1914, reproducing in Antarctic marine ice caves.

Ocular papillae and the organ of Bellonci

Pores were recorded on top of the ocular papillae in nine mysid species of the ANDEEP material. Such pores are interpreted as the external parts of sensory pore organs found in diverse groups of crustaceans. According to Hallberg & Chaigneau (2004), a chemosensory function is plausible but has not been determined unequivocally. An organ of Bellonci (OB) was found here near the ocular papilla in nine species, but also found in seven species without an ocular papilla; four species lacked an OB. According to Hallberg & Chaigneau (2004), the OB likely has some sensory function, but this may vary among diverse crustacean groups. No potential sensory capability can be generalized, because more recent findings point to a function of the OB in endocrine control (Reddy & Reddy 2012; Ventura-López *et al.* 2016). Wittmann (2023) recorded OBs in 68 mysid species: they clearly increased in size while the cornea was reduced in five troglobiont species. That finding points to sensory functions (possibly together with other functions).

Validity and assignment of taxa

Amblyops tattersalli Zimmer, 1914

Among the 24 currently known species of its genus, *Amblyops tattersalli* differs from *A. arianii* sp. nov., *A. australiensis*, *A. longisquamosus*, *A. magnus* and *A. trisetosus* by having the blade of the antennal scale extending far beyond the tip of the distolateral tooth, from *A. tenuicauda* by the linguiform, terminally wide telson, from *A. ewingi* by the basally bare rather than all along spinose lateral margins of the telson, from *A. abbreviatus*, *A. aequispina*, *A. antarcticus*, *A. durbani*, *A. kempi* and *A. pacificus* by the flattened (Fig. 13C) rather than continuously rounded convex terminal margin of the telson, from *A. bipapillatus* sp. nov. by having one rather than two ocular papillae and from the remaining nine species by having eyes with a well-projecting ocular papilla rather than a knob-like papilla or no papilla.

Murano (2012) used "fine spinules" ('scales' in the present terminology) on eye rudiments among the diagnostic characters of *Amblyops* species. These structures therefore deserve some discussion. The here documented hispid surface (Fig. 11C–D) of the eye rudiments was not mentioned by Zimmer (1914) in the original description of a defective male of *A. tattersalli* from the Gauss Station on the coast of East Antarctica. However, "spinulose" structures were reported by W.M. Tattersall (1923) from the eye rudiments of a defective female taken off McMurdo Station (Ross Sea). In contrast, O.S. Tattersall (1965) explicitly stated that she did not detect such structures in three specimens of both sexes sampled near this McMurdo Sound station. These conflicting findings may have methodological reasons, because such scales are not visible at low resolution. The positive findings in Fig. 11C–D were obtained with 400 × microscopy.

Amblyops arianii sp. nov.

This new species differs from 20 out of the 23 acknowledged remaining species (including *A. bipapillatus* sp. nov.) of its genus by having fewer (9–11) spines on each lateral margin of the telson. The other three species with few spines are *A. durbani* (10–12 spines), *A. australiensis* (11–12) and *A. tenuicauda* (12). The respective numbers of spines are in the total range of 17–48 in the remaining twenty species of the genus. In addition, *A. tenuicauda* differs by having the narrowest distal ⅔ of the telson within the genus. *Amblyops arianii* sp. nov. shows a stout antennal scale whose length is only 2.6–2.8 times the maximum width. This ratio is clearly smaller than for the more slender scales in *A. durbani* (ratio 3.4–3.5), *A. australiensis* (3.8), *A. tenuicauda* (3.7) and 13 additional species (total range 3.0–4.1). Besides *A. arianii* sp. nov. (ratio 2.6–2.8) stout scales are found in *A. antarcticus* sp. nov. (2.4–2.6), *A. okinawensis* (2.9) and *A. timorensis* (2.3). Compared with *A. arianii* an overlapping range (2.6–3.2) is found in *A. tattersalli*. The ratio is unknown in *A. aequispina*, *A. bipapillatus* sp. nov. and *A. ewingi*. Overall, the proposed specific status of *A. arianii* sp. nov. is based on the unique combination of low spine numbers on the lateral margins of the telson (Fig. 19D) with a stout antennal scale (Fig. 16C). The three species with an unknown proportion of the antennal scale do not interfere due to their great spine numbers (22–37).

The complex armature of the foregut (Fig. 17) of *A. arianii* sp. nov. shows some limited similarity with that of *Desmocornea subchelata* gen. et sp. nov. (Fig. 29B–E) and differs more strongly from that of the remaining foreguts of Erythropinae studied here (Figs 6, 12, 22, 34, 40B–E, 43B–E, 47, 52, 56, 60B–E). Only few detailed data on foreguts are available in the published literature. Future data on additional species are greatly welcome.

Amblyops bipapillatus sp. nov.

This species is immediately recognizable by its having two ocular papillae on the eye rudiments (Figs 20A, 21A) vs only one or even no papilla in all 23 remaining acknowledged species of *Amblyops*. In addition, its thoracic endopod 2 differs from that of all remaining congeners for which this appendage is known (18 out of 23) by having a reflexed dactylus (Fig. 23C–D). The new species shares the presence of a single minute mid-terminal spine on the telson (Fig. 24H) with three species, namely *A. spiniferus*, *A. kempi* and *A. manazuruensis*. The latter three species show a continuously rounded terminal margin of the telson vs a short flattened margin (Fig. 24H) in the new species. There is an individual variation of 1–2 minute spines on the telson in *A. kempi* and *A. manazuruensis*. A pair of minute paramedian spines is present in eight other species vs no such pairs being present in twelve species. The minute spines are associated with a pair of paramedian setae in all twelve species that exhibit any minute spine; the set formed by setae and minute spines is always flanked by large spines.

Amblyopsoides fenestragothica sp. nov.
This new species differs from the other six of its genus listed in the above inventory by having uropods without a spine (Fig. 35L) vs the presence of one spine on the endopod, and by having a telson with a disto-median ogival indentation of 5% of telson length (Fig. 36A, F) vs a broadly rounded indentation, if any, of < 4% of telson length (Fig. 38E, G).

Amblyopsoides lepidophthalma sp. nov.
This new species is distinguished from its six congeners by the following features: lateral margin of antennal scale smooth up to a tooth at about ⅔ of length from the basis in *A. halleyi* vs at half-length in the new species (Fig. 39D); eye rudiments sub-rectangular in *A. ohlinii*, *A. crozetii* and *A. halleyi* in dorsal view vs mesially narrowing (Figs 38A, 39A); center of eye rudiments dorsally smooth in *A. ohlinii*, *A. crozetii* and *A. obtusa* vs hispid (Fig. 38D) in the new species. As shown in published figures of type specimens, the anterior margin of the carapace is continuously widely rounded in *A. ohlinii* (W.M. Tattersall 1951: fig. 45a) and in *A. crozetii* (G.O. Sars 1885: pl. xxxiii fig. 11), but obtuse-angular, distally pointed in *A. obtusa* (O.S. Tattersall 1955: fig. 24b) vs ending in a subtriangular rostrum with a rounded terminus in *A. lepidophthalma* sp. nov. (Figs 37C–D, 39A). The numbers of spines on the distal ⅔ of each lateral margin of the telson are 10–12 in *A. laticauda* comb. nov., 15–23 in *A. halleyi*, ≈ 17–20 in *A. obtusa* and 18–20 in *A. ohlinii* vs 20–26 in the new species. The telson lacks a terminal indentation in *A. obtusa* and *A. laticauda* comb. nov., unlike presence of a mid-terminal indentation in the remaining five species. The terminal margin of the telson lacks laminae in *A. laticauda* comb. nov. vs the presence of a pair of paramedian laminae (Fig. 38G). The terminal margin has 4–7 pairs of large spines in *A. crozetii* vs 2–3 pairs in the new species. Differences from *A. fenestragothica* sp. nov. are indicated above.

Some of the features described by Petryashov (2006: panels 7–10 in plate 5) as pertaining to *A. crozetii* also fit this species, but some other features approach the new species: eye rudiments (panel 7) not sub-rectangular though with (mesially or laterally?) converging margins and the telson (panel 9) having three pairs of large spines on the terminal margin point to the new species. The centrally smooth dorsal face of the eye rudiments (panel 7) and 6–7 pairs of large spines on the terminal margin of the telson (panel 10, page 1409) in other specimens point to *A. crozetii*. The trapezoid shape of the telson (panel 9) with a narrow terminal margin does not conform to the structure of either species. Petryashov (2006) probably matched together specimens of more than one species, whereby the final identification would require additional data.

Amphiakrops gen. nov.
This new genus differs from the remaining genera of Erythropinae by having eye rudiments with both anterior edges produced into tooth-like processes (Fig. 59C; no ocular papilla), the eyes set apart, no visual elements, in combination with a 3-segmented antennal peduncle and a trapeziform, terminally truncate telson equipped with spines and mid-terminal setae. These features are also present in two previously described species of *Paramblyops*: using the original names these species are *P. bidigitata* W.M. Tattersall, 1911 and *P. japonica* Murano, 1981; based on these features, these species are here recombined as *Amphiakrops bidigitatus* (W.M. Tattersall, 1911) comb. nov. and *A. japonicus* (Murano, 1981) comb. nov. The endopod of the male pleopod 4 has modified setae in the type species, *A. brandtae* gen. et sp. nov. (Fig. 61D); this feature is unknown in the other two species of *Amphiakrops* gen. nov.

The genus *Teratamblyops* Murano, 2001 also shows eye rudiments with both anterior edges produced into tooth-like processes, but it differs strongly from *Paramblyops* and *Amphiakrops* due to its bipartite third segment of the antennular trunk, 4-segmented antennal peduncle and its triangular telson having a narrow apex.

Amphiakrops brandtae gen. et sp. nov.
Amphiakrops bidigitatus (W.M. Tattersall, 1911) comb. nov. differs from the new species by having a triangular, apically acute rostrum reaching beyond the median segment of the antennular trunk (vs a small rostrum, almost inexistent), by having an antennal scale without a distal lobe (vs a large lobe) and by having a telson with spines along the distal ≥¾ (vs ≤⅗) of the lateral margins.

Amphiakrops japonicus (Murano, 1981) comb. nov. differs from the new species by its much larger eye rudiments, by having a longer rostrum and by the endopod of the uropods having a shorter spine near the statocyst.

Dactylerythrops bidigitatus W.M. Tattersall, 1907 shows some superficial similarity with the new genus and species but differs by having eye rudiments with two blunt ocular papillae rather than non-sensory tooth-like projections and by having eye rudiments basally and mesially connected rather than separate. The telson is linguiform, apically well-rounded rather than trapeziform and terminally transversely truncate.

Chelamblyops gen. nov.
In the original description of *Paramblyops globorostris*, Birstein & Tchindonova (1970) discussed differences from the other three species of *Paramblyops* known at that time, but not the reasons for its affiliation to this genus. This species differs from the genera *Amblyops*, *Dactylamblyops* and *Paramblyops* by the peculiar structure of its eyes mid-apically converging to an acute process. In addition it differs from *Amblyops* by having a 3-segmented rather than 4-segmented antennal peduncle and from *Paramblyops* by the eyes being densely packed with visual elements showing no pigment. The eyes of *Chelamblyops globorostris* (Birstein & Tchindonova, 1970) comb. nov. are likely capable of some light perception, but the extent is currently unknown. *Chelamblyops* gen. nov. differs from all genera of Erythropinae except *Aberomysis* Băcescu & Iliffe, 1986 and *Desmocornea* gen. nov. by having a prehensile thoracic endopod 2. From *Aberomysis* and *Desmocornea* it differs also in its eye structure and in a number of additional features. In summary, *Chelamblyops* gen. nov. is characterized by a unique combination of eye structure, segmental numbers of the antennal peduncle and the prehensile second thoracic endopod.

Dactylamblyops murrayi W.M. Tattersall, 1939
This species belongs to the *hodgsoni* group defined by Murano (1981) based on its pyriform eyes with a somewhat imperfectly developed cornea, eyes without a membranous ledge, tooth-like process in the most distal position on the outer margin of the antennal scale and the triangular to linguiform (terminally not truncated) telson lacking setae. The dorsoventrally compressed eyes do not conform to the definition given by Murano (1981); nonetheless, he included this species in the *hodgsoni* group.

The present damaged female from the Weddell Sea conforms well to the description of the types from the Arabian Sea by W.M. Tattersall (1939). The structure of the eyes, uropods and telson (Figs 1–2) also fit the more detailed description of an adult female from Sagami Bay (Japan) by Ii (1964: figs 74–75), disregarding the observation that the sizes indicated by Ii (1964) for the uropods and the telson in the text and in his fig. 74a are not consistent with those in his fig. 75h–i. The three pairs of oostegites in the present specimen, as is normal in Erythropinae, do not match the only two pairs reported by Ii (1964). It appears likely that Ii (1964) counted only the two pairs of large oostegites as forming the marsupium, while considering the pair of small ones as rudimentary.

The seven other species (see next subsection) of the *hodgsoni* group, including *D. benthophilus* sp. nov., fit the available features of the present damaged specimen much less. See also the keys to the species of this group in San Vicente & Cartes (2011) and the key to all congeners given below.

Dactylamblyops benthophilus sp. nov.
This new species fully conforms to the *hodgsoni* group as defined by Murano (1981). The seven species of this group acknowledged by San Vicente & Cartes (2011) differ from the new species in the following features:

Dactylamblyops atlanticus Murano & Mauchline, 1999 shows a semicircular anterior margin of the carapace, an unsegmented antennal scale, the basal plate of thoracic exopods with a well-rounded outer edge, the sympod of male pleopod 1 lacking setae and the exopods of male pleopods 2–3, 5 with fewer (13) segments.

Dactylamblyops corberai San Vicente & Cartes, 2011 shows a longer ocular papilla reaching to the distal end of the cornea, the sympod of male pleopod 1 lacking setae, the endopod of uropod with more (3) spines and the telson with fewer (15–16) spines on each lateral margin.

Dactylamblyops fervidus Hansen, 1910 shows a shorter antennal scale not extending beyond the antennular trunk, the terminal lobe of the scale extending beyond the tooth on the outer margin, the scale length only 2.5 times the maximum width and the telson with fewer (19) spines on each lateral margin plus two spines on the narrow terminal margin.

Dactylamblyops hodgsoni Holt & Tattersall, 1906 shows ocular papillae measuring 20–29% of eye length, not extending beyond the cornea. The antennal scale does not reach the end of the antennular peduncle. The rostral lobe of the penis exhibits a dense field of minute hairs terminally. Male pleopods 1–5 have fewer segments, namely the endopods with 1, 11, 11, 10 and 10 segments, the exopods with 11, 11, 11, 11 and 10 segments, respectively. Each lateral margin of the telson has fewer (16–19) spines.

Dactylamblyops latisquamosus Illig, 1906 is distinguished by having a triangular rostrum with an acute apex, a distal lobe of the antennal scale extending beyond its tooth on the outer margin, the scale length being only 1.9 times the maximum width, the sixth pleomere being as long as the combined pleomeres 3–5 and each lateral margin of the telson having fewer (20) spines.

Dactylamblyops murrayi W.M. Tattersall, 1939 shows a large ocular papilla projecting beyond the cornea, the cornea transversely positioned on the end of the eyestalk (Fig. 1A, D), a large triangular rostrum extending beyond the eyes and the antennal scale not subdivided. The female lobe is smaller and bears minute rather than well-developed setae.

Dactylamblyops stenurus Murano, 1969 shows a longer antennal scale, extending half (vs 0.3–0.4 times) of its length beyond the antennular trunk, a triangular rostrum that is distally narrowly (almost acutely) vs broadly rounded, the sympod of male pleopod 1 lacking setae, the exopod of male pleopods 1 and 4 with fewer segments (11 vs 13–14 in pleopod 1, and 12 vs 14 in pleopod 4, respectively) and the lateral margins of the telson having fewer (19–20 vs 24–31) spines.

Desmocornea subchelata gen. et sp. nov.
This new genus and species is exceptional among Erythropinae by having the lateral eye lobe containing ommatidia in a linear arrangement, together forming a self-contained ribbon probably capable of a specialized mode of light perception. As an additional rare character, *Desmocornea subchelata* gen. et sp. nov. shares the presence of a prehensile thoracic endopod 2 with *Chelamblyops globorostris* (Birstein & Tchindonova, 1970) comb. nov. and *Aberomysis muranoi* Băcescu & Iliffe, 1986. The affiliation of *Desmocornea* gen. nov. at the tribus level is not quite clear. It is here provisionally affiliated with the tribe Amblyopsini due to its sharing a 4-segmented antennal peduncle and separate eyes without moveable eyestalks with the genus *Amblyops*. However, a 4-segmented peduncle is also found in Thalassomysini, which otherwise differs by having a strongly asymmetrical labrum.

Paramblyops petrescui sp. nov.
This species fits perfectly into the diagnosis of the genus *Paramblyops* in the structure of the eyes, antennula, antennal scale, antennal peduncle, non-prehensile endopod of thoracopod 2, uropods and telson. It differs from the remaining six species of its genus by having a very short, rounded (vs acute or blunt) rostrum laterally delimited by a pair of small, tooth-like anterior projections of the carapace (Fig. 42C) and by having an antennal sympod without a tooth (Fig. 42B) vs presence of two teeth. A rounded rostrum (not delimited by teeth) is also present in *Chelamblyops globorostris* comb. nov. and *Amphiakrops brandtae* gen. et sp. nov. (Fig. 59C) and in *P. japonicus*, the latter taxon here recombined as *A. japonicus*. comb. nov. Remarkably, both these species of *Amphiakrops* gen. nov. share a similar telson structure with *P. petrescui* sp. nov. (Fig. 61J vs Fig. 44G). Nonetheless, they clearly differ from *P. petrescui* by having both disto-lateral edges of the eye rudiments produced into tooth-like processes and by having at least one tooth emerging from the disto-lateral edge of the antennal sympod. *Chelamblyops globorostris* differs from *P. petrescui* among other features by having the endopod of the uropods without a spine, the anterior margin of the labrum with an acute median projection rather than a rounded protrusion, the antennal sympod bearing a tooth near the disto-lateral edge and by having a prehensile thoracic endopod 2.

Schizurakrops meesi gen. et sp. nov.
This monotypic genus is exceptional within the Erythropinae by having a deep telson cleft (Fig. 57J–K) lined with laminae, otherwise typical of Boreomysinae, Gastrosaccinae, Heteromysinae, Mysidellinae and certain Mysinae. Within the Erythropinae, a rounded terminal cleft is present in the monotypic genera *Inusitatomysis* Ii, 1940 and *Neoamblyops* Fukuoka, 2009, but their clefts are furnished with a pair of paramedian setae. The former genus distinctly differs from *Schizurakrops* gen. nov. by its large, well-developed eyes and the latter genus by having both eyes fused to a single bar and by having a broadly rounded antennal scale, setose all around, without a spine. These differences suffice for the definition of a new genus. Among the genera of the tribe Amblyopsini, a small mid-terminal notch armed with a few laminae (Fig. 53H–I) is present in the telson of the genus *Stellamblyops*, which differs from *Schizurakrops* gen. nov. by having a longer finger-like extension of the eyes, a shorter rostrum, acute disto-lateral projections of the carapace and a waisted, notched telson rather than a trapezoid, terminally deeply cleft telson.

Scolamblyops muehlenhardtae sp. nov.
The genus *Scolamblyops* differs from the remaining genera of Erythropinae by having roughly rectangular eye rudiments, mesially tightly set though not fused, each with a lateral margin distally projecting in a strong tooth, and lacking visual elements, in combination with the terminal spines of the telson continuously increasing in length laterally, leaving a characteristic triangular spine-free portion between the left and right spine series (Fig. 49L). The genus now includes only two species, whereby *S. japonicus* differs from *S. muehlenhardtae* sp. nov. by having a labrum without a tooth-like rostral projection, a shorter rostral process on the clypeus and a longer bare stretch on the lateral margins of the telson.

Stellamblyops doryphorus sp. nov.
The known characters of the genus *Stellamblyops* fit well with the revised definition of the tribe Amblyopsini given by Petryashov & Frutos (2017). The new species shares the presence of a long, finger-like anterior extension of the lateral margin of the rudimentary eyes (Fig. 50C), as well as a lateral constriction and small mid-terminal notch of the telson (Fig. 53H–I), with *Stellamblyops*. According to Petryashov & Frutos (2017), such notches are not found in any other genus of the tribe. In addition, the new species proposed here differs from all known Amblyopsini, except *Schizurakrops* gen. nov., by having an antennal sympod with three (rather than 1–2) teeth near the disto-lateral edge; it also differs from the type species, *Stellamblyops vassilenkoae*, by its dorsoventrally (rather than laterally) compressed eyes. Petryashov & Frutos (2017) claimed the lateral compression of the eye rudiment as

a main argument for establishing the genus *Stellamblyops*. Nonetheless, eye compression is removed from the above proposed diagnosis of *Stellamblyops*, rather than being used to establish a potential new genus; this proposal is based on the strong coincidence of anterior eye extension and telson structure between *S. doryphorus* sp. nov. and the type species *S. vassilenkoae*.

Mysidella antarctica sp. nov.
Among the 18 here acknowledged species of this genus, the new species shares the presence of eyes with reduced visual elements (Fig. 63A) only with *M. typhlops* G.O. Sars, 1872, from the deep waters of the NE Atlantic, while the remaining 16 species are equipped with a fully developed functional cornea. *Mysidella typhlops* differs from the new species by many features, e.g., the longer median segment of the antennal peduncle, 1½ times as long as the distal segment, the propodus of thoracic endopod 1 having only four spiniform setae, the ultimate spine on the endopod of uropods not being longer than the penultimate spine and the minute telson being cleft, with only two laminae.

Keys to the taxa of Erythropinae and Mysidellinae

The keys below, valid at a world-wide scale, are mostly none-analytical; they give precedence to externally visible, countable and measurable characters without dissection. Some heterogeneity is inevitable due to missing data. The keys are hierarchically organized as separate keys for tribus, genera and species. Taxa at equal level are listed in alphabetic order. Data on distribution are updated from O.S. Tattersall (1955), Birstein & Tchindonova (1958), Murano (1974b, 2012), Price (2001), Petryashov (2006, 2014a, 2014b), San Vicente (2010) and Astthorsson & Brattegard (2022).

Mysidae with the carpus of thoracic endopods 3–8 separated from the propodus by an oblique articulation is the main autapomorphy, even though in a few taxa this separation is a transverse articulation; eyes with great diversity from well-developed to reduced and from separate to fused; antennal scale of most taxa with bare portion of lateral margin ending in a tooth, scale less frequently setose all around or reduced; mouthparts normal; ♀♀ with 2–3, rarely 4, fully developed pairs of oostegites, often with additional pair of reduced oostegites; pleomeres without projecting pleural plates in both sexes (however present in ♂♂ of *Meierythrops parvispinis* Fukuoka & Murano, 2001); ♀ pleopods 1–5 uniramous and unsegmented while numbers of rami (1–2) and segments vary according to taxa in ♂♂; endopods as well as exopods of ♂ pleopods 3–5, most frequently of endopod 4, in most cases show, if any, rather weakly modified setae; pseudobranchial lobes of pleopods in both sexes never curved or coiled; endopods and exopods of uropods undivided; telson entire, less frequently weakly indented, rarely cleft, terminal margin with spines and in many taxa with mid-terminal pair of setae ....
....subfamily **Erythropinae** Hansen, 1910 (8 tribes, 61 genera, 263 species)

Key to the tribus of Erythropinae

1. Eye rudiments reduced to immotile bars, pads or cones (plates, fused or separate), no definite stalk 2
– Eyes separate with well-developed moveable stalk 6

2. Eye rudiments separate, distantly (Fig. 50B) or tightly (Fig. 33A) set ....
....**Amblyopsini** Tchindonova, 1981 (14 genera)
– Eye rudiments fused to a common bar 3

3. Eye rudiments fused to a common bar with anterior, median cleft or at least a superficial median indentation, all ♂ pleopods biramous ....
....**Pseudommini** Wittmann, Ariani & Lagardère, 2014 (3 genera)
– Eye rudiments fused to a common bar without median cleft, with or without pair of horn-like protrusions 4

4. Basal segment of antennular trunk with ventral carina; lateral margins of telson serrated by small teeth rather than spines, all ♂ pleopods biramous ... **Mysimenziesini** Tchindonova, 1981 (2 genera)
– Basal segment of antennular trunk without ventral carina; lateral margins of telson with or without spines, no teeth 5

5. Lateral margins of telson bare or with spines along distal portions; all pleopods uniramous, unsegmented in both sexes except that ♂ pleopod 4 may be sub-segmented ....
.... **Calyptommini** W.M. Tattersall, 1909 (3 genera)
– Telson triangular, most of lateral margins with spines; pleopods 3–4 biramous in non-adult ♂ ....
.... unassigned: ***Xenomysis*** Kou, Meland & Li, 2020

6. Antennal scale missing or vestigial; telson with bare lateral margins ....
.... **Arachnomysini** Holt & Tattersall, 1905 (4 genera)
– Antennal scale normal, with tooth on outer margin or less frequently without tooth 7

7. Labrum strongly asymmetrical; four pairs of fully developed oostegites ....
.... **Thalassomysini** Nouvel, 1942 (1 genus)
– Labrum normal, symmetrical; 2–3 pairs of fully developed oostegites 8

8. Three pairs of normal oostegites plus a vestigial pair on thoracomere 5; all pleopods uniramous, represented by unsegmented endopods in both sexes with the only exception that endopod 4 is elongate, multi-segmented, and apically furnished with modified setae in ♂♂; cornea well-developed; telson with strong apical cleft ....**Inusitatomysini** Wittmann, Ariani & Lagardère, 2014 (1 genus)
– No oostegites on thoracomere 5; ♂ pleopods 2–5 well developed, biramous, in several genera modified setae may be present on any of ♂ pleopods 3–5, mostly on endopod 4; cornea mostly well developed, in a few genera reduced to some extent; telson mostly undivided, with distinct apical cleft in only a few genera ....**Erythropini** Hansen, 1910 (32 genera)

Keys to the genera of the subfamily Erythropinae

Separate keys for the eight tribus in alphabetic order, total of 61 genera including one unassigned genus.

Key to the genera of the tribus Amblyopsini

1. Eye rudiments separately set though connected at base by membranous integument ....
.... ***Dactylerythrops*** Holt & Tattersall, 1905 (5 species)
– Eye rudiments separate, not connected by membranous integument 2

2. Eye rudiments not extended into non-sensory tooth-like projection, mostly with ocular papilla (Figs 20A–B, 26C) 3
– Eye rudiments with one or less frequently with two tooth-like, non-sensory distal projections (Figs 46D, 50C), no ocular papilla 8

3. Second thoracic endopod prehensile by reflexed elongate dactylus (Fig. 29I–J); bilobate eyes set laterally apart, main lobe with peripheral distribution of ommatidia, lateral lobe with self-contained ribbon (Fig. 27B) formed by linear series of oblong ommatidia; antennal peduncle 4-segmented .... ***Desmocornea*** gen. nov. (1 species)
– Second thoracic endopod not prehensile; eyes without any or with strongly reduced ommatidia ... 4

4. Antennal peduncle 4-segmented (Figs 16C, 21B); lateral margin of antennal scale bare up to a distal tooth at < ¼ of scale length from apex (positioned on apex in Fig. 16C) ....
.... ***Amblyops*** G.O. Sars, 1872 (24 species)
– Antennal peduncle 3-segmented (Fig. 33D) 5

5. Eye rudiments semicircular in dorsal view, with distal hump instead of a clear ocular papilla; lateral margin of antennal scale bare up to a tooth at < ¼ of scale length from apex .... ***Eoamblyops*** Murano, 2013 (1 species)
– Eye rudiments not semicircular, with clear ocular papilla (Figs 32D, 33A) 6

6. Eye rudiments cylindrical; third segment of antennal peduncle inserts laterally on second segment; lateral margin of antennal scale bare up to a tooth at < ¼ of scale length from apex; ♂ pleopod 4 with modified setae on endopod as well as exopod ..***Gibbamblyops*** Murano & Krygier, 1985 (1 species)
– Eye rudiments not cylindrical; three segments of antennal peduncle lined in same plane; ♂ pleopods without modified setae 7

7. Eye rudiments pyriform to sub-quadrate with ocular papilla on dorsal face; lateral margin of antennal scale bare up to a large tooth at > ¼ of scale length from apex (Fig. 33D); telson trapezoid, terminally with (Figs 36F, 38G) or without notch ....***Amblyopsoides*** O.S. Tattersall, 1955 (7 species)
– Eye rudiments reduced to sub-conical processes with ocular papilla on mesial margin; lateral margin of antennal scale bare up to a tooth at < ¼ of scale length from apex; telson long, triangular .... ***Pseudamblyops*** Ii, 1964 (1 species)

8. Thoracic endopod 2 prehensile by reflexed dactylus; eyes roughly conical, narrowing distally, tip produced into an acute projection, (unpigmented) eyes densely packed with ommatidia .... ***Chelamblyops*** gen. nov. (1 species)
– Thoracic endopod 2 not prehensile; eye rudiments dorsoventrally flattened with only lateral (Fig. 50C) or with both distal (Fig. 59C) edges produced into a tooth-like, non-sensory projection 9

9. Eye rudiments with two tooth-like, non-sensory projections (Fig. 59C) 10
– Eye rudiments with only disto-lateral edge produced into a tooth-like, non-sensory projection (Fig. 50C) 11

10. Third segment of antennular trunk undivided (Fig. 59A); antennal peduncle 3-segmented (Fig. 59B) ....***Amphiakrops*** gen. nov. (3 species)
– Third segment of antennular trunk divided into two portions; antennal peduncle 4-segmented, its third segment dorsally overlying part of larger fourth segment ....***Teratamblyops*** Murano, 2001 (3 species)

11. Telson with deep apical cleft densely lined with laminae, no setae (Fig. 57K) ....***Schizurakrops*** gen. nov. (1 species)
– Telson entire (Figs 49K, 61J) or at most with a shallow mid-terminal indentation (Fig. 44H) 12

12. Eye rudiments sub-quadrate, tightly set but not fused (Fig. 46D); telson trapezoid, terminal margin with spine length increasing in continuous series from paramedian to disto-lateral spines, leaving a characteristic triangular spine-free portion between left and right spine series (Fig. 49K–L), no setae ....***Scolamblyops*** Murano, 1974 (2 species)
– Eye rudiments not tightly set (Figs 42C, 50B); size of terminal spines of telson not increasing in continuous series laterally 13

13. Eye rudiments with long, slender apical projection extending beyond median segment of antennular trunk (Fig. 50C); telson linguiform with lateral constriction at ⅓ of length from terminus (Fig. 53H), no setae ....***Stellamblyops*** Petryashov & Frutos, 2017 (2 species)
– Eye rudiments with disto-lateral projection not reaching beyond median segment of antennular trunk (Fig. 41C); telson trapezoid, not constricted, distally with median or paramedian pair of setae flanked by spines ....***Paramblyops*** Holt & Tattersall, 1905 (7 species)

Key to the genera of the tribus Arachnomysini

1. Thoracopod 1 with vestigial exopod; antennal scale vestigial; prickly habitus due to carapace and pleomeres being furnished with great numbers of spines (teeth) .... ***Caesaromysis*** Ortmann, 1893 (1 species)
– Thoracopod 1 with well-developed exopod bearing a multi-segmented flagellum 2

2. Cephalothorax normal, shorter than pleon; carapace and pleomeres 1–5 ornamented with a great number of long spiniform projections, rostral teeth extending beyond eyes; telson short, triangular with sigmoid lateral margins and transverse terminal margin, the latter with pair of paramedian setae flanked by a pair of small spines on disto-lateral edge .... ***Chunomysis*** Holt & Tattersall, 1905 (1 species)
– Cephalothorax long due to elongated first or eight segment, rendering pleon much shorter than thorax; carapace and pleomeres 1–5 ornamented with spiniform projections; rostral spines, if any, not extending beyond eyes 3

3. First thoracomere extremely elongated, separating first endopod from its rudimentary exopod and epipod, remaining thoracomeres normal; eyes with extremely long stalks; antennal scale reduced to a spiniform process; short telson heart-shaped, distally with minute rounded indentation flanked by a pair of short spines ....***Arachnomysis*** Chun, 1887 (2 species)
– Thoracomere 8 strongly elongated, remaining thoracomeres normal; eyes with normal, non-elongated stalks with or without small papilla; no antennal scale; short telson triangular, distally with pair of setae projecting from minute to somewhat larger, rounded indentation ....***Gymnerythrops*** Hansen, 1910 (3 species)

Key to the genera of the tribus Calyptommini

Modified from Wittmann (2020).

1. Eye bar laterally with pair of distantly set, anteriorly directed, conical lobes; telson about as long as wide, lateral margins bare all along ....***Abyssomysis*** Wittmann, 2020 (1 species)
– Eye bar without lateral conical lobes; telson length at least twice maximum width, lateral margins with spines 2

2. Eye bar with tooth-like projections flanking a median depression; telson subtriangular, terminally rounded ....***Calyptomma*** W.M. Tattersall, 1909 (1 species)
– Eye bar without or with a very small median depression; telson trapezoid, terminally rounded .... ***Michthyops*** W.M. Tattersall, 1911 (3 species)

Key to the genera of the tribus Erythropini

Modification of ♂ pleopods updated from Fukuoka & Murano (2006).

1. Thoracomere 8 strongly elongated, remaining thoracomeres normal ....***Longithorax*** Illig, 1906 (7 species)
– Thoracomere 8 normal-sized 2

2. Eyes with bipartite cornea forming a large distal and a smaller lateral ‘eye’ on the same eyestalk (not considering entire corneas with ommatidia-free areas); antennal scale small to normal-sized 3
– Cornea entire (not considering division by a membranous ledge), ommatidia well developed or less frequently reduced to some extent 6

3. Antennal scale unsegmented; lateral margins of telson converging to a rounded apex; carapace and pleomeres furnished with great numbers of spines or teeth 4
– Antennal scale two-segmented; telson short, terminus narrowly truncate with pair of setae flanked by 1–2 pairs of spines 5

4. Antennal scale curved outwardly, terminating in a spinose process, inner margin with two long spines plus setae, outer margin armed with irregularly arranged small spines; telson triangular, ending in two long teeth or spines, on lateral margins flanked by a pair of medium-sized spines, margins almost all along with additional minute spines ...***Echinomysides*** Murano, 1977 (1 species)
– Antennal scale setose, without teeth and spines; telson short, oval, distally with pair of setae, convex lateral margins with small spines .... ***Echinomysis*** Illig, 1905 (3 species)

5. Antennal scale with tooth on outer margin; carapace and pleon smooth or hispid by numerous spines in certain species .... ***Euchaetomera*** G.O. Sars, 1883 (9 species)
– Antennal scale setose all around ....***Euchaetomeropsis*** W.M. Tattersall, 1909 (2 species)

6. Antennal scale without tooth on lateral margin 7
– Antennal scale with ≥ 1 tooth on lateral margin 9

7. Eyes stalked, with imperfect ommatidia, ocular papilla present; telson linguiform, terminal margin with pair of setae flanked by spines, lateral margins with spines; ♂ pleopods without modified setae ....***Hyperamblyops*** Birstein & Tchindonova, 1958 (4 species)
– Cornea well developed, ocular papilla present or absent; telson short, triangular 8

8. Lateral margins of telson without spines, apex with setae between spines; eyes well developed, papilla present or absent .... ***Heteroerythrops*** O.S. Tattersall, 1955 (3 species)
– Lateral margins of telson with spines on distal half, no setae; no ocular papilla; ♂ pleopods without modified setae ....***Nipponerythrops*** Murano, 1977 (1 species)

9. Second thoracic endopod prehensile by reflexed dactylus with claw; exopod of ♂ pleopod 5 with modified setae; telson elongate, laterally constricted at ⅔ of length from basis ....
....***Aberomysis*** Băcescu & Iliffe, 1986 (1 species)
– Second thoracic endopod not prehensile; telson not laterally constricted 10

10. Eyes with incomplete ommatidia; eyes stalked, distantly set, ocular papilla present; ♂ pleopods without modified setae 11
– Eyes with well-developed ommatidia 12

11. Telson not longer than maximum width, triangular with short, transverse terminal margin furnished with mid-terminal pair of setae flanked by large spines ....***Teraterythrops*** Ii, 1964 (2 species)
– Telson linguiform (Fig. 1F) to triangular (Fig. 8G), longer than maximum width, with spines on lateral margins and apex, no setae ....***Dactylamblyops*** Holt & Tattersall, 1906 (16 species)

12. Merus of thoracic endopods 3–8 broadened into a thin, leaf-like blade; telson triangular with rounded apex; modified setae on elongated endopod of ♂ pleopod 4; distal segment of 3-segmented antennal peduncle overlapping distal portion of median segment ....***Pteromysis*** Ii, 1964 (1 species)
– Merus of thoracic endopods 3–8 not conspicuously broadened 13

13. Body constricted between thorax and pleon 14
– Body without constriction between thorax and pleon 15

14. Pleon cylindrical; lateral margins of telson smooth or finely serrated; endopod of ♂ pleopod 5 with modified setae in most species; pleomeres without unpaired mid-ventral processes .... ***Meterythrops*** S.I. Smith, 1879 (8 species)
– Pleon flattened by a factor of ≈ 1.2; endopod of ♂ pleopod 5 with modified setae in most species; telson with bare, concave lateral margins; narrow, transverse terminal margin with mid-terminal pair of small setae, flanked by a pair of large spines in turn flanked by a pair of minute spines; pleomeres ventrally with unpaired, small processes along midline in certain species .... ***Pleurerythrops*** Ii, 1964 (5 species)

15. At least some pleomeres with unpaired mid-ventral processes; ♂ pleopods mostly without modified setae, endopod 4 may have slightly modified setae .... ***Hypererythrops*** Holt & Tattersall, 1905 (9 species)
– All pleomeres without mid-ventral processes (not considering potential processes on thoracomeres) 16

16. Antennal scale with series of four teeth increasing in size distally up to end of setae-free portion of lateral margin; telson minute, heart-shaped, lateral margins strongly convex, bare, transverse narrow terminal margin with spines; endopod of ♂ pleopod 3 with modified setae .... ***Shenimysis*** Wang, 1998 (1 species)
– Antennal scale with only one tooth at end of bare lateral margin 17

17. Antennal peduncle with third segment in a different plane from second segment; telson linguiform, almost triangular 18
– Three segments of antennal peduncle lined in linear series within same plane 21

18. Terminal margin of telson with spines, no setae 19
– Terminal margin of telson with pair of paramedian setae flanked by spines 20

19. Terminal margin of telson with 2–3 short (para)median spines flanked by one pair of large spines; lateral margins all along with spines; endopod of ♂ pleopod 4 with modified setae .... ***Nakazawaia*** Murano, 1981 (2 species)
– Terminal margin of telson with pair of large paramedian spines, no shorter spines in between; lateral margins with spines only on distal ½–⅔ ....***Metamblyops*** W.M. Tattersall, 1907 (3 species)

20. Terminal margin of telson with pair of paramedian setae, flanked by minute spines in turn flanked by large spines; endopod of ♂ pleopod 4 with slightly modified setae .... ***Atlanterythrops*** Nouvel & Lagardère, 1976 (1 species)
– Narrow terminal margin of telson with pair of barbed paramedian setae flanked by pair of large spines, no minute spines; endopod of ♂ pleopod 4 elongate, apically with long spinous modified seta ....***Holmesiella*** Ortmann, 1908 (in part, see also couplet 33; total of 3 species)

21. Distal segment of endopod of maxilla very short, length < 1.3 times maximum width; telson short, triangular to almost trapezoid, terminal margin with pair of setae, flanked by one pair of large spines in turn sometimes flanked by smaller spines .... ***Synerythrops*** Hansen, 1910 (3 species)
– Distal segment of endopod of maxilla > 1.4 times as long as maximum width 22

22. Telson length ≤ 1.2 times maximum width 23
– Telson length > 1.2 times maximum width 26

23. Terminal margin of telson with paramedian setae flanked by spines 24
– Terminal margin of telson with spines, no setae 25

24. Telson trapezoid, transverse terminal margin with pair of setae flanked by large spines; ♂ pleopods with modified setae in some species .... ***Erythrops*** G.O. Sars, 1869 (17 species)
– Telson minute, triangular with straight to convex (bulbous) lateral margins; mid-terminally with total of 3–4 setae/spines; ♂ pleopods without modified setae .....***Meierythrops*** Murano, 1981 (4 species)

25. Telson minute, clearly heart-shaped, with transverse narrow terminal margin and strongly convex, bare lateral margins; lateral margin of antennal scale with series of four teeth increasing in size distally up to end of setae-free portion; endopod of ♂ pleopod 3 with modified setae .... ***Shenimysis*** Wang, 1998 (1 species)
– Telson subtriangular, weakly heart-shaped, apex with pair of large paramedian spines flanked by pair of smaller (mostly minute) spines; lateral margin of antennal scale with one tooth marking end of bare portion; endopod of ♂ pleopod 5 with slightly modified setae .... ***Amathimysis*** Brattegard, 1969 (9 species)

26. Antennal scale with long and wide (¼ of scale width) tooth distally on lateral margin; telson triangular with narrow tip bearing two large spines not in continuous series with intermediate-sized spines on lateral margins; exopod of ♂ pleopod 4 with modified setae .... ***Pseuderythrops*** Coifmann, 1936 (3 species)
– Antennal scale with normal-sized (< ¼ of scale width) tooth distally on lateral margin 27

27. Telson with bare lateral margins, no spines, no teeth 28
– Lateral margins of telson with spines 29

28. Thorax not inflated; ♂ pleopod 1 uniramous as in ♀♀; telson longer than broad, its narrowly truncate or rounded apex armed with pair of paramedian setae flanked by spines .... ***Parerythrops*** G.O. Sars, 1869 (6 species)
– Thorax inflated in precervical region; ♂ pleopod 1 biramous; telson with setae or small bristles .... ***Katerythrops*** Holt & Tattersall, 1905 (2 species)

29. Lateral margins of telson with series of medium-sized spines with small spines in between; cephalic region of carapace strongly swollen; telson elongate triangular, narrow terminal margin with pair of small spines flanked by large spines .... ***Liuimysis*** Wang, 1998 (1 species)
– Lateral margins of telson with spines in continuous series 30

30. Telson triangular, distally narrowly truncate with blunt edges and with pair of disto-paramedian setae flanked by spines; ♂ pleopods without modified setae; no sternal processes .... ***Gibberythrops*** Illig, 1930 (4 species)
– Telson trapezoid to linguiform 31

31. Telson linguiform, with subequal spines in continuous series densely set around distal half, terminal margin convex, broadly rounded, no setae; ♂ pleopod 1 uniramous, unsegmented, plate-like as in ♀♀; ♂ endopod 5 with modified setae ....***Australerythrops*** W.M. Tattersall, 1928 (2 species)
– Terminal margin of telson with variously-sized spines not in continuous series with spines on lateral margins; ♂ pleopod 1 biramous 32

32. Telson trapezoid; terminal margin with pair of minute spines flanked by large spines, no setae, distal ⅚ of lateral margins with loosely-set spines increasing in length distally; ocular papillae present; ♂ pleopods 3–4 with modified setae ....***Indoerythrops*** Panampunnayil, 1998 (1 species)
– Telson trapezoid to linguiform, terminally with setae flanked by pair of minute spines in turn flanked by large spines 33

33. Distal half of lateral margins of telson with loosely-set, medium-sized spines; ♂ pleopods without modified setae ....***Illigiella*** Murano, 1981 (1 species)
– Distal ½–⅔ of lateral margins of telson with densely-set spines increasing in length distally; endopod of ♂ pleopod 4 elongated, with 1–2 modified setae ....***Holmesiella*** Ortmann, 1908 (in part, see also item 20)

Monotypic tribus Inusitatomysini: *Inusitatomysis* Ii, 1940 (1 species)

Key to the genera of the tribus Mysimenziesini

1. First thoracopod with flagelliform, multi-segmented exopod; labrum with unpaired hastate rostral process ....***Marumomysis*** Murano, 1999 (2 species)
– First thoracopod with exopod reduced to an unsegmented lamina; labrum subtriangular, without hastate process ....***Mysimenzies*** Băcescu, 1971 (2 species)

Key to the genera of the tribus Pseudommini

1. Telson bifid by a basally rounded terminal notch; antennal scale without disto-lateral tooth ....***Neoamblyops*** Fukuoka, 2009 (1 species)
– Telson entire, linguiform to nearly trapezoid; bare portion of lateral margin of antennal scale in most species distally ending in a tooth 2

2. Eye rudiments fused along proximal ≤ ½ of antero-posterior extension and distally separated by a narrow median cleft .... ***Parapseudomma*** Nouvel & Lagardère, 1976 (2 species)
– Eye rudiments fused along more than proximal half, disto-mesially separated by a short narrow cleft or at least a short indentation .... ***Pseudomma*** G.O. Sars, 1870 (46 species)

Monotypic tribus Thalassomysini: *Thalassomysis* W.M. Tattersall, 1939 (2 species)

Unassigned genus: ***Xenomysis*** Kou, Meland & Li, 2020 (1 species)

Keys to the species of the subfamily Erythropinae

Separate keys for the 61 genera in alphabetic order, covering a total of 263 species.

Genus ***Aberomysis*** Băcescu & Iliffe, 1986

A. muranoi Băcescu & Iliffe, 1986 (Micronesia, shallow marine cave)

Genus ***Abyssomysis*** Wittmann, 2020

A. cornuta Wittmann, 2020 (SE Atlantic, depth 5430–5460 m)

Genus ***Amathimysis*** Brattegard, 1969

1. Carapace with dorsal projections (keels, protuberances, tubercles) 2
– Carapace dorsally smooth 6

2. Carapace dorsally with both median and paramedian projections 3
– Carapace with dorsal projections only on midline 4

3. Carapace with one median and two pairs of paramedian keels ....***A. brattegardi*** Stuck & Heard, 1981 (Gulf of Mexico, Caribbean, depth 11–51 m)
– Carapace with transverse series of three tubercles between cervical sulcus and anterior margin ....***A. trigibba*** Murano & Chess, 1987 (NE Pacific, depth 5–23 m)

4. Carapace with hump along midline in front of cervical sulcus and another one directly behind cervical sulcus ....***A. cherados*** Brattegard, 1974 (Caribbean, depth 0.5–7 m)
– Carapace with projection only in front of cervical sulcus 5

5. Carapace with keeled hump on midline shortly in front of cervical sulcus ....
....***A. gibba*** Brattegard, 1969 (Caribbean, depth 0.5–26 m)
– Carapace with median keel bearing a slight protuberance in front of cervical sulcus ....
.... ***A. serrata*** Murano, 1986 (Caribbean, depth 0.5–10 m)

6. Antennal scale stout, only twice as long as maximum width, terminal segment ¼ of total scale length ....***A. sarbui*** Băcescu, 1991 (submarine cave at Bahamas)
– Antennal scale $>5/2$ times as long as maximum width, terminal segment ≤⅛ of total scale length ...
.... 7

7. Bare portion of lateral margin of antennal scale not ending in a tooth ....
A. torleivi Ortiz, Lalana & Sánchez-Díaz, 2000 (Caribbean, depth 4–9 m, associated with sponges)
– Bare portion of lateral margin of antennal scale ending in a tooth 8

8. Antennal scale 3.0–3.1 times as long as maximum width ....
.... ***A. polita*** Brattegard, 1974 (Caribbean, depth 2–40 m)
– Antennal scale 3.5 times as long as maximum width in ♂♂, 2.8 times in ♀♀ ....
A. brasiliana (Băcescu, 1984) (synonym of *A. polita*?) (equatorial W Atlantic, depth 3–45 m)

Genus ***Amblyops*** G.O. Sars, 1872

A pair of paramedian setae is present on the telson in all 24 species, except *A. aequispina*, and is therefore not explicitly indicated below for most items.

1. Eye rudiments without any papilla or with knob-like ocular papilla <⅒ of antero-posterior extension of eye rudiment 2
– Eye rudiments with 1–2 elevated ocular papillae (including similar projections with unknown details) >⅒ of antero-posterior extension of eye rudiment 11

2. Eye rudiments without ocular papilla 3
– Eye rudiments with knob-like ocular papilla 7

3. Telson with ≈41–42 spatulate spines along posterior ⅔ of each lateral margin, continuously convex terminal margin with continuous series of intermediate-sized spines, no small paramedian spines; endopod of uropods with 2–3 spines below statocyst ....
....***A. sagamiensis*** Murano, 2012 (NW Pacific, depth ≤1000 m)
– Telson with ≈24–40 normal-shaped spines along each lateral margin 4

4. Telson with ≈24–30 spines along each lateral margin, terminal margin with 1–2 small (para)median spines flanked by two pairs of large spines increasing in size posteriorly, innermost large spines ≈⅙–⅕ of telson length 5
– Telson with ≈37–40 spines along posterior ¾–⅘ of each lateral margin, no small disto-paramedian spines, pair of large distalmost paramedian spines <⅙ of telson length 6

5. Antennal scale 3.8 times as long as maximum width; telson with ≈24–26 spines along posterior ⅔–⅘ of each lateral margin ....***A. manazuruensis*** Murano, 2012 (NW Pacific, depth 360–460 m)
– Antennal scale 3.3 times as long as maximum width; telson with ≈28–30 spines along posterior ⅔ of each lateral margin ....***A. izuensis*** Murano, 2012 (NW Pacific, depth 1685–1708 m)

6. Telson with ≈37 spines along posterior ⅘ of each lateral margin, large spines of terminal margin ≈⅛ of telson length; endopod of uropods with 1–2 spines below statocyst ....***A. amamiensis*** Murano, 2012 (NW Pacific, depth ≈1000 m)
– Telson with ≈39 spines along posterior ¾ of each lateral margin, large distalmost spines on terminal margin ≈1⁄20 of telson length; endopod of uropods with three spines below statocyst ....***A. surugensis*** Murano, 2012 (NW Pacific, depth 1770–1780 m)

7. Endopod of uropods with one spine below statocyst; telson with 47–48 spatulate spines along ⅔ of each lateral margin; antennal scale extends ⅗ of its length beyond antennular trunk ....***A. kashimensis*** Murano, 2012 (NW Pacific, depth unknown)
– Telson with <35 normal-shaped spines along each lateral margin 8

8. Endopod of uropods with 2–3 spines below statocyst; telson linguiform with 24–27 spines along posterior half of each lateral margin, its terminal margin with unpaired small median spine; telson ≈1.9 times as long as maximum width, width at half-length >½ of maximum width; antennal scale extends half its length beyond antennular trunk ....***A. spiniferus*** Nouvel & Lagardère, 1976 (NE Atlantic, depth 280–1500 m)
– Endopod of uropods with one spine below statocyst; terminal margin of telson without unpaired median spine 9

9. Telson elongate subtriangular with rounded apex, 2.2–2.3 times as long as maximum width, width at half-length <½ of maximum width; telson with ≈32 spines along posterior ⅔ of each lateral margin; antennal scale extends ⅖–½ of its length beyond antennular trunk ....***A. okinawensis*** Murano, 2012 (NW Pacific, depth 870–945 m)
– Telson linguiform with sinuous lateral margin, 1.7–2.1 times as long as maximum width, width at half-length >½ of maximum width 10

10. Telson with ≈17 spines along posterior ⅗ of each lateral margin; antennal scale extends ⅓ of its length beyond antennular trunk .. ***A. timorensis*** Murano, 2012 (E Indian Ocean, depth 465–490 m)
– Telson with 25–30 spines along posterior ⅔ of each lateral margin; antennal scale extends ⅖ of its length beyond antennular trunk ....***A. abbreviatus*** (G.O. Sars, 1869) (in part; see also couplet 24) (N boreal and arctic waters of Atlantic, depth 150–1400 m)

11. Eye rudiments with two ocular papillae (Fig. 20A); telson with 29–32 spines along posterior 4⁄7 of each lateral margin, terminal margin with small median spine flanked by pair of setae and two pairs of large spines (Fig. 24H), submedian pair largest, only ≈1⁄15 of telson length ....***A. bipapillatus*** sp. nov. (Southern Ocean, depth 1182–3103 m)
– Eye rudiments with one ocular papilla (projection) 12

12. Telson narrowly linguiform with posterior ⅔ rapidly converging to narrow apex in a triangular manner, twelve spines along posterior ⅔ of each lateral margin, apex with pair of plumose setae flanked by subapically inserting pair of long spines; antennal scale terminally truncate with disto-lateral tooth extending beyond entire length of scale ....***A. tenuicauda*** W.M. Tattersall, 1911 (E Atlantic, depth 450–5433 m)
– Telson linguiform to trapeziform, with rounded or flattened terminal margin 13

13. Telson with flattened terminal margin 14
– Telson with continuously rounded convex terminal margin 20

14. Each lateral margin of telson all along with ≈22–37 spines, terminal margin with pair of minute paramedian spines flanked by seven pairs of large spines increasing in length mesially; endopod of uropods with 4–5 spines below statocyst .... ***A. ewingi*** Băcescu, 1967 (Pacific, depth 1997–2519 m)
– Telson with spines only along posterior $\frac{2}{5}$–$\frac{4}{5}$ of each lateral margin, terminal margin with 0–2 small spines flanked by 2–3 pairs of large spines 15

15. Blade of antennal scale without terminal lobe; telson with 19–30 spines along distal $\frac{3}{5}$ of each lateral margin, terminal margin with pair of paramedian setae flanked by one pair of minute spines in turn flanked by 2–4 pairs of large spines; endopod of uropods with 3–5 spines below statocyst .... ***A. magnus*** Birstein & Tchindonova, 1958 (N Pacific: Kurile-Kamchatka Trench, Japan Trench, Mariana Trench, depth 4480–7260 m)
– Blade of antennal scale with terminal lobe; endopod of uropods with 1–2 spines below statocyst 16

16. Blade of antennal scale extending far beyond tip of distolateral tooth; posterior $\frac{3}{5}$ of each lateral margin of telson with dense series of 18–23 spines discontinuously increasing in length posteriorly, terminal margin with pair of paramedian setae flanked by pair of small spines, in turn flanked by 2–3 pairs of large spines increasing in length mesially, innermost large spines $\frac{1}{9}$–$\frac{1}{6}$ of telson length (Fig. 13C) .... ***A. tattersalli*** Zimmer, 1914 (circum-Antarctic, depth 385–4931 m)
– Blade of antennal scale with terminal lobe not extending beyond tip of distolateral tooth 17

17. Antennal scale stout, 2.6–2.8 times as long as maximum width (Fig. 16C); telson with 9–11 spines along posterior $\frac{2}{5}$–$\frac{3}{5}$ of each lateral margin, terminal margin with pair of paramedian setae flanked by 2–3 pairs of large spines increasing in size mesially, no small spines in between, innermost large spine only ≈$\frac{1}{17}$ of telson length (Fig. 19D) .... ***A. arianii*** sp. nov. (Southern Ocean, depth 2092–4698 m)
– Antennal scale 3–4 times as long as maximum width; terminal margin of telson with pair of small paramedian spines flanked by large spines 18

18. Antennal scale $\frac{7}{2}$ times as long as maximum width; telson with 17–20 spines along posterior $\frac{4}{5}$ of each lateral margin, terminal margin with pair of small paramedian spines flanked by 2–3 pairs of large spines increasing in size mesially, innermost large spine $\frac{1}{4}$ of telson length .... ***A. trisetosus*** Nouvel & Lagardère, 1976 (NE Atlantic, depth 680–2300 m)
– Antennal scale $>\frac{7}{2}$ times as long as maximum width; telson with spines along $<\frac{4}{5}$ of lateral margins, largest spine $\leq\frac{1}{5}$ of telson length 19

19. Telson with 11–12 spines along posterior $\frac{2}{5}$ of each lateral margin, terminal margin with pair of paramedian setae flanked by pair of small spines, in turn flanked by two pairs of large spines, innermost large spines longest, $\frac{1}{5}$ of telson length .... ***A. australiensis*** Murano, 2012 (E Indian Ocean, depth 535–547 m)
– Telson with ≈22 spines along posterior $\frac{2}{3}$ of each lateral margin, terminal margin with pair of paramedian small spines flanked by six pairs of large spines, 4th large spine from inside longest, ≈$\frac{1}{8}$ of telson length .... ***A. longisquamosus*** Murano & Mauchline, 1999 (NE Atlantic, depth 1500–1809 m)

20. Telson without setae, with total of ≈70 spines on posterior $\frac{3}{5}$, posterior ≈24 spines of same size .... ***A. aequispina*** Birstein & Tchindonova, 1958 (NW Pacific, depth 4830–5780 m)
– Telson with pair of disto-paramedian setae and with spines posteriorly increasing in size along lateral margins 21

21. Antennal scale <3 times as long as maximum width; uropods without spines; telson with 27–29 spines along less than posterior half of each lateral margin .... ***A. antarcticus*** O.S. Tattersall, 1955 (Southern Ocean, depth 567–810 m)
– Antennal scale >3 times as long as maximum width; uropods with at least one spine 22

22. Telson with 10–12 spines along less than posterior half of each lateral margin; endopod of uropods with three spines below statocyst .... ***A. durbani*** O.S. Tattersall, 1955 (SW Indian Ocean, depth ≤416 m)
– Telson with >20 spines along more than posterior half of each lateral margin; endopod of uropods with <3 spines below statocyst 23

23. Telson abruptly narrowing near base, then gradually tapering posteriorly, armed with 27–30 spines along posterior ⅔–⅚ of each lateral margin; endopod of uropods with 1–2 spines below statocyst .... ***A. kempi*** (Holt & Tattersall, 1905) (N Atlantic, depth 200–1464 m)
– Telson linguiform, continuously narrowing near base, lateral margins sinusoidal; endopod of uropods with one spine below statocyst 24

24. Telson with 25–30 spines along posterior ⅔ of each lateral margin; antennal scale extends ⅖ of its length beyond antennular trunk; length of ocular papilla 1/20–¼ of antero-posterior extension of eye rudiments .... ***A. abbreviatus*** (G.O. Sars, 1869) (in part; see also couplet 10) (N boreal and arctic waters of Atlantic, depth 150–1400 m)
– Telson with 33–37 spines along posterior ⅔–¾ of each lateral margin; antennal scale extends ⅓–⅖ of its length beyond antennular trunk; length of ocular papilla ⅕–¼ of antero-posterior extension of eye rudiments .... ***A. pacificus*** Murano, 2012 (N Pacific, depth 180–1543 m)

Genus ***Amblyopsoides*** O.S. Tattersall, 1955

1. Terminal margin of telson with ogival median indentation with depth 5% of telson length (Fig. 36A); indentation flanked by 3–4 pairs of large spines; uropods without spine; lateral margin of antennal scale bare up to tooth at ⅓–½ of total scale length (Fig. 33D) .... ***A. fenestragothica*** sp. nov. (Southern Ocean, depth 2086–2894 m)
– Terminal margin of telson not emarginated or with continuously rounded median indentation with depth only 1–3% of telson length; endopod of uropods with one spine below statocyst 2

2. Frontal margin of carapace obtuse-angled; lateral margin of antennal scale bare up to tooth at half its length 3
– Frontal margin of carapace obtusely rounded or continuously rounded 4

3. Frontal margin of carapace without rostrum; lateral margins of telson with ≈17–20 spines; eye rudiments with scales in peripheral position on and close to lateral and anterior margins, center of dorsal face smooth .... ***A. obtusa*** O.S. Tattersall, 1955 (S Atlantic, Magellan Strait, depth 265–534 m)
– Frontal margin of carapace with short, obtuse-angled rostrum (Fig. 39A) covering basal portions of eye rudiments; lateral margins of telson with 20–26 spines; eye rudiments dorsally hispid all over by small scales (Figs 38D, 39A) ... ***A. lepidophthalma*** sp. nov. (Southern Ocean, depth 2281–2375 m)

4. Eyes subtriangular in dorsal view; terminal margin of telson without paramedian laminae, lateral margins with 10–12 spines .... ***A. laticauda*** (Birstein & Tchindonova, 1958) comb. nov. (NW Pacific, depth 4500 m)
– Eyes quadrangular in dorsal view; terminal margin of telson with pair of laminae flanking pair of paramedian setae; lateral margins with 15–23 spines 5

5. Lateral margin of antennal scale bare up to tooth at ⅔ of length from basis; frontal margin of carapace obtusely rounded; terminal indentation of telson flanked by 2–3 pairs of large spines .... ***A. halleyi*** Ledoyer, 1990 (Southern Ocean, depth 585–1223 m)
– Lateral margin of antennal scale bare up to tooth at half of its length; frontal margin of carapace well rounded 6

6. Terminal indentation of telson flanked by 4–6 pairs of large spines; eye rudiments with smooth margins .... ***A. crozetii*** (Willemoes-Suhm in G.O. Sars, 1884) (Southern Ocean, depth 800–2960 m)
– Terminal indentation of telson flanked by 3–4 pairs of large spines; disto-lateral edge of eye rudiments hispid by minute denticles .... ***A. ohlinii*** (W.M. Tattersall, 1951) (N Atlantic, NE Pacific, depth 1480–2265 m)

Genus *Amphiakrops* gen. nov.

1. Lateral margins of telson with spines along distal ≥¾; rostrum long, acute, reaches beyond median segment of antennular trunk; antennal scale without distal lobe ....***A. bidigitatus*** (W.M. Tattersall, 1911) comb. nov. (NE Atlantic, depth 976–2900 m)
– Lateral margins of telson with spines along distal ≤⅗; rostrum apically rounded, not reaching beyond median segment of antennular trunk 2

2. Eye rudiments extend beyond median segment of antennular trunk; endopod of uropods with spine much shorter than statolith diameter ....***A. japonicus*** (Murano, 1981) comb. nov. (NW Pacific, depth 1690 m, plus 0–1250 m recorded with non-closing device)
– Eye rudiments not extending beyond median segment of antennular trunk; distal lobe of antennal scale reaches beyond tooth at outer margin; endopod of uropods with comparatively long, slender spine, slightly longer than statolith diameter (Fig. 61I) ....***A. brandtae*** gen. et sp. nov. (Southern Ocean, depth 2086–2920 m)

Genus ***Arachnomysis*** Chun, 1887

Key according to Murano (1977).

1. Eyes slender, cornea with 10–14 facets at its broadest part ....***A. leuckartii*** Chun, 1887 (panthalassic in tropical to temperate waters, epi- to bathypelagic)
– Eyes thick, cornea with 16–25 facets at its broadest part .... ***A. megalops*** Zimmer, 1914 (panthalassic in tropical to temperate waters, meso- to bathypelagic)

Genus ***Atlanterythrops*** Nouvel & Lagardère, 1976

A. crassipes Nouvel & Lagardère, 1976 (NE Atlantic, depth 250–720 m)

Genus ***Australerythrops*** W.M. Tattersall, 1928

1. Terminal two segments of endopod of ♂ pleopod 5 each with one stout simple seta .... ***A. paradicei*** W.M. Tattersall, 1928 (SE coast of Australia, sublittoral)
– Terminal two segments of endopod of ♂ pleopod 5 with four modified setae .... ***A. africanus*** Connell, 2008 (♀♀ not distinguished from *A. paradicei*) (E coast of S Africa, depth 34 m)

Genus ***Caesaromysis*** Ortmann, 1893

C. hispida Ortmann, 1893 (panthalassic, depth 100–2000 m)

Genus ***Calyptomma*** W.M. Tattersall, 1909

C. puritani W.M. Tattersall, 1909 (Mediterranean, depth 601–1859 m)

Genus ***Chelamblyops*** gen. nov.

C. globorostris (Birstein & Tchindonova, 1970) comb. nov. (NE Pacific, depth 4690–4720 m)

Genus ***Chunomysis*** Holt & Tattersall, 1905

C. diadema Holt & Tattersall, 1905 (NE Atlantic, depth 150–1800 m)

Genus ***Dactylamblyops*** Holt & Tattersall, 1906

1. Telson linguiform with broadly rounded terminus, lateral margins slightly sigmoid (Fig. 1F) 2
– Telson (sub)triangular with continuously converging lateral margins, apex narrowly rounded (Fig. 8G) 6

2. Anterior margin of carapace broadly rounded, no rostrum or, if any, unapparent, broadly rounded rostrum 3
– Carapace produced into triangular rostrum with blunt tip 4

3. Eyes sub-quadrangular; endopod of uropods with four spines below statocyst; terminal margin of telson with unpaired, small, slender median spine flanked by pair of larger spines .... ***D. goniops*** W.M. Tattersall, 1907 (NE Atlantic, depth 585–1331 m)
– Eyes pyriform with narrow apex; endopod of uropods with a single spine below statocyst; telson without small spine between pair of large disto-paramedian spines .... ***D. tenellus*** Birstein & Tchindonova, 1958 (NW Pacific: off Japan, depth 6600 m)

4. Antennal scale short, not extending beyond antennular trunk; telson without small spine between pair of large disto-paramedian spines .... ***D. fervidus*** Hansen, 1910 (Indian Ocean, depth ≤ 1500 m)
– Antennal scale extending beyond antennular trunk 5

5. Ocular papilla with length ⅓–½ of cornea diameter; endopod of uropods with a single spine below statocyst; lateral margins of telson with ≈ 18–32 spines in continuous series; telson without small spine between pair of large disto-paramedian spines .... ***D. murrayi*** W.M. Tattersall, 1939 (Arabian Sea, NW Pacific, Southern Ocean, depth ≤ 480 m to 4543 m)
– Ocular papilla more than half as long as cornea diameter; endopod of uropods with three spines below statocyst; lateral margins of telson with ≈ 15–16 spines; terminal margin of telson with single median spine (total length unknown) flanked by several thicker, long paramedian spines ....***D. corberai*** San Vicente & Cartes, 2011 (Mediterranean, depth 358–1858 m)

6. Eyes with crescent-shaped membranous ledge dividing cornea in two portions; third thoracic endopod with weak subchela formed by moveable dactylus with nail opposing a moveable spine of propodus 7
– Cornea not divided by a crescent-shaped membranous ledge; third thoracic endopod without subchela 8

7. Eye-ledge running equatorially; endopod of uropods with four spines below statocyst; each lateral margin of telson with ≈ 24 spines ....***D. thaumatops*** W.M. Tattersall, 1907 (NE Atlantic, depth 995–1372 m)
– Eye-ledge running sub-equatorially, i.e., separating a large dorsal portion of cornea from a smaller ventral portion; endopod of uropods with five spines below statocyst; each lateral margin of telson with 32–34 spines .... ***D. iii*** Nouvel & Lagardère, 1976 (NW Pacific, depth ≤ 1010 m)

8. Lateral margins of telson with six spines; terminal margin with mid-terminal seta flanked by a pair of very long spines; eyes globular in dorsal view, pyriform in lateral view; cornea running incompletely around distal half of eye, leaving part of eyestalk disto-mesially exposed; antennal scale unsegmented; endopod of uropods with two spines below statocyst ....
.... ***D. solivagus*** Birstein & Tchindonova, 1958 (N Pacific, depth 500–640 m)
– Lateral margins of telson with > 10 spines 9

9. Antennal scale not extending beyond antennular trunk 10
– Antennal scale (at least shortly) extending beyond antennular trunk 11

10. Carapace anteriorly broadly rounded, no clear rostrum; lateral margins of telson with 12–15 spines
.... ***D. japonicus*** Ii, 1964 (NW Pacific, depth ≤ 2300 m)
– Rostrum triangular with acute apex reaching almost to end of basal segment of antennular trunk; lateral margins of telson with ≈ 20 spines ....
.... ***D. latisquamosus*** (Illig, 1906) (Indo-Pacific, depth ≤ 800 m)

11. Eyes subtriangular with prominent papilla in dorsal view, eye rectangular with sharp line separating dorsal from ventral portions in lateral view ....
.... ***D. sarsi*** (Ohlin, 1901) (Arctic Ocean, circumpolar, depth 50–4320 m)
– Eyes pyriform to sub-conical in dorsal view (Fig. 4D) 12

12. Antennal scale with small apical segment; endopod of uropods with a single minute spine below statocyst (Fig. 8F) 13
– Antennal scale unsegmented 14

13. Antennal scale extending 0.3–0.4 times its length beyond antennular trunk (Fig. 3D); lateral margins of telson with 24–31 spines (Fig. 8G) ....
.... ***D. benthophilus*** sp. nov. (Southern Ocean, depth 756–4805 m)
– Antennal scale extending half its length beyond antennular trunk; lateral margins of telson with 19–20 spines ....***D. stenurus*** Murano, 1969 (NW Pacific, depth > 1000 m)

14. Endopod of uropods with four spines below statocyst; lateral margins of telson with ≈ 25 spines; eyes pyriform ....***D. pellucidus*** Birstein & Tchindonova, 1958 (NW Pacific, depth 4400 m)
– Endopod of uropods with a single spine below statocyst; rostrum rounded 15

15. Lateral margins of telson with ≈ 25 spines ....
....***D. atlanticus*** Murano & Mauchline, 1999 (NE Atlantic, depth 2500 m)
– Lateral margins of telson with 16–19 spines ....
.... ***D. hodgsoni*** Holt & Tattersall, 1906 (Southern Ocean, depth 200–4200 m)

Genus ***Dactylerythrops*** Holt & Tattersall, 1905

1. Eye rudiments with a small disto-mesial and a larger disto-lateral papilla ....
............................***D. bidigitatus*** W.M. Tattersall, 1907 (NE and NW Atlantic, depth 1209–2000 m)
– Eye rudiments with only one distal process 2

2. Antennal scale with very short terminal lobe not extending beyond small tooth on lateral margin ..
.... 3
– Antennal scale with large lobe extending beyond strong tooth on lateral margin 4

3. Telson triangular with narrowly rounded apex; eye rudiment strongly reduced with small finger-like mid-distal projection ....***D. chrotops*** Murano, 1969 (NW Pacific, depth 200–600 m)
– Telson trapezoidal with truncate distal margin measuring ⅕–¼ of maximum width near basis; eye rudiment distally with small nodular process ....***D. latisquamosus*** Murano & Krygier, 1985 (NE Pacific, depth 2853 m)

4. Telson triangular, distally rounded to narrowly truncate, lateral margins with spines on distal ≤1⁄20 in ♂♂ and on distal ¼ in ♀♀; pair of disto-paramedian spines at ⅖–½ of telson length in ♂♂, at ⅖ of length in ♀♀ (telson data derived from figures; sexes confounded in figure legend by Holt & Tattersall 1905: pl. xxii; sexes not differentiated for telson in Tattersall & Tattersall 1951) ....***D. dactylops*** Holt & Tattersall, 1905 (NE Atlantic, depth 400–1500 m)
– Telson triangular, distally rounded, lateral margins with spines on distal ⅒ in ♂♂ and on distal ⅓ in ♀♀; pair of disto-paramedian spines at ⅓ of telson length in ♂♂ and at ⅕ of length in ♀♀ .... ***D. dimorphus*** Nouvel & Lagardère, 1976 (synonym of *D. dactylops*?) (NE Atlantic, depth 190–720 m)

Genus ***Desmocornea*** gen. nov.

D. subchelata gen. et sp. nov. (Southern Ocean, depth 1182–2970 m)

Genus ***Echinomysides*** Murano, 1977

E. typica Murano, 1977 (off SW Japan, depth 140 m)

Genus ***Echinomysis*** Illig, 1905

1. Both parts of the bipartite cornea closely set; lateral margins of telson sigmoid with distal ⅔ concave ....***E. serrata*** Vereshchaka, 1990 (E Pacific, depth 50–550 m)
Nomenclatorial note. The genus name '*Mysis*' was fixed as feminine by the Nomenclatorial Commission (Melville & Smith 1987). In combination with Art 30.1. of the Code (ICZN 1999) all genus names ending with '-*mysis*' are deemed to be feminine. Since '*serratus'* is a Latin adjective, the spelling of *E. serratus* is here corrected to *E. serrata*.
– Small lateral cornea set distantly from main cornea terminally on eyestalk; lateral margins of telson convex all along 2

2. Short carapace, leaving three posterior thoracomeres dorsally exposed; small lateral cornea set at distance of half its diameter from main cornea ....***E. chuni*** Illig, 1905 (Indian Ocean, E Atlantic, pelagic in tropical to sub-Antarctic latitudes, depth 185–2500 m)
– Carapace leaving only ultimate thoracomere dorsally exposed; small lateral cornea set at distance of ⅔ its full diameter from main cornea ....***E. distinguenda*** Coifmann, 1936 (Arabian Sea, pelagic in ≤800 m depth)

Genus ***Eoamblyops*** Murano, 2013

E. japonicus Murano, 2013 (NW Pacific, depth 280–850 m)

Genus ***Erythrops*** G.O. Sars, 1869

1. Antennal scale with >1 tooth on setae-free portion of lateral margin 2
– Antennal scale with bare portion of lateral margin distally ending in a single tooth 5

2. Antennal scale with two teeth at end of bare lateral portion ....***E. bidentatus*** Nouvel, 1973 (SE Atlantic, depth 50–100 m)
– Antennal scale with >2 teeth on setae-free portion of lateral margin 3

3. Terminal lobe of antennal scale extending beyond distal tooth on outer margin ....
.... ***E. abyssorum*** G.O. Sars, 1869 (N Atlantic, depth 56–1400 m)
– Terminal lobe of antennal scale not extending beyond distal tooth on outer margin 4

4. Telson with bare, sigmoid, distally concave lateral margins ....
.... ***E. serratus*** (G.O. Sars, 1863) (N Atlantic, depth 100–1042 m)
– Telson with (slightly) convex lateral margins, microserrated on distal half up to all along ....
.... ***E. minutus*** Hansen, 1910 (Indo-Pacific, depth 0–94 m)

5. Endopod of uropods with microserrated mesial margin 6
– Endopod of uropods with mesial margin not serrated 9

6. Cornea longer than eyestalk measured along midline ....
.... ***E. peterdohrni*** Băcescu & Schiecke, 1974 (NE Atlantic, Mediterranean, depth 100–130 m)
– Cornea shorter than eyestalk; telson with bare lateral margins 7

7. Antennal scale not reaching or barely reaching beyond antennular trunk; endopod of thoracopod 8 long, when stretched posteriorly reaching beyond pleomere 6 ....
.... ***E. microps*** (G.O. Sars, 1864) (N Atlantic, depth 100–1074 m)
– Antennal scale reaches clearly beyond antennular trunk 8

8. Anterior margin of carapace obtuse-angled; eyes large, cornea diameter exceeds width of antennal scale; endopod of thoracopod 8 short, when stretched posteriorly not reaching beyond pleomere 5 .... ***E. elegans*** (G.O. Sars, 1863) (N Atlantic, Mediterranean, depth 0–252 m)
– Anterior margin of carapace broadly rounded, its large anteriorly uptilted portion resembling a rostrum covering basal portions of eyestalks; eyes small, cornea diameter not exceeding width of antennal scale .... ***E. glacialis*** G.O. Sars, 1885 (N Atlantic, Arctic Ocean, depth 242–1630 m)
Note. The previously unknown serration of the mesial margin of the endopod of uropods was discovered by the present author in six specimens from the Greenland Sea, 75°00.27′ N, 12°38.27′ W, depth 760 m, Aug. 1994, leg. Wulf C. Kobusch.

9. Lateral margins of telson micro-serrated along distal ≥⅓ 10
– Telson with bare lateral margins 12

10. Small ocular papilla dorsally on eyestalk; telson with very weakly serrated lateral margins ....
.... ***E. phuketensis*** Fukuoka & Murano, 2002 (Andaman Sea, depth 59 m)
– No ocular papilla 11

11. Lateral margins of telson with small denticles along distal third ....
.... ***E. parvus*** Brattegard, 1973 (Caribbean, Gulf of Mexico, depth 10–40 m)
– Telson furnished with series of small denticles along most of its lateral margins ....
.... ***E. frontieri*** Nouvel, 1974 (Madagascar, depth 1.5–6 m)

12. Terminal margin of telson with two pairs of large spines, flanked by a pair of small spines on disto-lateral edge .... ***E. nanus*** W.M. Tattersall, 1922 (Indo-Pacific, depth 2–11 m)
– Telson with two pairs of spines, no additional small spine 13

13. Eyestalks with dorsal ocular papilla ....
.... ***E. neapolitanus*** Colosi, 1929 (Mediterranean, depth 120–1355 m)
– Eyestalks without ocular papilla 14

14. Rostrum linguiform, distally broadly rounded 15
– Rostrum triangular, distally narrowly blunt or acutely pointed 16

15. Rostrum shorter than cornea diameter; distolateral spines of telson half as long as paramedian spines ....
E. erythrophthalmus (Goës, 1863) (Arctic Ocean, N Atlantic, Mediterranean, depth 12–600 m)
– Rostrum longer than cornea diameter; distolateral spines of telson ⅓ as long as paramedian spines .... ***E. yongei*** W.M. Tattersall, 1936 (Indo-Pacific, depth ≤400 m)

16. Broad obtuse-angled rostrum covering basal portions of eyestalks ....
.... ***E. africanus*** O.S. Tattersall, 1955 (E Atlantic, Mediterranean, depth 63–252 m)
– Anterior margin of carapace broadly rounded, not covering eyestalks (small triangular lobe from frons feigns a minute rostrum in dorsal view) ....
.... ***E. alboranus*** Băcescu, 1989 (W Mediterranean, depth 314 m)

Genus ***Euchaetomera*** G.O. Sars, 1883

1. Telson with spines on lateral margins 2
– Telson with bare lateral margins 4

2. Eyes without ocular papilla; apex of telson with two pairs of spines ....
.... ***E. spinosa*** Biju, Jasmine & Panumpunnayil, 2010 (S Indian Ocean, depth 40–70 m)
– Eyestalk with ocular papilla, apex of telson with one pair of spines 3

3. Tergites 1–6 of pleon furnished with spines; uropods without spine ....
E. zurstrasseni (Illig, 1906) (Indian Ocean, Southern Ocean, S Pacific, depth 200–2000 m)
– Only tergites 3–6 of pleon furnished with spines in full adults, tergites 1–2 without spines; endopod of uropod with one spine below statocyst ....
.... ***E. typica*** G.O. Sars, 1883 (panthalassic, depth 100–1000 m)

4. Lateral cornea smaller than frontal cornea ....
.... ***E. tenuis*** G.O. Sars, 1883 (panthalassic, depth 50–5000 m)
– Lateral cornea larger than frontal cornea 5

5. Rostrum rounded .... ***E. plebeja*** Hansen, 1912 (Pacific, depth 95–110 m)
– Rostrum acute-angled 6

6. Distal lobe of antennal scale extends at least half its length beyond antennular trunk 7
– Distal lobe of antennal scale extends, if at all, less than half its length beyond antennular trunk 8

7. Eyes reach proximal margin of distal segment of antennular trunk or beyond .... ***E. glyphidophthalmica*** Illig, 1906 (E Atlantic, Mediterranean, Indo-Pacific, NW Pacific, depth 0–550 m)
– Eyes not reaching beyond proximal margin of median segment of antennular trunk ....
.... ***E. richardi*** Nouvel, 1945 (W Mediterranean, depth ≤250 m)

8. Antennal scale 3–4 times as long as wide; distance between the two corneas < ½ of antero-posterior extension of lateral cornea ....
.... ***E. oculata*** Hansen, 1910 (Indian Ocean, Indo-Pacific, SW Pacific, depth 0–1400 m)
– Antennal scale 4–5 times as long as wide; distance between the two corneas > ½ of antero-posterior extension of lateral cornea ....
.... ***E. intermedia*** Nouvel, 1942 (Atlantic, Mediterranean, W Indian Ocean, depth 0–500 m)

Genus ***Euchaetomeropsis*** W.M. Tattersall, 1909

1. Exopod of uropods extends $\frac{1}{7}$ of its length beyond endopod; endopod with five spines below statocyst; terminal segment of antennal scale contributes $\frac{1}{8}$–$\frac{1}{6}$ to total length .... ***E. merolepis*** (Illig, 1908) (E Atlantic, Mediterranean, Indo-Pacific, depth ≤2000 m)
– Exopod of uropods extends $\frac{1}{4}$ of its length beyond endopod; uropods without spines; terminal segment of antennal scale contributes $\frac{1}{10}$ to total length .... ***E. pacifica*** Banner, 1948 (NE Pacific, depth ≤900 m)

Genus ***Gibbamblyops*** Murano & Krygier, 1985

G. longisquamosus Murano & Krygier, 1985 (NE Pacific, depth 2853–2997 m)

Genus ***Gibberythrops*** Illig, 1930

Key modified from Bravo & Murano (1997).

1. Terminal lobe of antennal scale extending beyond spine that distally delimits bare portion of lateral margin 2
– Terminal lobe of antennal scale not extending beyond spine that distally delimits bare portion of lateral margin 3

2. Cornea as wide as eyestalk. Telson with 4–5 spines on distal half of lateral margins .... ***G. acanthura*** (Illig, 1906) (Indian Ocean, Indo-Pacific, depth 163–1000 m)
– Cornea wider than stalk. Telson with 15–18 spines on distal third of lateral margins .... ***G. longicauda*** Bravo & Murano, 1997 (NW Pacific, depth 350–415 m)

3. Antennal scale nearly five times as long as broad; lateral margin straight. Telson elongate-triangular, with spines on distal half of lateral margins ....***G. typicus*** (Murano, 1969) (NW Pacific, depth 100–400 m)
– Antennal scale ≈6 times as long as broad; lateral margin curved outwardly. Telson linguiform with lateral constriction at $\frac{2}{5}$ of telson length from apex, telson with spines on distal $\frac{2}{5}$ of lateral margin .... ***G. stephensoni*** (W.M. Tattersall, 1936) (W Pacific, Indo-Pacific, depth 110–141 m)

Genus ***Gymnerythrops*** Hansen, 1910

1. Rostrum forms large trapezoid plate with rounded disto-lateral edges and with a tiny triangular median tip, together feigning a triangular rostrum with broadly rounded shoulders; terminal sinus $\frac{1}{8}$ of telson length .... ***G. anomalus*** Hansen, 1910 (Indonesia, depth 45–66 m)
– Rostrum with acute triangular apex; terminal sinus $\frac{1}{12}$ of telson length 2

2. Eyes with small cornea, narrower than eyestalk ....***G. microps*** Coifmann, 1936 (Red Sea, depth 400–800 m)
– Eyes with large cornea, wider than eyestalk .... ***G. macrops*** Pillai, 1973 (Indian Ocean, depth ≤200 m)

Genus ***Heteroerythrops*** O.S. Tattersall, 1955

Key modified from Murano (1981).

1. Antennal peduncle twice as long as antennular trunk. Merus of thoracic endopod 2 swollen, ≈$\frac{9}{5}$ times as long as maximum width (relation derived from Murano 1966: fig. 6b) ....***H. microps*** Murano, 1966 (NW Pacific, depth ≤740 m)
– Antennal peduncle as long as or shorter than antennular trunk. Merus of thoracic endopod 2 slender, >5 times as long as wide 2

2. Cornea wider than eyestalk. Antennal peduncle shorter than antennular trunk. Thoracic endopod 1 with carpopropodus longer than wide, its dactylus with setae not forming a fan .... ***H. purpurus*** O.S. Tattersall, 1955 (E Atlantic, NW Pacific, depth 420–700 m)
– Cornea as wide as eyestalk. Antennal peduncle as long as antennular trunk. Thoracic endopod 1 with carpopropodus shorter than wide, its dactylus with strong setae together forming a fan .... ***H. tanseii*** Murano, 1966 (NW Pacific, depth ≤ 1300 m)

Genus ***Holmesiella*** Ortmann, 1908

1. 3-segmented antennal peduncle with stout terminal segment overhanging median segment. Large disto-lateral spines of telson ⅕–¼ as long as telson; endopod of ♂ pleopod 4 with one modified seta .... ***H. affinis*** Ii, 1937 (W Pacific, depth 72–560 m)
– Antennal peduncle normal, its three segments lined within same plane. Large disto-lateral spines of telson < ⅕ as long as telson 2

2. Disto-lateral spines of telson ⅛–⅙ as long as telson, 1.4–2.0 times as long as adjoining distalmost lateral spines; endopod of ♂ pleopod 4 with one modified seta .... ***H. anomala*** Ortmann, 1908 (N Pacific, depth 10–1543 m)
– Disto-lateral spines of telson ⅒ as long as telson, subequal in length to adjoining distalmost lateral spines; endopod of ♂ pleopod 4 with two modified setae .... ***H. bisaetigera*** Fukuoka, 2009 (NW Pacific, depth 506–514 m)

Genus ***Hyperamblyops*** Birstein & Tchindonova, 1958

Note. The transfer of *Dactylamblyops japonica* Ii, 1964 (now *D. japonicus*) to the genus *Hyperamblyops* by Murano (1975) is not acknowledged here based on the morphology of the antennal scale. See the key to the genus *Dactylamblyops*.

1. Antennal scale extends ¼ of its length beyond antennular trunk; telson with 14–16 spines on distal ⅖ of lateral margins and with pair of slender spines tightly flanking paramedian pair of setae .... ***H. atlanticus*** Murano & Mauchline, 1999 (NE Atlantic, depth ≤ 2500 m)
– Antennal scale not extending beyond antennular trunk 2

2. Telson distally with pair of small paramedian spines flanked by pair of long slender spines, no setae; telson with 13 spines on distal ⅓ of lateral margins .... ***H. antarcticus*** (Hansen, 1913) (Southern Ocean, depth 400–2000 m)
– Terminal margin of telson with 2–3 setae (in addition to spines) 3

3. Telson distally with pair of slender spines flanking three setae; telson with eleven spines on distal ⅓ of lateral margins .... ***H. megalops*** (O.S. Tattersall, 1955) (Southern Ocean, depth ≤ 2500 m)
– Telson distally with pair of slender spines flanking pair of long paramedian setae, no unpaired median seta; telson with 22–25 spines on distal ⅖ of lateral margins .... ***H. nanus*** Birstein & Tchindonova, 1958 (NW Pacific, depth 200–4000 m)

Genus ***Hypererythrops*** Holt & Tattersall, 1905

Key modified from Murano (2010).

1. Telson armed with spines on distal ⅔ up to all along lateral margins 2
– Lateral margins of telson with spines only on distal half 7

2. Telson armed with < 9 spines on lateral margins 3
– Lateral margins of telson armed all along with > 9 spines 5

3. Rostrum pointed; pair of tooth-like sublateral projections behind antennal sympods from anterior margin of carapace ....***H. elegantulus*** Nouvel, 1974 (Madagascar, depth 40 m)
– Rostrum distally rounded; carapace without sublateral anterior projections 4

4. Antennal scale 3 times as long as broad; its terminal lobe distinctly longer than broad and 3–4 times as long as disto-lateral spine ....***H. serriventer*** Holt & Tattersall, 1905 (NE Atlantic, 190–620 m)
– Antennal scale 4.5 times as long as broad in ♂♂, 5.5 times in ♀♀; its terminal lobe 2–3 times as long as disto-lateral spine ......***H. validisaeta*** Fukuoka & Murano, 2002 (Andaman Sea, depth 28–72 m)

5. Cornea with small, incompletely separated anterior lobe ....
....***H. richardi*** Băcescu, 1941 (Mediterranean, depth 40–130 m)
– Cornea entire, without anterior lobe 6

6. Anterior margin of carapace with a pair of sublateral anterior projections ....
..............................***H. zimmeri*** Ii, 1937 (Mediterranean, Indo-Pacific, NW Pacific, depth 30–81 m)
– Anterior margin of carapace without sublateral projections ....
.... ***H. spiniferus*** (Hansen, 1910) (Indian Ocean, Indo-Pacific, E Pacific, depth 32–118 m)

7. Uropods without spines; endopod of ♂ pleopod 4 with single, distally modified seta ....
....***H. semispinosus*** Wang, 1998 (Indo-Pacific, depth 46–195 m)
– Endopod of uropod mesially with spines on ventral face; endopod of ♂ pleopod 4 without distally modified seta 8

8. Endopod of uropod with two spines on ventral face; antennal scale extending to distal margin of antennular trunk ....***H. caribbaeus*** Tattersall, 1937 (NW Atlantic, Caribbean, depth 168–403 m)
– Endopod of uropod with four spines on ventral face; antennal scale extending far beyond antennular trunk ....***H. suluensis*** Murano, 2010 (Indo-Pacific, depth 285–306 m)

Genus ***Illigiella*** Murano, 1981

I. brevisquamosa (Illig, 1906) (Red Sea, Indian Ocean, NW Pacific, depth 104–1200 m)

Genus ***Indoerythrops*** Panampunnayil, 1998

I. typicus Panampunnayil, 1998 (Indian Ocean, depth ≤100 m)

Genus ***Inusitatomysis*** Ii, 1940

I. insolita Ii, 1940 (N Pacific, depth 10–1000 m)

Genus ***Katerythrops*** Holt & Tattersall, 1905

Two other species have here been recombined with the genus *Meierythrops* Murano, 1981.

1. Rostrum distally transversely truncate; eyes large, cornea diameter exceeds maximum thickness of eyestalk ....***K. resimorus*** O.S. Tattersall, 1955 (SE Atlantic, depth ≤1100 m)
– Rostrum convex, broadly rounded; eyes small, cornea diameter shorter than maximum thickness of eyestalk ....
K. oceanae Holt & Tattersall, 1905 (Atlantic, Indian Ocean, Indo-Pacific, W Pacific, depth 200–3000 m)

Genus ***Liuimysis*** Wang, 1998

L. longicauda Wang, 1998 (Indo-Pacific, depth 195 m)

Genus ***Longithorax*** Illig, 1906

Key modified from Wittmann (2020).

1. Antennal scale divided by a subterminal suture 2
– Antennal scale entire 4

2. Cornea diameter smaller than length of basal segment of antennular trunk ....
.... ***L. valdiviae*** Wittmann, 2020 (Mid-Indian Ocean, pelagic, depth ≤2000 m)
– Cornea diameter exceeds length of basal segment of antennular trunk in dorsal view 3

3. Large triangular rostrum covers part of eyestalks and antennular trunk in dorsal view ....
.... ***L. megalops*** Murano & Mauchline, 1999 (NE Atlantic, 1000–4650 m, bathypelagic)
– Rostrum very short, not covering any part of eyestalks or antennular trunk ....
....***L. alicei*** Nouvel, 1942 (NE Atlantic, meso/bathypelagic, ≤1000 m)

4. Telson armed with 1–2 pairs of spines on apex and with 4–7 spines on distal third of each lateral margin ....
L. fuscus Hansen, 1908 (Atlantic, W Pacific, depth 600 to ≤2000 m (≤5700 m?), meso/bathypelagic)
– Telson armed with 1–2 pairs of spines on apex and with 0–2 subapical spines on each lateral margin 5

5. Telson with two pairs of small spines on narrow apex, lateral margins bare ....
.... ***L. similerythrops*** Illig, 1906 (Indian Ocean, pelagic, depth ≤2000 m)
– Telson with one pair of small spines on narrow apex and with one subapical spine on each lateral margin 6

6. Antennal scale <3 times as long as maximum width. Endopod of uropod with one spine below statocyst ....***L. capensis*** Zimmer, 1914 (Atlantic, W Indian Ocean, meso/bathypelagic, ≤3000 m)
– Antennal scale >3 times as long as maximum width. Endopod of uropod without spine below statocyst ...***L. nouveli*** O.S. Tattersall, 1955 (Atlantic, Mid-Pacific, mesopelagic, depth 400–900 m)

Genus ***Marumomysis*** Murano, 1999

1. Lateral margins of telson with eleven denticles; terminal margin with three pairs of large spines flanking a small median denticle ....***M. hakuhoae*** Murano, 1999 (Indo-Pacific, depth 2030 m)
– Lateral margins of telson with twenty denticles; terminal margin with four pairs of large spines flanking a small median denticle ....
....***M. antarctica*** San Vicente, 2007 (Southern Ocean, depth 1320–2920 m)

Genus ***Meierythrops*** Murano, 1981

Note. Its potential relationships to the genus *Katerythrops* were not discussed when the genus *Meierythrops* was erected by Murano (1981). *Katerythrops tattersalli* Illig, 1930 and *K. triangulata* Panampunnayil, 1977 are here recombined as *Meierythrops tattersalli* (Illig, 1930) comb. nov. and *M. triangulatus* (Panampunnayil, 1977) comb. nov., respectively, based on their having a short triangular rostrum with smooth lateral margins, agreeing with the type species of *Meierythrops* (*M. pacifica* Murano, 1981) rather than that of *Katerythrops* (*K. oceanae* Holt & Tattersall, 1905).

1. Antennal scale 6–7 times as long as broad, reaching to end of antennular trunk or beyond 2
– Antennal scale 3–5 times as long as broad, not reaching to terminal margin of antennular trunk ... 3

2. Antennal scale six times as long as broad and as long as antennular trunk; terminal margin of telson with pair of long slender spines tightly flanking a median plumose seta .... ***M. pacificus*** Murano, 1981 (NW Pacific, depth 320–500 m)
– Antennal scale seven times as long as broad, extending ⅖ of its length beyond antennular trunk; distal margin of telson with two pairs of tiny 'setae'.. ***M. tattersalli*** (Illig, 1930) comb. nov. (Indian Ocean, depth 385–860 m, also reported at ≤1500 m)

3. Antennal scale 3 times as long as broad; distal margin of telson with pair of tiny spines tightly flanking a pair of plumose paramedian setae; pleon with rostrally rounded, laterally projecting pleural plates .... ***M. parvispinis*** Fukuoka & Murano, 2001 (NW Pacific, depth ≤543 m)
– Antennal scale 5 times as long as broad; distal margin of telson with pair of tiny spines flanking a pair of shorter tiny structures, interpreted as spines by Panampunnayil (1977); no projecting pleural plates ....***M. triangulatus*** (Panampunnayil, 1977) comb. nov. (Indian Ocean, depth ≤1100 m)

Genus ***Metamblyops*** W.M. Tattersall, 1907

1. Acute triangular rostrum extends to anterior margin of eyes or slightly beyond; endopod of uropods with 5–6 spines below statocyst ....***M. oculatus*** W.M. Tattersall, 1907 (NE Atlantic, depth 1000–1500 m)
– Anterior margin of carapace broadly and evenly rounded, only marginally, if at all, forming a rostrum; endopod of uropods with 0–1 spine 2

2. Antennal scale 3 times as long as broad; anterior margin of carapace slightly uptilted above ocular symphysis; uropods without spine .... ***M. philippinensis*** (W.M. Tattersall, 1951) (Indo-Pacific, mesopelagic)
– Antennal scale 6 times as long as broad; anterior margin of carapace not produced anteriorly, leaving eyes completely uncovered; endopod of uropods with one spine below statocyst ....***M. macrops*** W.M. Tattersall, 1937 (Caribbean, SW Indian Ocean, depth 307–400 m)

Genus ***Meterythrops*** S.I. Smith, 1879

Key modified and updated from Fukuoka & Murano (2006).

1. Antennal scale without tooth ....***M. megalops*** Ii, 1964 (NW Pacific, depth 600–800 m)
– Antennal scale with disto-lateral tooth-like projection 2

2. Lateral margin of antennal scale serrated .... ***M. pictus*** Holt & Tattersall, 1905 (panthalassic, depth 390–1500 m, also reported at ≤2000 m)
– Lateral margin of antennal scale not serrated 3

3 Telson 1.1–1.3 times as long as maximum width; endopod of uropods with 0–1 spine below statocyst 4
– Telson 1.7–2.2 times as long as maximum width; endopod of uropods with >10 spines 5

4. Eyes globular; terminal lobe of antennal scale as long as disto-lateral tooth; endopod of uropods without spine ....***M. japonicus*** Murano, 1977 (NW Pacific, depth 220–543 m)
– Eyes dorsoventrally flattened; terminal lobe of antennal scale 2.8–2.9 times as long as disto-lateral tooth; endopod of uropods armed with a slender spine below statocyst ....***M. tenuispinis*** Fukuoka & Murano, 2006 (NW Pacific, depth 247–369 m)

5. Eyes slightly flattened dorsoventrally; antennal scale four times as long as broad .... ***M. robustus*** S.I. Smith, 1879 (circumpolar >35° N, depth 17–900 m, also reported at ≤2000 m)
– Eyes not compressed dorsoventrally 6

6 Antennal scale 3 times as long as broad; terminal lobe of antennal scale 1.2 times as long as broad at base; endopod of uropods with 12–18 spines ....***M. intermedius*** Fukuoka & Murano, 2006 (N Pacific: Shelikof Strait, depth unknown)
– Antennal scale 4 times as long as broad; terminal lobe of antennal scale twice as long as broad at base; endopod of uropods with > 20 spines 7

7. Endopod of uropods ventrally with 22–28 spines; lateral margins of telson gradually narrowing ....***M. microphthalmus*** W.M. Tattersall, 1951 (N Pacific, depth ≤ 3340 m)
– Endopod of uropods ventrally with 32–42 spines; lateral margins of telson abruptly narrowing near base .... ***M. muranous*** Petryashoy, 2015 (NW Pacific, depth 211–1607 m)

Genus ***Michthyops*** W.M. Tattersall, 1911

From Wittmann (2020).

1. Anterior protrusion of carapace covers ocular rudiment completely or slightly less; antennal scale > 7 times as long as wide; terminal margin of telson with 3–4 pairs of large spines ....***M. arcticus*** Petryashov, 1993 (Arctic Ocean, bathyal, depth 1079–3550 m)
– Anterior protrusion of carapace covers ocular rudiment for < ½ of its length; antennal scale < 7 times as long as wide 2

2. Telson < 2.5 times as long as maximum width near basis; terminal margin of telson with three pairs of large spines ....***M. parvus*** (Vanhöffen, 1897) (N Atlantic, Arctic, depth 183–2900 m)
– Telson > 2.5 times as long as maximum width near basis; terminal margin of telson with 4–8 (mostly 5–6) pairs of large spines ....***M. theeli*** (Ohlin, 1901) (circumarctic, Greenland Sea, depth 27–2245 m)

Genus ***Mysimenzies*** Băcescu, 1971

1. Antennal scale with short distal lobe; carpus of thoracic endopods 3–8 separated from 2-segmented propodus by an oblique articulation; thoracopod 1 without exopod .... ***M. hadalis*** Băcescu, 1971 (Peru Trench, depth 6146–6354 m)
– Antennal scale without distal lobe; carpus of thoracic endopods 3–8 separated from unsegmented propodus by a transverse articulation; thoracopod 1 with exopod ....***M. borealis*** Fukuoka, 2009 (NW Pacific, depth 4075–5268 m)

Genus ***Nakazawaia*** Murano, 1981

1. Disto-lateral tooth not extending beyond terminal lobe of antennal scale; telson with spines all along lateral margins; endopod of uropods with three spines below statocyst .... ***N. japonica*** Murano, 1981 (W Pacific, depth 78–260 m)
– Disto-lateral tooth strongly extending beyond terminal lobe of antennal scale; telson with spines only on distal ⅔ of lateral margins; endopod of uropods with 4–5 spines below statocyst .... ***N. secunda*** Bravo & Murano, 1997 (NW Pacific, depth 140–350 m)

Genus ***Neoamblyops*** Fukuoka, 2009

N. latisquamatus Fukuoka, 2009 (NW Pacific, depth 1535–1543 m)

Genus ***Nipponerythrops*** Murano, 1977

N. typicus Murano, 1977 (NW Pacific, depth 160–430 m)

Genus ***Paramblyops*** Holt & Tattersall, 1905

1. Rostrum anteriorly well-rounded, not reaching basal segment of antennular trunk, covering only basal portions of subrostral lobe (Figs 41B, 42C); antennal sympod without tooth (Fig. 42B) .... ***P. petrescui*** sp. nov. (Southern Ocean, depth 3049–3050 m)
– Rostrum with acute or blunt tip; antennal sympod with two tooth-like projections near disto-lateral edge 2

2. Rostrum not extending beyond eyes; lateral margins of telson all along with spines; clypeus with spear-shaped unpaired process projecting up to middle or almost to end of distal segment of antennular trunk; uropods without spines 3
– Acute triangular rostrum extending beyond eyes; lateral margins of telson with bare proximal ⅓, remaining ⅔ densely occupied by spines 4

3. Eyes extending to half-length of second segment of antennular trunk; rostrum weakly wide-angled, almost rectangular, not flanked by teeth from anterior margin of carapace; telson 2.2–2.4 times as long as width at basis; transverse terminal margin of telson with pair of minute paramedian spines flanked by large spines increasing in length laterally, no setae .... ***P. brevirostris*** O.S. Tattersall, 1955 (circum-Antarctic, depth 160–4655 m)
– Eyes extending to distal margin of second segment of antennular trunk; lateral margins of rostrum slightly concave, flanked by pair of strong antero-lateral teeth projecting from carapace; telson 1.8 times as long as width at basis, terminal margin with pair of paramedian setae flanked by pair of minute spines, in turn flanked by large spines increasing in length laterally .... ***P. macrops*** Murano, 2007 (Indo-Pacific, depth 535–547 m)

4. Rostrum finely denticulate from disto-lateral angles to a short distance from apex; telson 1.8–2.1 times as long as width at basis, lateral margins with 14–16 densely-set spines .... ***P. rostratus*** Holt & Tattersall, 1905 (NW Atlantic, E Atlantic, Mediterranean, depth 280–5434 m)
– Rostrum with smooth margins, only disto-lateral edge of carapace denticulate; telson > 2.0 times as long as width at basis, lateral margins with 10–14 spines 5

5. Terminal margin of telson with pair of small spines flanked by four pairs of large hispid spines; uropods without spine; labrum without rostral process .... ***P. hamatilis*** Fukuoka, 2009 (NW Pacific, depth 1535–2137 m)
– Terminal margin of telson with pair of small spines flanked by three pairs of longer smooth spines; endopod of uropods with single small spine below statocyst; labrum with short, triangular rostral process 6

6. Eye rudiments with nearly straight frontal margin, extending to tip of rostrum; lateral margins of telson with ≈ 10–11 spines .... ***P. tenuicaudus*** Murano, 2002 (Indo-Pacific, depth 495–500 m)
– Eye rudiments with concave frontal margin, extending to distal margin of basal segment of antennular trunk; lateral margins of telson with ≈ 13–14 spines .... ***P. spatulicaudus*** Murano, 2002 (Indo-Pacific, depth 4890 m)

Genus ***Parapseudomma*** Nouvel & Lagardère, 1976

1. Telson 1.7–2.9 times as long as maximum width near basis and 4–6 times width at disto-lateral edge, carpus of thoracic endopods 3–8 separated from the propodus by an oblique articulation .... ***P. calloplura*** (Holt & Tattersall, 1905) (NE Atlantic, Mediterranean, off Japan, depth 94–1355 m)
– Telson 2.7–3.0 times as long as maximum width near basis and 10–14 times width at disto-lateral edge, carpus of thoracic endopods 3–8 separated from propodus by a transverse articulation .... ***P. stenurum*** Wittmann, 2023 (E Atlantic, depth 3825–5460 m)

Genus ***Parerythrops*** G.O. Sars, 1869

1. Tip of telson with three pairs of spines 2
– Tip of telson with two pairs of spines 3

2. Eyes large, extending beyond lateral contour of carapace in dorsal view ....
..................***P. affinis*** Birstein & Tchindonova, 1958 (N Pacific, depth 1050–1070 m, bathypelagic)
– Eyes small, not extending beyond lateral contour of carapace ....
..................................***P. spectabilis*** G.O. Sars, 1885 (N Atlantic, Arctic Ocean, depth 225–1079 m)

3. Endopod of uropods with 19–22 spines below statocyst .... ***P. obesus*** (G.O. Sars, 1864) (Arctic Ocean, N Atlantic, Mediterranean, N Indian Ocean, depth 67–3000 m)
– Endopod of uropods with < 15 spines below statocyst 4

4. Endopod of uropods with 6–9 spines below statocyst ....
P. paucispinosus Nouvel & Lagardère, 1976 (NE Atlantic, Mediterranean, depth 100–400 m)
– Endopod of uropods with < 3 spines below statocyst 5

5. Endopod of uropods with two spines below statocyst ....
.... ***P. bispinosus*** Nouvel & Lagardère, 1976 (NE Atlantic, depth 190–300 m)
– Endopod of uropods with one spine below statocyst; eyes large, extending beyond lateral contour of carapace in dorsal view ....
...........***P. lobiancoi*** W.M. Tattersall, 1909 (Mediterranean, depth 363–1594 m, bathy/mesopelagic)

Genus ***Pleurerythrops*** Ii, 1964

1. Uropods without spine ....
P. americanus Zoppi de Roa & Delgado, 1989 (Caribbean, between mangrove roots at 1 m depth)
– Endopod of uropods with spines below statocyst 2

2. Endopod of uropods with one spine below statocyst ....
....***P. monospinosus*** Liu & Wang, 1986 (Indo-Pacific, depth 75–195 m)
– Endopod of uropods with > 1 spine below statocyst 3

3. Endopod of uropods with 6–7 spines below statocyst ....
.... ***P. secundus*** Murano, 1970 (NW Pacific, depth 25–240 m)
– Endopod of uropods with > 7 spines below statocyst; body constricted between thorax and pleon ..
.... 4

4. Endopod of uropods with 11–12 spines below statocyst ....
.... ***P. inscitus*** Ii, 1964 (Indo-Pacific, depth 0–85 m)
– Endopod of uropods with 16–17 short spines below statocyst ....
.................................***P. constrictus*** Panampunnayil, 1977 (N Indian Ocean, depth 0–75 m, coastal)

Genus ***Pseudamblyops*** Ii, 1964

P. conicops Ii, 1964 (NW Pacific, depth 325–2000 m)

Genus ***Pseuderythrops*** Coifmann, 1936

1. Eyes large, cornea bipartite with ommatidia-free part in between; lateral margins of telson with 16–17 spines ....***P. abrahami*** Biju & Panampunnayil, 2011 (Indo-Pacific, depth 199–300 m)
– Eyes normal, cornea entire 2

2. Lateral margins of telson with 14–15 spines; carpus of thoracic endopod 3 much longer than distally adjoining segment of propodus ....
P. gracilis Coifmann, 1936 (Red Sea, Indian Ocean, Indo-Pacific, depth 180–630 m, mesopelagic)
– Lateral margins of telson with 25 spines; carpus of thoracic endopod 3 shorter than distally adjoining segment of propodus ....***P. megalops*** Murano, 1998 (Indo-Pacific, depth 132–137 m)

Genus ***Pseudomma*** G.O. Sars, 1870

Key modified and updated from Murano (1974b).

1. Margins of eye rudiments not serrated 2
– Margins of eye rudiments serrated 15

2. Bare portion of lateral margin of antennal scale very short, distally delimited by large tooth close to base of scale ....
....................***P. australe*** (G.O. Sars, 1883) (Indo-Pacific: S Australia: Bass Strait, depth 60–120 m)
– Bare portion of lateral margin of antennal scale distally delimited by large tooth on distal half of scale 3

3. Telson with bare lateral margins 4
– Lateral margins of telson with spines or denticles 6

4. Telson with two pairs of spines on terminal margin ....
....***P. matsuei*** Murano, 1966 (Central and Western Pacific, depth $\leq$1000 m)
– Telson with 3–4 pairs of large spines on terminal margin 5

5. Telson $5/4$ times as long as maximum width near base ....
....***P. surugae*** Murano, 1974 (Central and Western Pacific, depth 80–430 m)
– Telson 1½ times as long as maximum width near base ....
..............................***P. intermedium*** Murano, 1974 (Central and Western Pacific, depth 570–660 m)

6. Telson triangular, $<5/4$ times as long as maximum width near base; apex with a pair of long spines 7
– Telson linguiform or truncate, $>5/4$ times as long as maximum width near base 9

7. Antennal scale 2.8–3.0 times as long as maximum width; telson with 6–7 spines on each lateral margin ....***P. brevicaudum*** Shen & Liu in Shen, Liu & Wang 1989 (W Pacific: coast of N China)
– Antennal scale 3–4 times as long as maximum width; telson with 1–3 denticles or spines on each lateral margin 8

8. Antennal scale $\approx$4 times as long as maximum width; telson with 2–3 denticles or spines on each lateral margin ......***P. minutum*** O.S. Tattersall, 1955 (Southern Ocean, SE Pacific, depth 30–278 m)
– Antennal scale $\approx$3 times as long as maximum width; telson with one denticle or spine on each lateral margin .... ***P. omoi*** Holmquist, 1957 (E Pacific, depth 20–25 m)

9. Antennal scale short, not extending beyond antennular trunk ....
............................***P. kruppi*** W.M. Tattersall, 1909 (NE Atlantic, Mediterranean, depth 300–720 m)
– Antennal scale extending ⅓–½ of its length beyond antennular trunk 10

10. Antennal scale $>7/2$ times as long as maximum width; lateral margins of telson with 11–14 short spines 11
– Antennal scale $<7/2$ times as long as maximum width; lateral margin of telson with <10 short spines 12

11. Antennal scale ⁹⁄₂ times as long as maximum width; telson with 11–13 short spines on distal half of each lateral margin ....***P. longisquamosum*** Murano, 1974 (Central and Western Pacific, depth 360–460 m)
– Antennal scale 3.7–3.8 times as long as maximum width; telson with 14 short spines on distal ¾ of each lateral margin .... ***P. oculospinum*** W.M. Tattersall, 1951 (off California, depth 900 m)

12. Telson linguiform, 1.3–1.5 times as long as maximum width, terminal margin convex, continuously rounded 13
– Telson trapezoid, 1.5–1.8 times as long as maximum width, terminal margin truncate with weakly rounded disto-lateral edges 14

13. Lateral margins of telson with 5–6 small spines; terminal margin with three pairs of long spines; eye rudiment without anterior projections .... ***P. calmani*** O.S. Tattersall, 1955 (Southern Ocean, SE Pacific, depth 94–390 m)
– Lateral margins of telson with 6–7 small spines, terminal margin with two pairs of long spines; anterior margin of eye rudiment with pair of small paramedian projections ....***P. armatum*** Hansen, 1913 (Southern Ocean, depth 60–631 m)

14. Antennal scale < 3 times as long as maximum width; lateral margins of telson with five small spines, terminal margin with two pairs of long spines ....***P. brevisquamosum*** Murano, 1974 (Central and Western Pacific, depth 570–660 m)
– Antennal scale 3.5–3.9 times as long as maximum width; lateral margins of telson with seven small spines, terminal margin with three pairs of long spines ....***P. belgicae*** Holt & W.M. Tattersall, 1906 (Southern Ocean, circumpolar, depth 150–1000 m, bathypelagic)

15. Lateral margins of telson with spines, if any, on less than distal ⅕ 16
– Lateral margins of telson with spines on more than distal ⅕ 24

16. Terminal margin of telson weakly concave, with two pairs of spines 17
– Terminal margin of telson truncate or broadly convex, with 2–10 pairs of spines 18

17. Telson ⁶⁄₅ times as long as maximum width near basis ....***P. bispinicaudum*** Murano, 1974 (NW Pacific, depth 100 m)
– Telson twice as long as maximum width near basis ....***P. kryo-troglodytum*** Wittmann & Chevaldonné, 2021 (East Antarctica, depth 10 m, marine ice cave)

18. Antennal scale extending > ⅓ of its length beyond antennular trunk 19
– Antennal scale extending ≤ ⅓ of its length beyond antennular trunk 22

19. Terminal margin of telson with two pairs of large spines 20
– Terminal margin of telson with > 2 pairs of large spines 21

20. Lateral margins of telson most distally with three small spines increasing in length distally ....***P. melandi*** San Vicente, 2011 (Southern Ocean: Bellingshausen Sea, depth 1395 m)
– No spines on lateral margins of telson ....***P. maasakii*** Meland & Brattegard, 2007 (N Atlantic: Rockall Trough, Iceland Basin, depth 1250–2300 m)

21. Telson ≈ ⅝ times as long as maximum width, its terminal margin with 3–4 pairs of large spines ....***P. antarcticum*** Zimmer, 1914 (Southern Ocean, N Atlantic, depth 278–3808 m)
– Telson twice as long as maximum width; distally with three pairs of small plus five pairs of large spines ....***P. bellingshausensis*** San Vicente, 2011 (Southern Ocean: Bellingshausen Sea, depth 612 m)

22. Endopod of uropod without spine; third segment of antennal peduncle ¾ length of preceding segment in ♀♀, ⁵⁄₄ in ♂♂; telson distally with four pairs of spines strongly increasing in size mesially ....***P. nanum*** Holt & Tattersall, 1906 (E Atlantic, depth 360–5460 m)
– Endopod of uropod with small spine on mesial margin below statocyst; third segment of antennal peduncle longer than preceding segment in both sexes 23

23. Telson distally with 9–10 pairs of densely-set spines strongly increasing in size mesially ......***P. jasi*** Meland & Brattegard, 1995 (N Atlantic: Icelandic Basin, SW of Faroe Islands, depth 1319–2139 m)
– Telson distally with four pairs of spines strongly increasing in size mesially; antennal peduncle mesially hispid by rows of small scales ....***P. marumoi*** Murano, 1974 (NW Pacific, depth 42–430 m)

24. Lateral margins of telson with spines on proximal fourth and beyond .... ***P. spinosum*** Wang, 1998 (SE of Hainan Island, northern South China Sea, depth 195–260 m)
– Telson without spines on proximal fourth 25

25. Lateral margin of telson with 10–15 spines arranged in series of groups of large spines with small spines in between 26
– Lateral margins of telson with subequal spines or toothlets 27

26. Telson 3 times as long as broad .... ***P. longicaudum*** O.S. Tattersall, 1955 (Southern Ocean: Antarctic Peninsula, depth 160–336 m)
– Telson 1½ times as long as maximum width ....***P. lamellicaudum*** Murano, 1974 (NW Pacific, depth 558–660 m)

27. Terminal margin of telson with six pairs of spines increasing in length mesially, lateral margins with 6–11 densely set spines ....***P. islandicum*** Meland & Brattegard, 2007 (N Atlantic: Icelandic Basin, depth 1940–2500 m)
– Terminal margin of telson with 1–5 pairs of large spines 28

28. Telson with four small, distantly-set toothlets along distal ¾ of each lateral margin ....***P. heardi*** Stuck, 1981 (Gulf of Mexico, depth 18–60 m)
– Telson with spines or toothlets along <¾ of lateral margins 29

29. Terminal margin of telson with five pairs of spines clearly increasing in length laterally 30
– Terminal margin of telson with spines subequal or increasing in length mesially 31

30. Margin of eye rudiments with ≈25 fine teeth (scales) ....***P. schollaertensis*** O.S. Tattersall, 1955 (Southern Ocean, depth 160–335 m)
– Margin of eye rudiments with ≈10 coarse teeth .... ***P. multispina*** Birstein & Tchindonova, 1958 (NW Pacific, depth 1430–1690 m)

31. Terminal lobe of antennal scale not extending beyond or extending less than half its length beyond tooth distally delimiting bare portion of lateral margin 32
– Terminal lobe of antennal scale extending at least half its length beyond the tooth distally delimiting bare portion of lateral margin 37

32. Margin of eye rudiments with ≈20–25 fine teeth (scales); telson with 6–7 small spines loosely distributed over distal ⅔ of each lateral margin ....***P. latiphthalmum*** Murano, 1974 (Japan: Suruga Bay, depth 280–660 m)
– Margin of eye rudiments with 6–14 coarse teeth 33

33. Eye rudiment with distinct ridge on dorsal surface; antennal scale 3 times as long as maximum width; telson with 8–10 spines on each lateral margin ....
.... ***P. magellanensis*** O.S. Tattersall, 1955 (Magellan Strait, depth 50–300 m, epibenthic)
– Eye rudiment without such a distinct ridge on dorsal surface 34

34. Three pairs of large spines on truncate terminal margin of telson; eye rudiments with ≈ 14 coarse teeth .... ***P. crassidentatum*** Murano, 1974 (NW Pacific, depth 1020–2055 m, epibenthic)
– Telson with rounded convex terminal margin 35

35. Terminal margin of telson with two pairs of long spines; telson essentially triangular with broadly rounded apex, 1.1 times as long as maximum width; disto-lateral spine ⅔ as long as disto-mesial spine; eye rudiment with ≈ 6–7 coarse teeth ....
.... ***P. californica*** Băcescu & Gleye, 1979 (California, depth 75 m)
– Terminal margin of telson with three pairs of long spines; telson roughly trapezoid, 1.4–1.6 times as long as maximum width; eye rudiment with > 7 coarse teeth 36

36. Terminal margin of telson with three pairs of long subequal spines; eye rudiment with ≈ 8–9 coarse teeth .... ***P. berkeleyi*** W.M. Tattersall, 1933 (NE Pacific, depth 118 m, epibenthic)
– Terminal margin of telson with three pairs of spines, outermost pair much shorter than two inner pairs; eye rudiment with > 10 coarse teeth ....
P. semispinosum Wang, 1998 (SE off Hainan Island, northern South China Sea, depth 195–220 m)

37. Distal lobe of antennal scale < ⅕ of total scale length 38
– Distal lobe of antennal scale > ⅕ of total scale length 41

38. Terminal margin of telson with four pairs of spines ....
.... ***P. sarsii*** Willemoes-Suhm in G.O. Sars, 1884 (Southern Ocean, depth 75–3962 m)
– Terminal margin of telson with 2–3 pairs of spines 39

39. Terminal margin of telson with two pairs of spines ....
.... ***P. okiyamai*** Murano, 1974 (NW Pacific, depth 355–3347 m)
– Terminal margin of telson with three pairs of spines 40

40. Terminal margin of telson with three pairs of long spines ....
.... ***P. tanseii*** Murano, 1974 (NW Pacific, depth 570–660 m)
– Terminal margin of telson with two pairs of long spines and one pair of short spines ....
.... ***P. izuensis*** Murano, 1966 (NW Pacific, depth 211–1607 m)

41. Telson truncate, with ≈ 8 spines on each lateral margin and four spines on terminal margin ....
P. truncatum S.I. Smith, 1879 (northern circumpolar at temperate to arctic latitudes, depth 5–996 m)
– Telson linguiform, distally with 1–4 pairs of large spines 42

42. Telson with 3–4 pairs of spines on terminal margin 43
– Telson with 1–2 pairs of spines on terminal margin 45

43. Endopod of uropod with one spine on mesial margin near statocyst ....
.... ***P. japonicum*** Murano, 1970 (NW Pacific, depth 42–430 m)
– Uropods without spine 44

44. Distal lobe contributing ¼–⅖ to total length of antennal scale; telson with width of terminal margin ≈⅖ of maximum width near basis .... ***P. affine*** G.O. Sars, 1870 (W Mediterranean, NE Atlantic from Macaronesia to Icelandic Basin, also NW Atlantic, depth 70–2082 m, benthic)
– Distal lobe contributing ¼ to total length of antennal scale; telson with width of terminal margin ≈ ½ of maximum width near basis ....***P. chattoni*** Băcescu, 1941 (synonym of *P. affine*?) (W Mediterranean, depth 220–300 m)

45. Bare portion of lateral margin ≈ 2 times as long as distal lobe of antennal scale ....***P. frigidum*** Hansen, 1908 (N Atlantic, boreal to arctic, depth 600–1556 m)
– Bare portion of lateral margin ≈ 1½ times as long as distal lobe of antennal scale ....***P. roseum*** G.O. Sars, 1870 (N Atlantic, Arctic, depth 346–1016 m)

Genus ***Pteromysis*** Ii, 1964

P. amemiyai Ii, 1964 (NW Pacific, depth 350–500 m)

Genus ***Schizurakrops*** gen. nov.

S. meesi gen. et sp. nov. (Southern Ocean, depth 1996–1993 m)

Genus ***Scolamblyops*** Murano, 1974

1 Anterior process of clypeus not extending beyond basal segment of antennular trunk, exopod of uropods extending ¼ of its length beyond telson, telson with spines all along distal ½ to ⅔ .... ***S. japonicus*** Murano, 1974 (NW Pacific, depth 570–2055 m)
– Anterior process of clypeus extending beyond median segment of antennular trunk (Fig. 45D), exopod of uropods extending ⅓ of its length beyond telson, telson with spines along distal ⅚ (Fig. 49K) ....***S. muehlenhardtae*** sp. nov. (Southern Ocean, depth 1993–2920 m)

Genus ***Shenimysis*** Wang, 1998

S. cordata Wang, 1998 (NW Pacific, depth 220 m)

Genus ***Stellamblyops*** Petryashov & Frutos, 2017

1 Rostrum long, extending up to median segment of antennular trunk, eye rudiments laterally compressed, mid-terminal cleft penetrating 3% of telson length ....***S. vassilenkoae*** Petryashov & Frutos, 2017 (NW Pacific, depth 3371–5429 m)
– Rostrum short (Fig. 51B), extending only to basal part of basal segment of antennular trunk, eye rudiments dorsoventrally flattened by a factor of ≈ 1.4, mid-terminal indentation penetrating 1% of telson length (Fig. 53H–I) ....***S. doryphorus*** sp. nov. (Southern Ocean, depth 2372–4678 m)

Genus ***Synerythrops*** Hansen, 1910

1. Telson trapezoid, distally transversely truncate with rounded disto-lateral edges, its lateral margins with 1–2 spines; antennal scale unsegmented, its terminal lobe extending shortly beyond disto-lateral tooth ....***S. truncatus*** Murano, 1975 (NW Pacific, depth 300 m)
– Telson subtriangular, distally well rounded, its lateral margins with 4–6 spines 2

2. Antennal scale with small apical segment, its terminal lobe extending beyond disto-lateral tooth ... ***S. intermedius*** Hansen, 1910 (N Indian Ocean, Indo-Pacific, SW Pacific, depth 144–620 m)
– Antennal scale unsegmented, terminal lobe not extending beyond disto-lateral tooth ....***S. cruciatus*** W.M. Tattersall, 1951 (Caribbean, depth 366–549 m)

Genus ***Teratamblyops*** Murano, 2001

Data from Murano (2001: table 2).

1. Telson with 16–20 spines on distal half of lateral margins; median segment of antennular trunk normal, without lobes on lateral and mesial margins; eye rudiments produced anteriorly in two acute processes .... ***T. gracilura*** (W.M. Tattersall, 1907) (NE Atlantic, depth 1500–1646 m)
– Telson with < 15 spines on distal third of lateral margins; median segment of antennular trunk with one lobe on lateral margin and three lobes on mesial margin 2

2. Eye rudiments produced anteriorly in two acute processes; telson with 10–11 spines on lateral margins .... ***T. suluensis*** Murano, 2001 (Indo-Pacific, depth 2030 m)
– Eye rudiments produced anteriorly in one triangular process; telson with 8–9 spines on lateral margins .... ***T. philippinensis*** Murano, 2001 (Indo-Pacific, depth 5510–5530 m)

Genus ***Teraterythrops*** Ii, 1964

1. Disto-lateral tooth not extending beyond terminal margin of antennal scale; lateral margins of telson with one spine at disto-lateral corner .... ***T. parvus*** (Zimmer, 1914) (E Atlantic, depth 3000 m)
– Disto-lateral tooth extending beyond terminal margin of antennal scale; lateral margins of telson distally with three spines ....***T. robustus*** (Birstein & Tchindonova, 1958) (N Pacific, depth 300–1500 m)

Genus ***Thalassomysis*** W.M. Tattersall, 1939

1. Anterior margin of carapace continuously broadly rounded; rostrum, if any, weakly developed, leaving eyestalks dorsally entirely exposed; lateral margins of telson with ≈ 30 spines on distal ⅔, terminus with two spines ....***T. sewelli*** W.M. Tattersall, 1939 (Arabian Sea, depth ≤ 1500 m)
– Anterior margin of carapace with semicircular projection (rostrum) covering part of eyestalks; lateral margins of telson with 11–17 spines on distal ⅔, terminus with four spines ....***T. tattersalli*** Nouvel, 1942 (panoceanic abyssal, depth 2926–4931 m)

Genus ***Xenomysis*** Kou, Meland & Li, 2020

X. unicornis Kou, Meland & Li, 2020 (Mariana Trench, depth 7449 m)

Key to the species of the subfamily Mysidellinae

Mysidae with labrum posteriorly extended by strongly asymmetrical lobes and with mandibles furnished with large cutting edge but no teeth, as the most striking autapomorphies; antennal scale setose all around; endopod of thoracopod 1 with strongly expanded propodus bearing strong spiniform setae; endopod 3 not prehensile; three pairs of oostegites; penes tubular, strongly developed; pleomeres without projecting pleural plates; pleopods rudimentary, uniramous and unsegmented in both sexes; both rami of uropods undivided, endopod with spines on mesial margin; telson with terminal cleft lined with laminae or spines, no setae .... subfamily **Mysidellinae** Czerniavsky, 1882 (monotypic): genus ***Mysidella*** G.O. Sars, 1872 (18 species)

1. Eyes without visual elements or with rudimentary elements, no compound cornea 2
– Eyes well developed 3

2. Minute telson cleft with only two laminae ....***M. typhlops*** G.O. Sars, 1872 (NE Atlantic, depth 293–794 m)
– Cleft penetrating 11–12% of telson length (Fig. 65I), cleft lined with ≈ 12 laminae ....***M. antarctica*** sp. nov. (Southern Ocean, depth 3103 m)

3. Lateral margins of telson with spine series interrupted by a large spine-free stretch of ≥⅕ of telson length 4
– Lateral margins of telson with spine series uninterrupted or interrupted by a spine-free stretch of < ⅛ of telson length 5

4. Eyes without ocular papilla; lateral margins of telson with separate clusters of 1–2 proximal and 4–6 distal spines .... ***M. incisa*** Wang, 1998 (NW Pacific, Indo-Pacific, depth 20–115 m)
– Eyes with prominent ocular papilla; lateral margins of telson with separate clusters of three proximal and 6–7 distal spines ....***M. hoshinoi*** Shimomura, 2016 (NW Pacific, depth 35 m)

5. Terminal cleft < 8% of telson length 6
– Terminal cleft ≥ 8% of telson length 8

6. Terminal cleft 4% of telson length, cleft lined by 6–7 laminae (spines), lateral margins of telson with 13–14 spines .... ***M. australiana*** Fenton, 1990 (SW Pacific, depth 32–95 m)
– Terminal cleft 5–7% of telson length, cleft lined by 2–4 laminae (spines), lateral margins of telson with 7–9 spines 7

7. Lateral margins of telson all along with spines, telson cleft with two laminae (spines) .... ***M. mukaii*** Murano, 2002 (Indo-Pacific, depth 3 m)
– Lateral margins of telson with spines only on distal half, telson cleft lined with 3–4 laminae (spines) ....***M. truncata*** Murano, 2002 (NW Pacific, depth 138–141 m)

8. Lateral margins of telson with 24–28 spines 9
– Lateral margins of telson with 6–20 spines 13

9. Terminal cleft 20% of telson length, cleft with ≥ 35 laminae (spines) 10
– Terminal cleft 13–18% of telson length, cleft with < 30 laminae (spines) 11

10. Short, obtusely rounded rostrum not covering eyestalks, disto-lateral lobes of telson linguiform, terminally rounded ....***M. tanakai*** Ii, 1964 (NW Pacific, depth 220–1075 m)
– Triangular rostrum covering basal portions of eyestalks, disto-lateral lobes of telson triangular with blunt apex .... ***M. sulcata*** Murano, 2002 (Indo-Pacific, depth 535–738 m)

11. Propodus of thoracic endopod 1 with eight modified, spine-like setae ....***M. macrophthalma*** Murano, 2002 (Indo-Pacific, depth 415–437 m)
– Propodus of thoracic endopod 1 with three modified, spine-like setae (structure as in Fig. 65C) 12

12. Lateral margin of antennal scale with setae only on distal third ....***M. americana*** Banner, 1948 (NE Pacific, depth 30–600 m)
– Lateral margin of antennal scale all along with setae .... ***M. biscayensis*** Lagardère & Nouvel, 1980 (NE Atlantic, Mediterranean, depth 190–720 m)

13. Terminal cleft 20–23% of telson length 14
– Terminal cleft 8–14% of telson length 16

14. Propodus of thoracic endopod 1 with three modified, spine-like setae, telson cleft lined with 24 laminae (spines) ....***M. orientalis*** Murano, 2002 (NW Pacific, depth 347–528 m)
– Propodus of thoracic endopod 1 with five modified, spine-like setae, telson cleft lined with 13–20 laminae (spines) 15

15. Telson cleft, lined with 20 laminae (spines), lateral margins of telson with 20 spines .... ***M. nana*** Murano, 1970 (NW Pacific, depth 18–80 m)
– Telson cleft, lined with 13 laminae (spines), lateral margins of telson with 10–12 spines .... ***M. tenuicauda*** Wang, 1998 (NW Pacific, depth 78 m)

16. Short obtuse-angled triangular rostrum not covering eyestalks, merus of thoracic endopod 2 is 1.6 times as long as carpopropodus .... ***M. typica*** G.O. Sars, 1872 (NE Atlantic, Mediterranean, depth 55–540 m)
– Carapace anteriorly broadly rounded, no clear rostrum developed, merus of thoracic endopod 2 is 0.8–1.1 times as long as carpopropodus 17

17. Propodus of thoracic endopod 1 with three modified, spine-like setae, lateral margins of telson with 6–12 spines .... ***M. minuta*** Brattegard, 1973 (Caribbean, depth 5–40 m)
– Propodus of thoracic endopod 1 with five modified, spine-like setae, lateral margins of telson with 13–18 spines .... ***M. rotundincisa*** Wang, 1998 (NW Pacific, depth 26–260 m)

Acknowledgements

The author is greatly indebted to Ute Muehlenhardt-Siegel from the Museum of Nature Hamburg for loan of material, in particular for her great patience with the long-lasting loan and examinations. My sincere thanks go to Nancy Mercado from the Museum of Nature Hamburg for managing loans of material, to Torleiv Brattegard from the University of Bergen for exchange of mysid material, to Kouki Fukuoka from the Fisheries Technology Institute (Nagasaki Branch) for sending a photo of the pleural plates of *Meierythrops parvispinis* and to Jan Mees from the Vlaams Instituut voor de Zee in Oostende for a current excerpt from the WoRMS database. The journal editors and anonymous referees are acknowledged for their great and fruitful efforts in reviewing and improving the original manuscript.

References

Anadón A. 1993. Misidáceos (Crustacea: Mysidacea) de la plataforma y talud continentales de la costa central asturiana. *Boletín de la Asociación española de Entomología* 17: 191–204.

Ariani A.P., Wittmann K.J. & Franco E. 1993. A comparative study of static bodies in mysid crustaceans: evolutionary implications of crystallographic characteristics. *Biological Bulletin* 185: 393–404. https://doi.org/10.2307/1542480

Astthorsson O.S. & Brattegard T. 2022. Distribution and biology of Lophogastrida and Mysida (Crustacea) in Icelandic waters. *Fjölrit Náttúrufræðistofnunar* 58: 1–114. https://doi.org/10.33112/1027-832X.58

Băcesco M. 1941. Les mysidacés des eaux méditerranéennes de la France (spécialement de Banyuls) et des eaux de Monaco. *Bulletin de l'Institut océanographique de Monaco* 795: 1–46.

Banner A.H. 1948a. A taxonomic study of the Mysidacea and Euphausiacea (Crustacea) of the northeastern Pacific. Part I. Mysidacea, from family Lophogastridae through tribe Erythropini. *Transactions of the Royal Canadian Institute* 26: 345–414.

Banner A.H. 1948b. A taxonomic study of the Mysidacea and Euphausiacea (Crustacea) of the northeastern Pacific. Part II. Mysidacea, from tribe Mysini through subfamily Mysidellinae. *Transactions of the Royal Canadian Institute* 27: 65–125.

Birstein J.A. & Tchindonova Yu.G. 1958. Glibocovodnie misidii severo-zapadnoi tschasii Tihogo Okeana [The deep-sea mysids of the northwest Pacific Ocean]. *Trudy lnstituta Okeanologii Akademii Nauk SSSR* 27: 258–355.

Birstein J.A. & Tchindonova Yu.G. 1962. Misidi (Mysidacea) sobrannie Sovetskoj Antarktischeskoj Ekspediociej na dizel-zlektrohode "Ob" [Mysidacea collected by the Soviet Antarctic Expedition with the R.V. “Ob”]. *In*: Andrijashev A.P. & Ushakov P.V. (eds) *Rezultati Biologitscheskih Issledovanij Sovetskoj Antarktischeskoj Ekspedidcii (1955–1958 gg.)* [*Biological Results of the Soviet Antarctic Expedition (1955–1958)*]. *Issledovanija Fauni Morej* [*Exploration of the Faunas of the Seas*] 1: 58–68.

Birstein J.A. & Tchindonova Yu.G. 1970. New mysids (Crustacea, Mysidacea) from the Kurile-Kamtchatka Trench. *Trudy lnstituta Okeanologii Akademii Nauk SSSR* 86: 277–291.

Brandt A., Vassilenko S., Piepenburg D. & Thurston M. 1996. The species composition of the peracarid fauna (Crustacea, Malacostraca) of the Northeast Water polynya (Greenland). *Meddelelser om Gronland, Bioscience* 44: 1–30.

Brandt A., Mühlenhardt-Siegel U. & Siegel V. 1998. An account of the Mysidacea (Crustacea, Malacostraca) of the Southern Ocean. *Antarctic Science* 10: 3–11. https://doi.org/10.1017/S0954102098000029

Brandt A., Mühlenhardt-Siegel U. & Schmidt A. 1999. Density, diversity, and community patterns of selected peracarid taxa (Malacostraca) in the Beagle Channel, South America. *In*: Schram F.R. & von Vaupel Klein J.C. (eds) *Crustaceans and the Biodiversity Crisis. Proceedings of the Fourth International Crustacean Congress, July 20–24, 1998* 1: 541–558. Koninklijke Brill NV, Leiden.

Brandt A., De Broyer C., Gooday A.J., Hilbig B. & Thomson M.R.A. 2003. Introduction to ANDEEP (ANtarctic benthic DEEP-sea biodiversity: colonization history and recent community patterns) — a tribute to Howard L. Sanders. *Deep-Sea Research Part II: Topical Studies in Oceanography* 470: 45–49. https://doi.org/10.1016/j.dsr2.2004.08.006

Brandt A., Brenke N., Mühlenhardt-Siegel U. & Wägele J.W. 2006. 1.4.6. Macrofauna represented in sledge-samples. *In*: Balzer W., Alheit J., Emeis K.C., Lass H.U. & Türkay M. (eds) *South-East Atlantic 2000, Leg M48/1; Cruise No. 48, 6 July 2000–3 November 2000, Walvis Bay–Walvis Bay*. *Meteor-Berichte* 06–5: 1–22 to 1–26. https://doi.org/10.2312/cr_m48

Brandt A., Brix S., Brökeland W., Choudhury M., Kaiser S. & Malyutina M. 2007. Deep-sea isopod biodiversity, abundance, and endemism in the Atlantic sector of the Southern Ocean — Results from the ANDEEP I–III expeditions. *Deep-Sea Research Part II: Topical Studies in Oceanography* 54: 1760–1775. https://doi.org/10.1016/j.dsr2.2007.07.015

Brattegard T. 1973. Mysidacea from shallow water on the Caribbean coast of Colombia. *Sarsia* 54: 1–65. https://doi.org/10.1080/00364827.1973.10411249

Brattegard T. 1974. Additional Mysidacea from shallow water on the Caribbean coast of Colombia. *Sarsia* 57: 47–86. https://doi.org/10.1080/00364827.1974.10411270

Brattegard T. & Meland K. 1997. Mysidacea (Crustacea) in the Faroe area. *Fróðskaparrit* 45: 69–95.

Bravo M.R. & Murano M. 1997. Two new mysids of the tribe Erythropini (Crustacea, Mysidacea, Mysidae) from Central Japan. *Bulletin of the National Science Museum, Series A: Zoology* 23: 85–96.

Cartes J.E. & Sorbe J.-C. 1995. Deep-water mysids of the Catalan Sea: species composition, bathymetric and near-bottom distribution. *Journal of the Marine Biological Association of the United Kingdom* 75: 187–197. https://doi.org/10.1017/S0025315400015290

Chevaldonné P., Rastorgueff P.-A., Arslan D. & Lejeusne C. 2015. Molecular and distribution data on the poorly known, elusive, cave mysid *Harmelinella mariannae* (Crustacea: Mysida). *Marine Ecology* 36: 305–317. https://doi.org/10.1111/maec.12139

Colosi G. 1929. I misidacei del Golfo di Napoli. *Pubblicazioni della Stazione Zoologica di Napoli* 9: 405–441.

Corbari L. & Sorbe J.-C. 2001. Structure of the suprabenthic assemblages in the Capbreton area (SE of the bay of Biscay). *In*: Elbée J. & Prouzet P. (eds) *Océanographie du Golfe de Gascogne. VII Colloque Internationale, Biarritz, 4–6 avril 2000. Actes de Colloques-IFREMER* 87–95 (31): 96–101.

Daneliya M.E. 2023. Mysid subfamily Boreomysinae (Crustacea: Mysida: Mysidae) in the Southeast Australian Deep-sea. *Records of the Australian Museum* 75: 87–124. https://doi.org/10.3853/j.2201-4349.75.2023.1845

Dewicke A. 2002. *Hyperbenthic Communities of the North Sea. De hyperbenthische Gemeenschappen van de Noordzee.* PhD Thesis, University of Ghent, Belgium.

Discovery Committee 1929. Discovery investigations station list 1925–1927. *Discovery Reports* 1: 1–140. Available from https://ia800301.us.archive.org/1/items/discoveryreports11929inst/discoveryreports11929inst.pdf [accessed 24 Jun. 2021].

Fahrbach E. (ed.) 2006. The expedition ANTARKTIS-XXII/3 of the research vessel “Polarstern” in 2005. *Berichte zur Polar- und Meeresforschung* 533: 1–246. https://doi.org/10.2312/BzPM_0533_2006

Fenton G.E. 1990. *Mysidella australiana* sp.nov. from Bass Strait, Australia (Crustacea: Mysidae: Mysidellinae). *Memoirs of the Museum of Victoria* 50: 437–441.

Frutos I. & Sorbe J.-C. 2013. Bathyal suprabenthic assemblages from the southern margin of the Capbreton Canyon (“Kostarrenkala” area), SE Bay of Biscay. *Deep-Sea Research Part II: Topical Studies in Oceanography* 102: 291–309. https://doi.org/10.1016/j.dsr2.2013.09.010

Fukuoka K. 2009. Deep-sea mysidaceans (Crustacea: Lophogastrida and Mysida) from the northwestern North Pacific off Japan, with descriptions of six new species. *In*: Fujita T. (ed.) *Deep-sea Fauna and Pollutants off Pacific Coast of Northern Japan*. *National Museum of Nature and Science Monographs* 39: 405–446.

Fukuoka K & Murano M. 2006. Taxonomy of the genus *Meterythrops* (Crustacea: Mysida: Mysidae), with a redescription of *M. microphthalmus* and descriptions of two new species. *Journal of Natural History* 40: 1641–1674. https://doi.org/10.1080/00222930600956858

Fütterer D.K., Brandt A. & Poore G.C.B (eds) 2003. The Expeditions ANTARKTIS-XIX/3-4 of the Research Vessel POLARSTERN in 2002 (ANDEEP I and II: Antarctic benthic deep-sea biodiversity – colonization history and recent community patterns). *Berichte zur Polar- und Meeresforschung* 470: 1–174. https://doi.org/10.2312/BzPM_0470_2003

Gerken S., Watling L. & Williams I.P. 1997. Order Mysidacea. *In*: Blake J.A. & Scott P.H. (eds) *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. The Arthropoda — The Pycnogonida. The Crustacea Part 1 — The Decapoda and Mysidacea* 10: 123–142. Santa Barbara Museum of Natural History, Santa Barbara, CA.

Gerstaecker A. & Ortmann A.E. 1901. Crustacea (zweite Hälfte Malacostraca). *In*: Bronn H.G. (ed.) *Die Klassen und Ordnungen der Arthropoden: wissenschaftlich dargestellt in Wort und Bild* vol. 5, sect. 1, pt. 2: 1–1319. C.F. Winter’sche Verlagsbuchhandlung, Leipzig. https://doi.org/10.5962/bhl.title.9999

Gleye L.G. 1981. *Acanthomysis nephrophthalma* and *Mysidella americana* (Mysidacea, Mysidae) along the coast of southern California. *Crustaceana* 40: 220–221. https://doi.org/10.1163/156854081X00651

Golovan O.A., Blazewicz-Paszkowycz M., Brandt A., Budnikova L.L., Elsner N.O., Ivin V.V., Lavrenteva A.V., Malyutina M.V., Petryashov V.V. & Tzareva L.A. 2013. Diversity and distribution of peracarid crustaceans (Malacostraca) from the continental slope and the deep-sea basin of the Sea of Japan. *Deep-Sea Research Part II: Topical Studies in Oceanography* 86–87: 66–78. https://doi.org/10.1016/j.dsr2.2012.08.002

Golovan O.A., Blazewicz M., Brandt A., Jazdzewska A., Jozwiak P., Lavrenteva A., Malyutina M., Petryashov V.V. & Riehl T. 2019. Diversity and distribution of peracarid crustaceans (Malacostraca) from the abyss adjacent to the Kuril-Kamchatka Trench. *Marine Biodiversity* 49: 1343–1360. https://doi.org/10.1007/s12526-018-0908-3

Hallberg E. & Chaigneau J. 2004. The non-visual sense organs. *In*: Forest J. & von Vaupel Klein J.C. (eds) *The Crustacea. Revised and Updated from the Traité de Zoologie* 1 (7): 301–380. E.J. Brill, Leiden.

Hansen H.J. 1910. The Schizopoda of the Siboga Expedition. *Siboga Expeditie, Monographie* 37: 1–77. Available from https://ia801605.us.archive.org/1/items/schizopodaofsibo00hans/schizopodaofsibo00hans.pdf [accessed 14 Sep. 2023].

Hansen H.J. 1913. *Report on the Crustacea Schizopoda Collected by the Swedish Antarctic Expedition 1901–1903, under the Charge of Baron Dr. Otto Nordenskjöld*: 1–56. G.E.C. Gad, Copenhagen.

Hernández-Payán J.C. & Hendrickx M.E. 2020. *Neobirsteiniamysis inermis* (Willemoes-Suhm, 1874) (Peracarida, Mysida, Mysidae) in western Mexico. *Nauplius* 28: e2020043. https://doi.org/10.1590/2358-2936e2020043

Holt E.W.L. & Beaumont W.I. 1900. Survey of fishing-grounds, west coast of Ireland, 1890–1891. X. Report on the Crustacea Schizopoda of Ireland. *The Scientific Transactions of the Royal Dublin Society*, ser. II 7: 221–252.

Holt E.W.L. & Tattersall W.M. 1905. Schizopodous Crustacea from the north-east Atlantic slope. *Report on the Sea and Inland Fisheries of Ireland for 1902 and 1903. Part II. Scientific Investigations, Appendix* IV: 99–152. Fisheries Branch, Department of Agriculture for Ireland, Dublin. Available from https://ia801305.us.archive.org/30/items/biostor-118057/biostor-118057.pdf [accessed 30 Aug. 2018].

Holt E.W.L. & Tattersall W.M. 1906a. Schizopodous Crustacea from the Northeast Atlantic Slope. Supplement. *Report on the Sea and Inland Fisheries of Ireland. Part II. Scientific Investigations, Appendix* V: 1–49. Fisheries Research Board of Ireland, Dublin.

Holt E.W.L. & Tattersall W.M. 1906b. Preliminary notice of the Schizopoda collected by H.M.S. Discovery in the Antarctic region. *Annals and Magazine of Natural History*, ser. 7 17: 1–11. https://doi.org/10.1080/00222930608562484

Howe J.A. 2003. Chapter 3.4.2. Recent depositional environments of the north western Weddell Sandwich Trench. *In*: Fütterer D.K., Brandt A. & Poore G.C.B (eds) *The Expeditions ANTARKTIS-XIX/3-4 of the Research Vessel POLARSTERN in 2002 (ANDEEP I and II: Antarctic Benthic Deep-sea Biodiversity – Colonization History and Recent Community Patterns). Berichte zur Polar- und Meeresforschung* 470: 124–126. https://doi.org/10.2312/BzPM_0470_2003

Howe J.A. 2006. Chapter 9.4.2. Recent sedimentation and geochemistry across the Northern Weddell Sea and adjacent deep-water regions, Antarctica. *In*: Fahrbach E. (ed.) *The Expedition ANTARKTIS-XXII/3 of the Research Vessel "Polarstern" in 2005. Berichte zur Polar- und Meeresforschung* 533: 196–208. https://doi.org/10.2312/BzPM_0533_2006

ICZN 1999. *International Code of Zoological Nomenclature,* 4th edition. International Commission on Zoological Nomenclature, London. Available from https://www.iczn.org/the-code/the-international-code-of-zoological-nomenclature/the-code-online/ [accessed 16 Sep. 2023].

Ii N. 1964. Mysidae (Crustacea). *In*: *Fauna Japonica* 7: 1–610. Biogeographical Society of Japan, Tokyo.

Illig G. 1906. 2. Bericht über die neuen Schizopodengattungen und -arten der deutschen Tiefsee-Expedition 1898–1899. I. Mysideen. *Zoologischer Anzeiger* 30 (2): 194–211.

Illig G. 1930. Die Schizopoden der Deutschen Tiefsee-Expedition. *In*: Chun C. (ed.) *Wissenschaftliche Ergebnisse der deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia" 1898–1899* 22 (6): 397–620. Gustav Fischer Verlag, Jena.

ITIS 2019. Integrated Taxonomic Information System. *Amblyops tenuicauda* W.M. Tattersall, 1911. Available from https://www.itis.gov/servlet/SingleRpt/SingleRpt#null [accessed 30 Aug. 2019].

Kathman R.D., Austin W.C., Saltman J.C. & Fulton J.D. 1986. Identification manual to the Mysidacea and Euphausiacea of the northeast Pacific. *Canadian Special Publication of Fisheries and Aquatic Sciences* 93: 1–411.

Kazmi Q.B., Tirmizi N.M. & Mauchline J. 1999. An illustrated key to the Malacostraca (Crustacea) of the northern Arabian Sea, Pakistan. Part IV: Mysidacea. *Pakistan Journal of Marine Science* 8: 131–157.

Kou Q., Li X., He L. & Wang Y. 2018. Rediscovery of the hadal species *Amblyops magnus* Birstein & Tchindonova, 1958 (Crustacea: Mysida: Mysidae): first record for the Mariana Trench. *Zootaxa* 4402 (1): 42–52. https://doi.org/10.11646/zootaxa.4402.1.2

Lagardère J.-P. 1972. Recherches sur l'alimentation des crevettes de la pente continentale marocaine. *Téthys* 3: 655–675.

Lagardère J.-P. 1985. 34. Mysidacés. Biogéographie et composition taxonomique du peuplement abyssal de mysidacés. *In*: Laubier L. & Monniot Cl. (eds) *Peuplements profonds du Golfe de Gascogne*: 425–428. Ed. Ifremer.

Lagardère J.-P. & Nouvel H. 1980. Les mysidacés du talus continental du Golfe de Gascogne. II. Familles des Lophogastridae, Eucopiidae et Mysidae (tribu des Erythropini exceptée). (Suite et fin). *Bulletin du Muséum national d'Histoire naturelle, Paris, 4ème Série, section A* (*Zoologie, Biologie, Écologie animale*) 2: 845–887.

Land M.F. 2004. Eyes and vision. *In*: Forest J. & von Vaupel Klein J.C. (eds) *The Crustacea. Revised and Updated from the Traité de Zoologie* 1 (6): 257–299. E.J. Brill, Leiden.

Ledoyer M. 1990. Mysidacea (Crustacea) de la campagne EPOS 3 en Mer du Weddell, Antarctique. *Mésogée* 50: 37–44.

Ledoyer M. 1995. Mysidacés (Crustacea) de Kerguelen, Crozet et Bouvet (Océan Austral) récoltés par la Japonaise, le Marion-Dufresne (1972–82) et dans des contenus stomacaux d'oiseaux. *Journal of Natural History* 29 (3): 601–618. https://doi.org/10.1080/00222939500770211

Lerosey-Aubril R. & Meyer R. 2013. The sensory dorsal organs of crustaceans. *Biological Reviews* 88: 406–426. https://doi.org/10.1111/brv.12011

Liu R. & Wang S. 2000. Arthropoda Crustacea Malacostraca. Order Mysidacea. *In*: Editorial Committee of Fauna Sinica, Academia Sinica (ed.) *Fauna Sinica* 21: 1–318. Science Press, Bejing.

Lowry J.K. 1986. The callynophore, a eucaridan/peracaridan sensory organ prevalent among the Amphipoda (Crustacea). *Zoologica Scripta* 15: 333–349. https://doi.org/10.1111/j.1463-6409.1986.tb00234.x

Mauchline J. 1977. The integumental sensilla and glands of pelagic Crustacea. *Journal of the Marine Biological Association of the United Kingdom* 57: 973–994.

Mauchline J. 1980. The biology of mysids and euphausiids. *Advances in Marine Biology* 18: 1–677.

Mauchline J. 1982. The predation of mysids by fish of the Rockall Trough, northeast Atlantic Ocean. *Hydrobiologia* 93: 85–99.

Mauchline J. & Murano M. 1977. World list of the Mysidacea, Crustacea. *Journal of the Tokyo University of Fisheries* 64: 39–88.

Mees J. & Meland K. (eds) 2024. World List of Lophogastrida, Stygiomysida and Mysida. *In*: *World Register of Marine Species*. Instant Web Publishing. Available from https://www.marinespecies.org/aphia.php?p=taxdetails&id=931983 [accessed 19 Jan. 2024].

Meland K. 2004. Species diversity and phylogeny of the deep-sea genus *Pseudomma* (Crustacea: Mysida). *Zootaxa* 649 (1): 1–30. https://doi.org/10.11646/zootaxa.649.1.1

Meland K. & Brattegard T. 2007. New Mysida (Crustacea) in the genera *Amblyops* and *Pseudomma* from the Iceland Basin. *Zootaxa* 1628 (1): 43–58. https://doi.org/10.11646/zootaxa.1628.1.3

Meland K., Mees J., Porter M. & Wittmann K.J. 2015. Taxonomic review of the orders Mysida and Stygiomysida (Crustacea, Peracarida). *Plos One* 10 (4): e0124656. https://doi.org/10.1371/journal.pone.0124656

Melville R. & Smith J.D.D. 1987. *Official Lists and Indexes of Names and Works in Zoology*. International Trust for Zoological Nomenclature, London.

Moyle D. & Byrne C. 2020. Glossary. *In*: *The Caterpillar Key*. Tasmanian Museum and Art Gallery, Hobart. Available from https://keys.lucidcentral.org/keys/v3/the-caterpillar-key/key/caterpillar_key/Media/Html/entities/glossary.htm (accessed 10 Sep. 2023).

Murano M. 1966. Desriptions of two new species of *Heteroerythrops* (Mysidacea) from Japan. *Journal of the Oceanographical Society of Japan* 22: 111–118. https://doi.org/10.5928/kaiyou1942.22.111

Murano M. 1969. Three new species of Mysidacea from Japan. *Crustaceana* 17: 207–219. https://doi.org/10.1163/156854068X00098

Murano M. 1971. Mysidacean fauna in Sagami Bay and Suruga Bay. *Proceedings of the Japanese Society of Systematic Zoology* 7: 45–48. https://doi.org/10.19004/pjssz.7.0_45

Murano M. 1974a. *Scolamblyops japonicus* gen. nov., sp. nov. (Mysidacea) from Suruga Bay, Japan. *Crustaceana* 26: 225–228. https://doi.org/10.1163/156854074X00604

Murano M. 1974b. Mysidacea from the Central and Western Pacific I. The genus *Pseudomma* (tribe Erythropini). *Publications of the Seto Marine Biological Laboratory* 21: 287–334. https://doi.org/10.5134/175878

Murano M. 1975. Mysidacea from the Central and Western Pacific II. Genera *Hyperamblyops*, *Teraterythrops* and *Synerythrops* (tribe Erythropini). *Publications of the Seto Marine Biological Laboratory* 22: 81–103.

Murano M. 1977. Mysidacea from the Central and Western Pacific IV. Genera *Euchaetomera*, *Euchaetomeropsis*, *Arachnomysis*, *Caesaromysis*, *Echinomysides*, *Meterythrops* and *Nipponerythrops* (tribe Erythropini). *Publications of the Seto Marine Biological Laboratory* 24: 141–192.

Murano M. 1981. Mysidacea from the Central and Western Pacific V. Genera *Heteroerythrops*, *Meierythrops*, *Pleurerythrops*, *Gibberythrops*, *Illigiella*, *Dactylamblyops*, *Pseudamblyops*, *Paramblyops*, *Dactylerythrops* and *Nakazawai* (tribe Erythropini). *Publications of the Seto Marine Biological Laboratory* 26: 261–302. https://doi.org/10.5134/176038

Murano M. 1999. Mysidacea. *In*: Boltovskoy D. (ed.) *South Atlantic Zooplankton* 2: 1099–1140. Backhuys Publishers, Leiden.

Murano M. 2001. A new mysid genus, *Teratamblyops*, from deep-sea with description of two new species (Crustacea: Mysidacea: Mysidae: Erythropini). *Bulletin of the National Science Museum, Tokyo, Series A, Zoology* 27: 61–69.

Murano M. 2002a. Two new species of the genus *Paramblyops* (Crustacea: Mysidacea: Mysidae) from the Sulu Sea. *Bulletin of the National Science Museum, Tokyo, Series A, Zoology* 28: 35–41.

Murano M. 2002b. The genus *Mysidella* (Crustacea, Mysidacea, Mysidae), with descriptions of five new species. *Bulletin of the National Science Museum, Tokyo, Series A, Zoology* 28: 65–90.

Murano M. 2007. A new species of the genus *Paramblyops* (Crustacea, Mysida, Mysidae) from the Timor Sea. *Bulletin of the National Science Museum, Tokyo, Series A, Zoology* 33: 105–111.

Murano M. 2010. A new species of the genus *Hypererythrops* (Crustacea, Mysida, Mysidae) from the Sulu Sea. *Bulletin of the National Museum of Nature and Science, Series A* 36: 33–38.

Murano M. 2012. The genus *Amblyops* (Crustacea: Mysida: Mysidae: Erythropinae) from East Asia and Australia, with descriptions of ten new species. *Species Diversity* 17: 49–85. https://doi.org/10.12782/sd.17.1.049

Murano M. & Krygier E.E. 1985. Bathypelagic mysids from the northeastern Pacific. *Journal of Crustacean Biology* 5: 686–706. https://doi.org/10.2307/1548246

Murano M. & Mauchline J. 1999. Deep-sea mysids from the North Atlantic Ocean with description of four new species. *Crustaceana* 72: 273–295. https://doi.org/10.1163/156854099503366

Murray J. 1895. A summary of the scientific results obtained at the sounding, dredging, and trawling stations of H.M.S. Challenger. *In*: Murray J. (ed.) *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1872–76, pt. 1*: 1–796. Eyre and Spottiswoode, London.

Norris D.E. & Overstreet R.M. 1976. The public health implications of larval *Thynnascaris* nematodes from shellfish. *Journal of Milk and Food Technology* 39: 47–54.

Nouvel H. 1942. Diagnoses préliminaires de mysidacés nouveaux provenant des campagnes du Prince Albert 1er de Monaco. *Bulletin de l'Institut océanographique de Monaco* 831: 1–12.

Nouvel H. 1943. Mysidacés provenant des campagnes du Prince-Albert Ier de Monaco. *In*: Richard J. (ed.) *Résultats des Campagnes scientifiques accomplies sur son Yacht par Albert Ier* 105: 1–128. Imprimerie de Monaco.

Nouvel H. & Lagardère J.-P. 1976. Les mysidacés du talus continental du Golfe de Gascogne. I. Tribu des Erythropini (genre *Erythrops* excepté). *Bulletin du Muséum national d'histoire naturelle, 3e Série* 414, *Zoologie* 291: 1243–1324.

Nouvel H., Casanova J.-P. & Lagardère J.-P. 1999. 4. Ordre des mysidacés (Mysidacea Boas 1883). *In*: Forest J. (ed.) *Traité de Zoologie. Tome VII. Crustacés. Fasc. IIIA. Crustacés Péracarides*. *Mémoires de l'Institut Océanographique, Monaco* 19: 39–86.

Ohlin A. 1901. Arctic Crustacea collected during the Swedish Arctic expeditions 1898, 1899 and 1900 under the direction of A.G. Nathorst and G. Kolthoff. II. Decapoda, Schizopoda. *Kongliga svenska Vetenskaps-akademiens Handlingar, Suppl.* 27 (IV) 8: 1–91.

Patience A. 1907. On the occurrence of the schizopod, *Pseudomma roseum*, G.O. Sars, within the Clyde Sea area. *Proceedings and Transactions of the Natural History Society of Glasgow* 7: 74–76.

Petryashov V.V. 1993. Deep-sea mysids (Crustacea, Mysidacea) of the Arctic Basin (Arctic Ocean). *In*: Stepanjants S.D. (ed.) *Marine Plankton. Taxonomy, Ecology, Distribution II. Explorations of the Fauna of the Seas* 45 (53): 70–89.

Petryashov V.V. 2005. Biogeographical division of the North Pacific sublittoral and upper bathyal zones by the fauna of Mysidacea and Anomura (Crustacea). *Russian Journal of Marine Biology* 31 (Suppl. 1): S9–S26.

Petryashov V.V. 2006. Mysids (Crustacea, Mysidacea) of the Antarctic and Subantarctic from the collection of the Zoological Institute, Russian Academy of Sciences. Mysida: Erythropini and Amblyopsini tribes. *Zoologicheskij Zhurnal* 85: 1402–1421.

Petryashov V.V. 2007. Biogeographical division of Antarctic and Subantarctic by mysid (Crustacea: Mysidacea) fauna. *Russian Journal of Marine Biology* 33: 1–16.

Petryashov V.V. 2014a. Chapter 5.16. Lophogastrida and Mysida (Crustacea: Malacostraca: Peracarida) of the Southern Ocean. *In*: De Broyer C., Koubbi P., Griffiths H.J., Raymond B., d'Udekem d'Acoz C., Van de Putte A.P., Danis B., David B., Grant S., Gutt J., Held C., Hosie G., Huettmann F., Post A. & Ropert-Coudert Y. (eds) *Biogeographic Atlas of the Southern Ocean (CoML/CAML Atlas). Census of Antarctic Marine Life. SCAR-Marine Biodiversity Information Network*: 149–154. Scientific Commitee on Antarctic Research, Cambridge, UK.

Petryashov V.V. 2014b. Deep-sea fauna of European seas: An annotated species check-list of benthic invertebrates living deeper than 2000 m in the seas bordering Europe. Mysida, Lophogastrida. *Invertebrate Zoology* 11: 183–191.

Petryashov V.V. & Frutos I. 2017. A new deep-sea mysid, *Stellamblyops vassilenkoae* gen. nov., sp. nov., from the Northwest Pacific (Crustacea: Mysida). *Proceedings of the Zoological Institute of the Russian Academy of Sciences* 321: 403–410.

Pillai N.K. 1964. Report on the Mysidacea in the collections of the Central Marine Fisheries Research Institute, Mandapam Camp, South India – Part I. *Journal of the Marine Biological Association of India* 6: 1–41.

Pillai N.K. 1965. A review of the work of shallow-water Mysidacea of the Indian waters. *In*: *Proceedings of the Symposium on Crustacea, held at Ernakulam from January 12 to 15, 1965. Part V*: 1681–1728. Marine Biological Association of India, Mandapam Camp.

Price W.W. 2001. World list of Mysidacea. NeMys doc_id: 3677. Available from
http://www.marinespecies.org/aphia.php?p=sourcedetails&id=4191 [accessed 23 Jul. 2002].

Reddy P.R. & Reddy P.S. 2012. Eyestalk hormones on molting and reproduction. *In*: *Concepts of Neuropeptide Hormones in Crab*: 1–172. Lambert Academic Publishing, Saarbrücken, Germany.

Ríos P., Áltuna A., Frutos I., Manjón-Cabeza E., García-Guillén L., Macías-Ramírez A., Ibarrola T.P., Gofas S., Taboada S., Souto J., Álvarez F., Saiz-Salinas J.I., Cárdenas P., Rodríguez-Cabello C., Lourido A., Boza C., Rodríguez-Basalo A., Prado E., Abad-Uribarren A., Parra S., Sánchez F. & Cristobo J. 2022. Avilés Canyon System: increasing the benthic biodiversity knowledge. *Estuarine, Coastal and Shelf Science* 274: e107924. https://doi.org/10.1016/j.ecss.2022.107924

Rustad D. 1930. Mysidacea. *Scientific Results of the Norwegian Antarctic Expeditions 1927–1928 and 1928–1929*: 1 (6): 1–28.

San Vicente C. 2007. A new species of *Marumomysis* (Mysidacea: Mysidae: Erythropini) from the benthos of the Bellingshausen Sea (Southern Ocean). *Scientia Marina* 71: 683–690.

San Vicente C. 2010. Species diversity of Antarctic mysids (Crustacea: Lophogastrida and Mysida). *In*: Mulder T.J. (ed.) *Antarctica: Global, Environmental and Economic Issues, Chapter 1*: 1–80. Nova Science Publishers Inc, Hauppauge, NY.

San Vicente C. 2011. New Mysida (Crustacea) in the genus *Pseudomma* from the Bellingshausen Sea (Southern Ocean). *Zootaxa* 2833 (1): 15–28. https://doi.org/10.11646/zootaxa.2833.1.2

San Vicente C. 2017. Geographical and bathymetric distribution of mysids (Crustacea: Mysida) in the seas of the Iberian Peninsula. *Zootaxa* 4244 (2): 151–194. https://doi.org/10.11646/zootaxa.4244.2.1

San Vicente C. & Cartes J.E. 2011. *Dactylamblyops corberai* n. sp., a new mysid (Crustacea: Mysida) from the deep Mediterranean Sea. *Scientia Marina* 75: 455–464. https://doi.org/10.3989/scimar.2011.75n3455

San Vicente C., Ramos A. & Sorbe J.-C. 2006. Suprabenthic euphausiids and mysids from the South Shetland Islands and the Bransfield Strait, Southern Ocean (BENTART-95 cruise). *Polar Biology* 29: 211–222. https://doi.org/10.1007/s00300-005-0041-1

San Vicente C., Frutos I. & Sorbe J.-C. 2013. *Mysidopsis cachuchoensis* sp. nov. (Crustacea: Mysida: Mysidae), a new suprabenthic mysid from bathyal soft-bottoms of the Le Danois Bank (southern Bay of Biscay). *Journal of the Marine Biological Association of the United Kingdom* 93: 769–780. https://doi.org/10.1017/S0025315412000987

Sars G.O. 1869. VII. Undersøgelser over Christianiafjordens dybvandsfauna. *Nyt Magazin for Naturvidenskaberne* 16: 305–362.

Sars G.O. 1872a. *Carcinologiske Bidrag til Norges Fauna. I. Monographi over de ved Norges Kyster forekommende Mysider*. Part 2: 1–34. Brøgger & Christie's Bogtrykkeri, Christiania [Oslo]. Available from https://ia601609.us.archive.org/35/items/carcinologiskebi113sars/carcinologiskebi113sars.pdf [accessed 15 Jul. 2013].

Sars G.O. 1872b. Undersøgelser over Hardanger Fjordens fauna. I. Crustacea. *Forhandlinger i Videnskabs-Selskabet* 1871: 246–286.

Sars G.O. 1879. *Carcinologiske Bidrag til Norges Fauna. I. Monographi over de ved Norges Kyster forekommende Mysider. Part 3*: 1–131. A.W. Brøgger, Christiania [Oslo]. Available from https://ia801609.us.archive.org/35/items/carcinologiskebi113sars/carcinologiskebi113sars.pdf [accessed 15 Jul. 2013].

Sars G.O. 1884. Preliminary notices on the Schizopoda of H.M.S. Challenger expedition. *Forhandlinger i Videnskabs-Selskabet* 7 (1883): 1–43.

Sars G.O. 1885. Report on the Schizopoda collected by H.M.S. Challenger during the years 1873–1876. *In*: Nartes G.S. (ed.) *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1873–76* 13 (37): 1–228. Longmans & Co., London. Available from https://ia802607.us.archive.org/3/items/reportonschizopo00sars/reportonschizopo00sars.pdf [accessed 15 Sep. 2023].

Sars M. 1869. Fortsatte Bemærkninger over det dyriske Livs Utdbredning i Havets Dybder. *Forhandlinger i Videnskabs-Selskabet* 1868: 246–275.

Sewell R.B.S. 1935. Introduction and list of stations. *John Murray Expedition 1933–34, Scientific Reports* 1: 1–41. Available from https://ia800207.us.archive.org/4/items/scientificreport1193john/scientificreport1193john.pdf [accessed 8 Sep. 2018].

Shimomura M. 2016. *Mysidella hoshinoi*, a new species from Izu-Oshima Island, Japan (Crustacea, Mysidae, Mysidellinae). *ZooKeys* 620: 21–32. https://doi.org/10.3897/zookeys.620.9924

Siegel V. & Mühlenhardt-Siegel U. 1988. On the occurrence and biology of some Antarctic Mysidacea (Crustacea). *Polar Biology* 8: 181–190. https://doi.org/10.1007/BF00443451

Stebbing T.R.R. 1893. A history of the Crustacea. Recent Malacostraca. *The International Scientific Series* 71 (American ed.): 1–466.

Tattersall O.S. 1955. Mysidacea. *Discovery Reports* 28: 1–190. Available from https://www.biodiversitylibrary.org/page/5607377 [accessed 5 Apr. 2024].

Tattersall O.S. 1965. The fauna of the Ross Sea, Pt. 4. Mysidacea. *New Zealand Department of Scientific and Industrial Research Bulletin* 167: 9–25.

Tattersall W.M. 1907. Preliminary diagnoses of six new Mysidae from the west coast of Ireland. *Annals and Magazine of Natural History*, ser. 7 19: 106–118.

Tattersall W.M. 1908. Crustacea VII. Schizopoda. *In*: *National Antarctic Expedition, 1901–1904, Natural History. Vol. IV. Zoology (Various Invertebrata)*: 1–42. British Museum (Natural History), London. Available from
https://ia600206.us.archive.org/2/items/biostor-103920/biostor-103920.pdf [accessed 14 Sep. 2023].

Tattersall W.M. 1911. Schizopodous Crustacea from the northeast Atlantic slope. *Scientific Investigations of the Fisheries Research Board of Ireland* (1910), Suppl. II: 1–77.

Tattersall W.M. 1923. Crustacea. Part. VII. – Mysidacea. *In*: British Antarctic (Terra Nova) Expedition, 1910. *Natural History Report, British Museum (Natural History), Zoology* 3: 273–304.

Tattersall W.M. 1939. The Euphausiacea and Mysidacea of the John Murray Expedition to the Indian Ocean. *John Murray Expedition 1933–1934, Scientific Reports* 5: 203–246.

Tattersall W.M. 1951. A review of the Mysidacea of the United States National Museum. *Bulletin of the United States National Museum* 201: 1–292. https://doi.org/10.5962/bhl.part.16843

Tattersall W.M. & Tattersall O.S. 1951. The British Mysidacea. *Ray Society Monograph* 136: 1–460.

Tchindonova Yu.G. 1981. New data on systematic position of some deep-sea mysids (Mysidacea, Crustacea) and their distribution in the World Ocean. *In*: *Proceedings of the XIV Pacific Science Congress (Khabarovsk, August 1979). Section Marine Biology. Biology of the Pacific Ocean Depths* 1: 24–33. Academy of Sciences of the USSR, Far East Science Center, Institute of Marine Biology, Vladivostok.

Tchindonova Yu.G. 1993. The distribution of the deep-sea near bottom pelagical Mysidacea (Crustacea) in the World Ocean and the relationship between high taxons in this group of animals. *In*: Vinogradova N.G. (ed.) *Glubokovodnai͡a Donnai͡a Fauna I͡Uzhnoĭ Chasti Atlanticheskogo Okeana* [*The Deep-sea Bottom Fauna in the Southern Part of the Atlantic Ocean*.] *Transactions of the P.P. Shirshov Institute of Oceanology* 127: 147–158.

Valkanov A. 1935. Velezh'ki v'rkhu nashite brakichni vodi I [Notizen über die Brackwässer Bulgariens 1]. *Annuaire de l'Université de Sofia. III. Faculté physico-mathématique, Livre 3* (*Sciences naturelles*) 31: 249–303.

Vanquickelberghe V. 2004. *Spatial Distribution and Biodiversity Patterns of the Hyperbenthos along NE Atlantic Continental Margins*. Sc.D. Thesis, Unversity of Ghent, Belgium.
Available from https://biblio.ugent.be/publication/470516 [accessed 12 Aug. 2015].

Ventura-López C., Gómez-Anduro G., Arcos F.G., Llera-Herrera R., Racotta I.S. & Ibarra A.M. 2016. A novel CHH gene from the Pacific white shrimp *Litopenaeus vannamei* was characterized and found highly expressed in gut and less in eyestalk and other extra-eyestalk tissues. *Gene* 582: 148−160. https://doi.org/10.1016/j.gene.2016.02.011

Wang S. 1998. On new and rare species of Mysidacea (Crustacea) from the northern South China Sea. *Studia Marina Sinica* 40: 199−244.

Willemoes-Suhm R. von 1874. Von der Challenger-Expedition: Briefe an C.Th.E. v. Siebold, II. *Zeitschrift für wissenschaftliche Zoologie* 24: ix–xxiii.

Wittmann K.J. 1995. Sexuelle Hypertrophien bei Mysidaceen (Crustacea) als polare Anpassungen der Reproduktionsbiologie und ihre Bedeutung für die Biodiversität in antarktischen Gewässern. *Berichte zur Polarforschung* 155: 94–97.

Wittmann K.J. 1996. Morphological and reproductive adaptations in Antarctic meso- to bathypelagic Mysidacea (Crustacea), with description of *Mysifaun erigens* n. g. n. sp. *In*: Uiblein F., Ott J. & Stachowitsch M. (eds) *Deep-sea and Extreme Shallow-water Habitats: Affinities and Adaptations*. Biosystematics and Ecology Series 11: 221–231.

Wittmann K.J. 2020. Lophogastrida and Mysida (Crustacea) of the "DIVA-1" deep-sea expedition to the Angola Basin (SE-Atlantic). *European Journal of Taxonomy* 628: 1–43.
https://doi.org/10.5852/ejt.2020.628

Wittmann K.J. 2022. The Petalophthalmidae (Crustacea: Mysida) of the ANDEEP I–III expeditions to the Antarctic deep sea, with description of a new species and first record of photophores in mysids. *Crustacean Research* 51: 55–89. https://doi.org/10.18353/crustacea.51.0_55

Wittmann K.J. 2023. Evidence and modification of non-visual eyestalk organs in troglobiont Mysida and Stygiomysida (Crustacea). *Arthropoda* 1 (4): 432–450 + suppl. https://doi.org/10.3390/arthropoda1040019

Wittmann K.J. & Ariani A.P. 2019. Amazonia versus Pontocaspis: a key to understanding the mineral composition of mysid statoliths (Crustacea: Mysida). *Biogeographia – The Journal of Integrative Biogeography* 34: 1–15, Suppl.: 1–34. https://doi.org/10.21426/B634142438

Wittmann K.J. & Chevaldonné P. 2021. First report of the order Mysida (Crustacea) in Antarctic marine ice caves, with description of a new species of *Pseudomma* and investigations on the taxonomy, morphology and life habits of *Mysidetes* species. *ZooKeys* 1079: 145–227, suppl. 1. https://doi.org/10.3897/zookeys.1079.76412

Wittmann K.J., Schlacher T.A. & Ariani A.P. 1993. Structure of Recent and fossil mysid statoliths (Crustacea, Mysidacea). *Journal of Morphology* 215: 31–49. https://doi.org/10.1002/jmor.1052150103

Wittmann K.J., Ariani A.P. & Lagardère J.-P. 2014. Chapter 54. Orders Lophogastrida Boas, 1883, Stygiomysida Tchindonova, 1981, and Mysida Boas, 1883 (also known collectively as Mysidacea). *In*: von Vaupel Klein J.C., Charmantier-Daures M. & Schram F.R. (eds) *Treatise on Zoology - Anatomy, Taxonomy, Biology. The Crustacea. Revised and Updated, as well as Extended from the Traité de Zoologie* Vol. 4, Part B: 189–396, 404–406. Koninklijke Brill NV, Leiden. https://doi.org/10.1163/9789004264939_006

Wright R.A. 1973. *Occurrence and Distribution of the Mysidacea of the Gulf of St. Lawrence*. Masters thesis. McGill University, Montreal. Available from https://escholarship.mcgill.ca/concern/theses/6d56zz03t [accessed 05 May 2017].

Zimmer C. 1909. VI. Die nordischen Schizopoden. *In*: Brandt K. & Apstein C. (eds), *Nordisches Plankton* 6: 1–178. Lipsius und Tischler, Kiel und Leipzig. https://doi.org/10.5962/bhl.title.10255

Zimmer C. 1914. Die Schizopoden der deutschen Südpolar-Expedition 1901–1903. *In*: Drygalski E. von (ed.) *Deutsche Südpolar-Expedition 1901-1903, XV. Zoologie* 7: 377–445. Georg Reimer, Berlin.

Zimmer C. 1915. Zur Kenntnis der Schizopodenfauna Neapels. *Mitteilungen aus der zoologischen Station zu Neapel* 22: 313–327.

Manuscript received: 12 October 2023
Manuscript accepted: 2 February 2024
Published on: 20 June 2024
Topic editor:Magalie Castelin
Subject editor: Fabio Stoch
Desk editor: Danny Eibye-Jacobsen

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d'histoire naturelle, Paris, France; Meise Botanic Garden, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiverstiy Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Leibniz Institute for the Analysis of Biodiversity Change, Bonn – Hamburg, Germany; National Museum of the Czech Republic, Prague, Czech Republic.