

Additions to the Polar Sea bathyal and abyssal Isopoda (Crustacea, Malacostraca). Part 2. Asellota, Desmosomatidae

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Malyutina, M.V. & Kussakin, O.G. 1996. Additions to the Polar Sea bathyal and abyssal Isopoda (Crustacea, Malacostraca). Part 2. Asellota, Desmosomatidae. *Zoosystematica Rossica*, 4(2), 1995: 239-260.

Ten new species of Desmosomatidae from the Canada Basin (Polar Sea) were collected at the drift station "North Pole 22". Seven of them – *Balbidocolon polare* sp. n., *Eugerdia mandibulata* sp. n., *Eugerdia gurjanovae* sp. n., *Eugerdia dubia* sp. n., *Cryodesma cryoabyssale* sp. n., *Chelator stellae* sp. n., *Oecidiobranthus glacialis* sp. n. – are described. The other three species remain undescribed being poorly preserved.

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Introduction

The present study is the third in a series of publications based on the material of bathyal and abyssal isopods from the Canada Basin of the Polar Sea collected during the Drift-ice Expedition 1976-1977 "North Pole-22" (NP-22) (Kussakin, 1983; Malyutina & Kussakin, 1996). This paper deals with the family Desmosomatidae. Desmosomatidae appear to be a very characteristic group within the deep-sea Isopoda of Arctic and Boreal waters especially. This statement is confirmed by the examined material from the Canada Basin, with 10 among 31 isopod species belonging to the family Desmosomatidae.

Unfortunately, this material is in a very poor condition with all the specimens more or less damaged, with pereopods often missing though they are extremely important in the desmosomatid generic taxonomy. That is why only 7 new species have been described. As to the other 3 species, undoubtedly new, we cannot determine even their generic position.

The type material has been deposited in the Zoological Institute of Russian Academy of Sciences (ZIN), St.Petersburg, Russia. The full list of NP-22 stations where Isopoda specimens had been collected was published earlier (Malyutina & Kussakin, 1996). Desmosomatid species described in the present paper were

collected at the following stations:

- St. 21 – 81° N 128° 30' W, 3350 m;
- St. 34 – 79° 26' N 127° 39' W, 3290 m;
- St. 83 – 74° 52' N 169° 47' W, 230 m;
- St. 98 – 74° 59' N 170° 11' W, 260 m;
- St. 128 – 74° 52' N 172° 14' W, 325-1340 m.

Family **DESMOSOMATIDAE** G.O. Sars, 1899

Subfamily **DESMOSOMATINAE** G.O. Sars, 1899

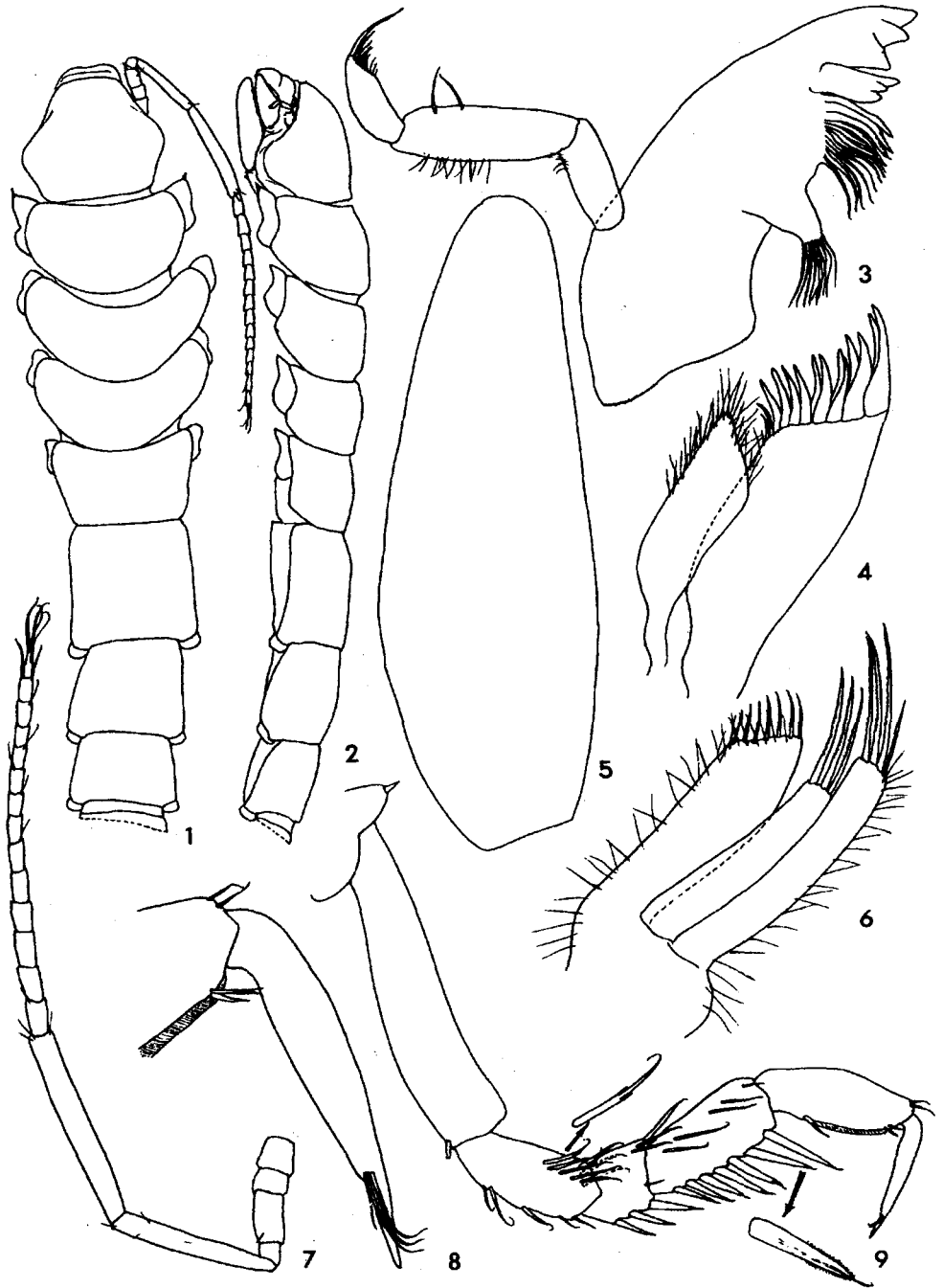
Genus **Balbidocolon** Hessler, 1970

Balbidocolon polare sp. n.

(Figs 1-9)

Holotype. No. 1/75362 1 badly mutilated specimen, with abdominal part missing, 4.12 mm long, St. 21.

Description. Body (Figs 1, 2) slender, cephalothoracal part 3.9 times as long as wide over pereonite 2. Head 1.14 times as broad as long, irregularly hexagonal in shape, front and posterior margins nearly straight; anterolateral corners posterior to basal part of antennae without processes. Pereonite 1 well developed, slightly narrower and 1.2 times longer than pereonite 2. Pereonites 2 and 3 of similar size and shape. Pereonite 5 longest, 1.5 times as long as pereonite 4. Pereonites 6 and 7 decreasing in length, 0.8 and 0.6 of pereonite 5



Figs 1-9. *Balbidocolon polare* sp. n., holotype: 1, dorsal view; 2, lateral view; 3, left mandible; 4, maxilla 1; 5, epipod of maxilliped; 6, maxilla 2; 7, antenna 2; 8, pereopod 1: dactylus and distal part of propodus; 9, pereopod 1.

length respectively. Three posterior pereonites tapering gradually from 5 to 7. Coxae of pereonites 1-4 moderately developed; coxa of pereonite 1 with long triangular pointed anterior process bearing small apical spine (dorsal view); all the other lobes with rounded margins in dorsal view.

Antenna 1 missing. Antenna 2 (Fig. 7) when bent posteriorly, reaching anterior part of pereonite 4, flagellum twice as long as peduncular distal article, 14-jointed.

Mandible (Fig. 3). Incisor process of the left mandible stout, with 3 thick teeth; lacinia mobilis with 3 teeth; spine row with 13 members. Molar process conical, distally obtuse with 10 setae. Palp well developed, 0.7 of mandibular body length; article 1 with small distal setules, article 2 twice as long as article 1, with 2 distomedial setae and many lateral setules; last article nearly as long as first, but slightly narrower, with one large and few small distal setae.

Maxilla 1 (Fig. 4). Inner endite width 0.7 of outer endite width, outer endite with 12 strong spine-like setae.

Maxilla 2 (Fig. 6). Medial endite shortest; innermost endite truncated distally, with 7 slender setae; outer and medial endites with 3 long, spine-like, medially serrated setae.

Maxilliped mutilated. Epipod (Fig. 5) oblong-ovate, with rounded end, 2.9 times as long as wide; lateral margin slightly convex proximally; surface smooth.

Pereopod 1 (Figs 8-9) well developed. Dactylus 0.7 of propodus length. Propodus 2.7 times as long as wide, ventral margin slightly convex, fringed, with 1 small bifid seta medially, and few small simple setae distally. Carpus 0.9 of propodus length, twice as long as wide, with 7-8 stout, unequally bifid ventral setae, gradually shortening from distal to proximal; lateral row with 5 slender whip setae. Merus with 3 stout bifid ventral setae and 3 distodorsal setae. Ischium with 5 ventral small whip setae, 5 lateral longer setae, and 3 distodorsal setae. Basis 4.6 times as long as wide, with one distoventral seta.

The other pereopods missing. Basis 2 length/width ratio 4.4; basis 3-5.8; 4-7.3; 6-7.2; 7-7.7; basis 5 missing.

Remarks. We are rather doubtful about referring this species to the genus *Balbidocolon*; it differs considerably from the only described species of the genus in the weakly developed dorsal setal row on carpus of pereopod 1. The absence of the abdominal part did not allow us

to examine the structure of posterolateral corners of pleotelson and the number of uropod rami. Antenna 2 flagellum of the described species is relatively longer than that of *B. atlanticum* Hessler, 1970 and has a considerably greater number of articles.

Distribution. The Polar Sea: western slope of the Canada Basin.

Habitat. Found at the depth of 3550 m.

Genus *Eugerda* Meinert, 1890

Eugerda mandibulata sp. n.

(Figs 10-17)

Holotype. No. 1/75352, 1 mutilated specimen with damaged pleotelson, length without pleotelson 3.2 mm, St. 128.

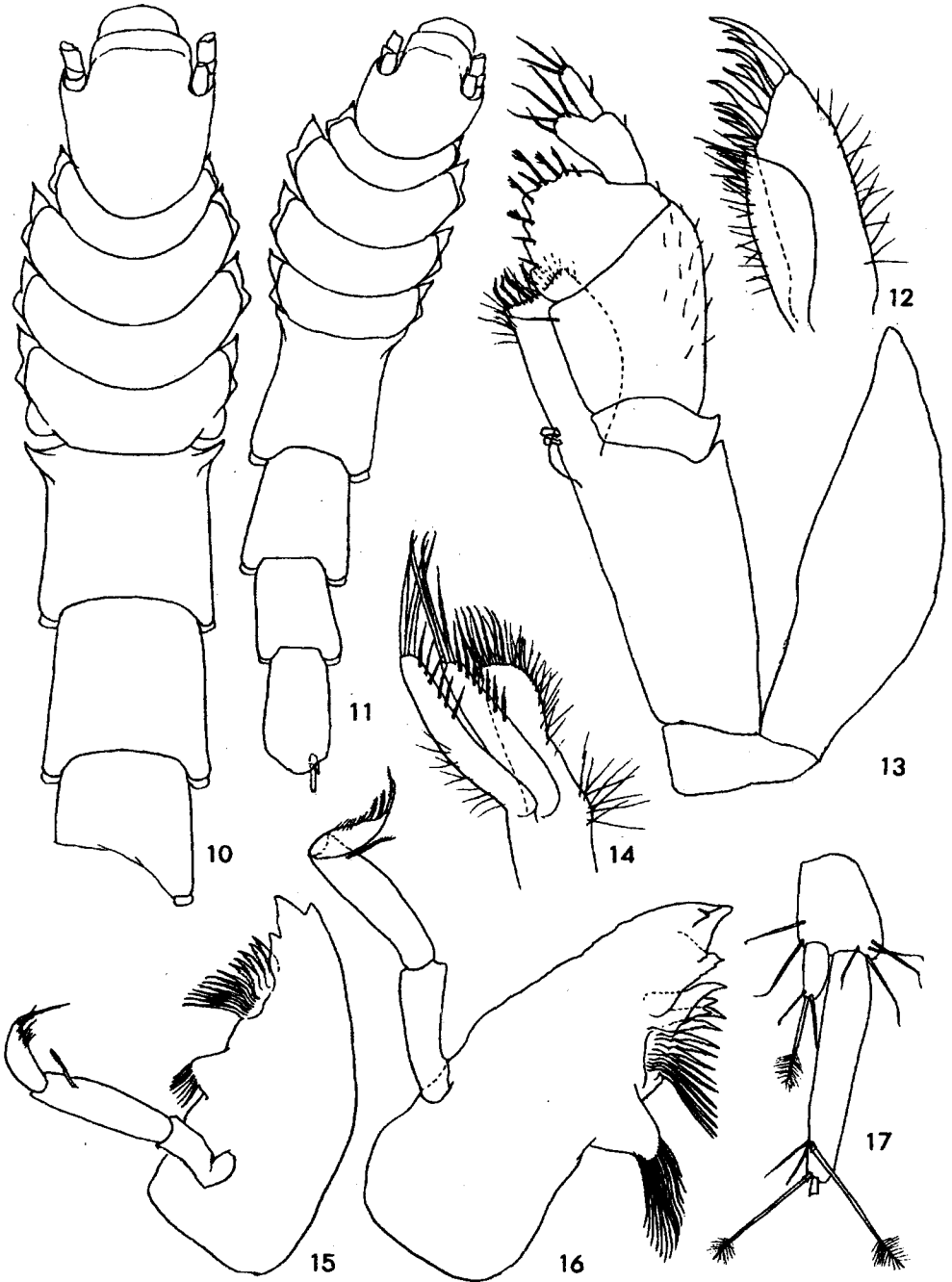
Paratypes. 1 damaged specimen 3.0 mm long, St. 128; 1 badly mutilated specimen 4.0 mm long, St. 83.

Description of holotype. Body (Fig. 10) moderately slender, without pleotelson 3.6 times as long as wide over pereonite 3. Head large, 1.2 times as long as wide, gradually tapering posteriorly, front margin slightly convex, posterior part of head deeply immersed into the pereon, so that its posterior margin is almost level with anterolateral corners of the pereonite 2. Pereonite 1 smallest, 0.21 of head length and almost as wide as head. Pereonite 3 broadest, pereonites gradually decreasing in width from 3 to 7, pereonites 2-4 subequal in length, each 1.6 times as long as pereonite 1. Posterolateral corners of pereonite 4 produced like rounded lobes. Coxae of pereonites 1-4 well developed, anterior lobe somewhat longer than posterior, triangular, pointed, with small spine. Pereonite 5 longest, 2.1 times longer than preceding one, anterolateral corners produced like long incurved acute processes surrounding sideways posterolateral lobes of pereonite 4.

Antennae missing.

Mandible (Figs 15, 16) with 3 acute teeth on incisor process; lacinia mobilis of left mandible with 3 teeth. Left spine row with 12, right with 13 members. Molar process wide, conical, rounded distally, with dense row of long simple setae. Palp 0.8 of mandibular body length, article 2 slightly longer than article 1, with 1 distal seta, last article smallest, with 3 distal setae and setal comb.

Maxilla 1 (Fig. 12). Inner endite width 0.7 of outer endite width, outer endite with 11 strong spine-like smooth setae.



Figs 10-17. *Eugerda mandibulata* sp. n. (10, 12-14, 16, holotype; 11, 15, 17, paratype): 10, 11, dorsal view; 12, maxilla 1; 13, maxilliped; 14, maxilla 2; 15, right mandible; 16, left mandible; 17, uropod.

Maxilla 2 (Fig. 14). Outer endite longest; innermost endite truncated distally, with numerous slender setae and setules; outer and medial endites with 3 long spine-like distal setae; outer endite with 6 simple short medial setae; medial endite with 7 short serrated medial setae.

Maxilliped (Fig. 13). Coxa short, basis with 2 coupling hooks, distal margin with 5 fan setae and many simple setules. Palp inserted after 0.6 of basis length. Palp article 1 shortest, ring-like; article 2 1.3 times broader and 4 times longer than article 1 laterally, with one distomedial seta and few small lateral setules. Article 3 almost triangular, as long as article 2 medially and 0.15 of article 2 laterally, with 9 medial setae. Article 4 narrow, distomedial lobe with 4 long setae. Article 5 elongate, markedly narrower than distomedial lobe of article 4, with 3 distal, 1 lateral setae and medial setules. Epipod narrow-triangular, acuminate, slightly shorter than basis and 3 times as long as wide.

Pereopods missing.

Paratype. Body (Fig. 11) 4.6 times as long as wide, body without pleotelson (to compare with the holotype) about 3.6 times as long as wide. Head 1.1 times as long as wide. Pleotelson relatively narrow, elongate, with lateral margins subparallel, posterolateral corners broadly rounded and posterior margin rounded; pleotelson nearly twice as long as wide.

Uropod (Fig. 17) biramous, 0.05 of body length, sympod widening distally, 1.3 times as long as wide, with 6 distal setae; endopod long, 2.3 of sympod length, with 3 long plumose and 2 simple short distal setae; exopod small, 0.25 of endopod length, with 1 plumose and 2 simple setae distally.

Remarks. Since in all the available specimens pereopods are lost, we referred them to the genus *Eugerda* Meinert, basing upon a set of characters specific to this genus only: weakly developed pereonite 1 much narrower than the pereonite 2, and biramous uropod. In the genus *Desmosoma* G.O. Sars the pereonite 1 is also feebly developed, but the uropod is uniramous. From the majority of *Eugerda* species, the new species differs distinctly in the anterolateral corners of the pereonite 5, which are markedly produced and pointed. The latter character, although modified, is also observed in a mature male of *E. tetarta* Hessler, 1970, but in this species posterolateral corners of pleotelson are nearly straight and coxal plates of pereonites 1-4 are considerably longer. In a male of *E.*

reticulata Gurjanova, 1949, anterolateral corners of the pereonite 5 are also produced as triangular pointed processes, but pleotelson with acute, almost spine-like posterolateral corners, uropod exopod is relatively shorter, and anterior part of the head looks quite different.

Distribution. Central part of the Polar Sea: the outer Chukchi shelf.

Habitat. Found at the depths of 220-340 m.

Eugerda gurjanovae sp. n.
(Figs 18-30)

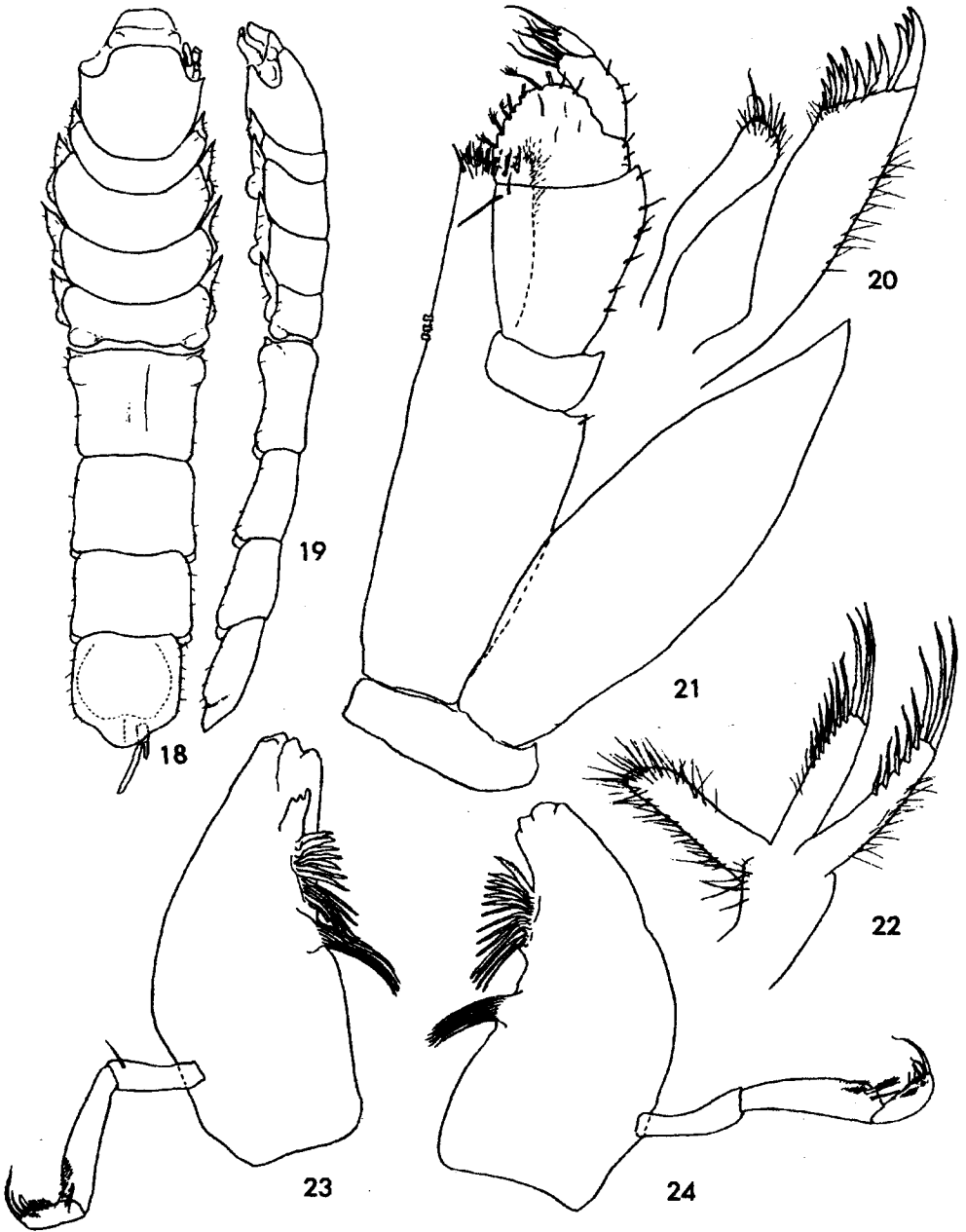
Holotype. No. 1/75351, 1 female 5.35 mm long, St. 83.

Description. Body (Figs 18, 19) 4.5 times as long as wide over pereonite 2. Body margins with sparse setae. Head almost as long as wide, front margin nearly straight, posterior part broadly rounded. Pereonite 1 smallest, 0.25 of the head length and slightly broader than head. Pereonites 2 and 3 of similar size and shape, each almost twice longer than pereonite 1. Pereonite 4 slightly shorter than preceding one, posterolateral corners of pereonite 4 produced like small rounded lobes. Anterior lobe of coxae of pereonites 1-4 markedly longer than posterior lobe, triangularly pointed, with small spine. Pereonite 5 longest, 2.3 times longer than preceding one; anterolateral corners produced as long incurved acute processes surrounding sideways posterolateral lobes of pereonite 4. Pleotelson 1.1 times as long as wide, 0.15 of body length, slightly narrower and 1.3 times longer than pereonite 7. Lateral margins straight, posterior margin between uropods produced as semicircular lobe.

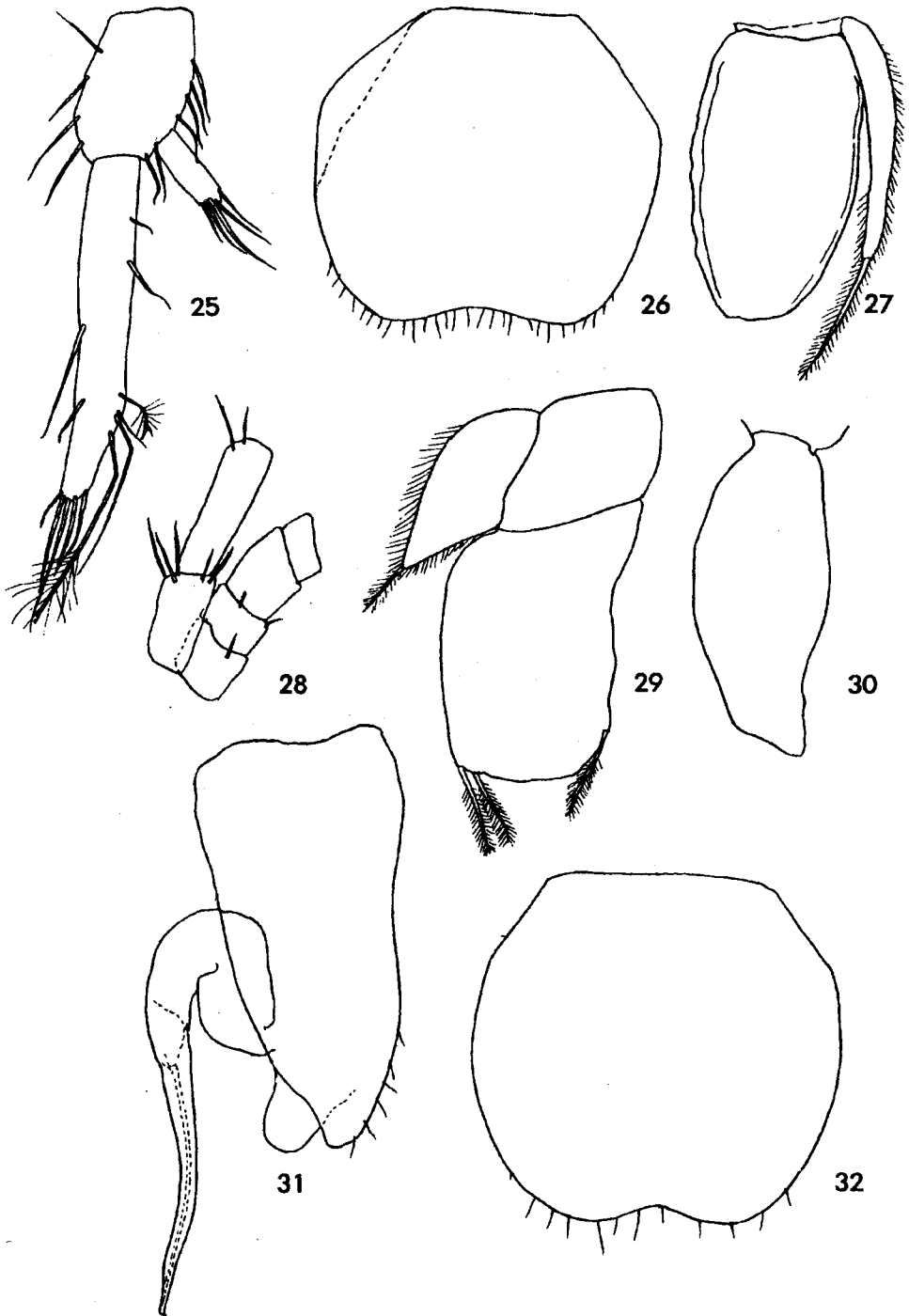
Antennae broken off, basal part left only (Fig. 28). First article of antenna 1 twice as long as broad, with 5 setae distally; second article 3.4 times as long as broad and 1.5 times longer than first article, with 2 setae distally.

Mandible (Figs 23, 24) massive, 2.3 times as long as wide, with 4 short obtuse teeth on incisor process set slightly apart; lacinia mobilis short, with 3 teeth; spine row on left mandible with 13, on right with 14 members; molar process short, with 7-8 long simple setae. Palp 0.8 of mandibular body length; palp article 1 with 1 distal seta, article 2 1.3 times as long as article 1, with 2 distal setae, last article smallest, with 3 distal setae and setal comb.

Maxilla 1 (Fig. 20). Inner endite width 0.55 of outer endite width, outer endite with 11 strong spine-like setae.



Figs 18-24. *Eugerda gurjanovae* sp. n., female, holotype: 18, dorsal view; 19, lateral view; 20, maxilla 1; 21, maxilliped; 22, maxilla 2; 23, left mandible; 24, right mandible.



Figs 25-32. 25-30, *Eugerda gurjanovae* sp. n., female, holotype: 25, uropod; 26, operculum; 27, pleopod 4; 28??? 29, pleopod 3; 30, pleopod 5. 31-32, *Eugerda dubia* sp. n.: 31, pleopod 2 of male, paratype; 32, operculum of female, holotype.

Maxilla 2 (Fig. 22). Outer endite longest; innermost endite with numerous slender setules; outer and medial endites with 3 long spine-like distal setae; outer endite with short serrated medial setae; medial endite with 7 short serrated medial setae.

Maxilliped (Fig. 21). Coxa short, basis with 3 coupling hooks, distal margin with 6 fan setae and numerous simple setules. Palp inserted after 0.6 length of basis. Palp article 1 as long as article 5; article 2 1.4 times broader and more than 3 times longer than article 1, with 2 disto-medial setae and small lateral setae. Article 3 almost triangular, 0.2 of article 2 lateral length and 0.7 of medial length, with 7 medial setae. Article 4 narrow, almost as long as article 3 medially, disto-medial lobe small, with 4 long setae. Article 5 elongate, with 3 distal setae. Epipod narrow-triangular, acuminate, of almost the same length as basis and more than 3 times as long as wide.

Pereopods missing.

Operculum (Fig. 26) 1.1 times as broad as long, posterior margin distinctly concave medially, fringed with setae.

Pleopod 3 (Fig. 29) sympod almost quadrangular, exopod small, slightly longer than sympod, with lateral row of setules and distal plumose seta.

Pleopod 4 (Fig. 27) exopod 0.8 times longer than endopod, slender, with fine setules laterally and long plumose seta distally, exceeding endopod.

Pleopod 5 (Fig. 30) represented by small long oval lobe only.

Uropod (Fig. 25) biramous, 0.1 of body length; sympod 1.5 times as long as wide, with 4 medial and 6 lateral setae; endopod long, 2.3 of sympod length, with 3 plumose and 10 simple setae of varying lengths; exopod small, 0.24 of endopod length, with 5 simple distal setae.

Etymology. The name of the species was given in honour of Prof. Eupraxia Gurjanova, distinguished Russian carcinologist, who contributed much to the study of arctic crustaceans.

Remarks. In the holotype of *E. gurjanovae* sp. n., like in specimens of the previous species, pereopods are missing. The specimen is referred to the genus *Eugerdia* on the basis of two combined characters: weakly developed anterior pereonite and biramous uropod. The new species differs from all the described *Eugerdia* species in the presence of rounded convex areas posterior to the anterolateral corners of pereonite 5.

Distribution. Central part of the Polar Sea: the outer Chukchi shelf.

Habitat. Found at the depth of 230 m.

***Eugerdia dubia* sp. n.**
(Figs 31-38)

Holotype. No. 1/75358, 1 female 2.52 mm long, St. 83.

Paratypes. Male 2.51 mm long and a specimen without posterior part of body, St. 83.

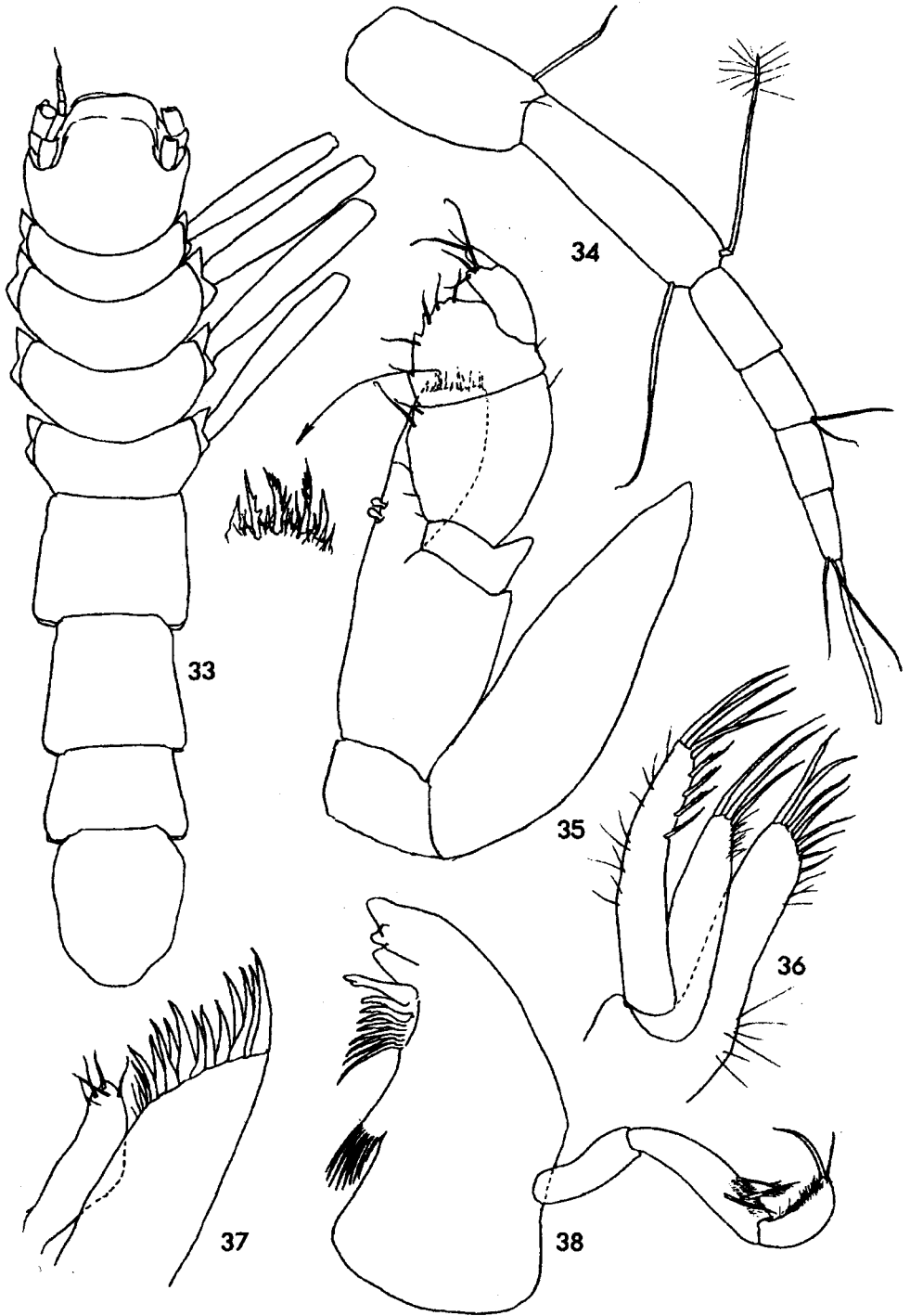
Description of holotype. Body (Fig. 33) 5 times as long as wide over pereonites 2 and 3. Head about 1.2 times as broad as long; front margin nearly straight, lateral margins slightly convex. Pereonite 1 smallest, 0.33 of head length, almost as broad as head. Pereonites 2 and 3 of similar size and shape, each almost twice as long as pereonite 1. Pereonite 4 slightly shorter and narrower than preceding one. Coxae of pereonites 1-4 well developed, anterior lobe triangularly pointed, with small spine. Pereonite 6 longest, 1.12 times as long as pereonite 5 and 2.33 times as long as pereonite 4; pereonite 7 length 0.64 of pereonite 6 length. Three posterior pereonites gradually tapering from 5 to 7. Pleotelson 0.2 of total body length, 1.2 times as long as wide, slightly narrower and almost twice longer than pereonite 7, markedly tapering posteriorly. Posterior margin between uropods produced as semicircular lobe.

Antenna 1 (Fig. 34) length 0.12 of total body length, 6-jointed. Article 1 broadest, with 2 distal simple setae, article 2 1.3 times longer than article 1, with 1 broom seta and 1 simple long seta. Articles from 3 to 6 gradually decreasing in length and width; last article with 2 simple setae and 1 long aestetasc. Antenna 2 broken off, only basal part left.

Mandible (Fig. 38) 2.1 times as long as wide, with 3 obtuse teeth on incisor process; lacinia mobilis as long as incisor process, very slender, with 2 teeth. Spine row on left mandible with 8, on right with 9 members. Molar process short, with row of distal setae. Palp 0.8 of mandibular body length; article 2 1.5 times as long as article 1, with 3 distal setae and setal comb; last article smallest, with 2 distal setae and setal comb.

Maxilla 1 (Fig. 37). Inner endite width half of outer endite width, outer endite with 13 strong spine-like setae.

Maxilla 2 (Fig. 36). Outer endite longest; innermost endite with long stout distal setae; medial endite with 3 long spine-like distal



Figs 33-38. *Eugerda dubia* sp. n., female, holotype: 33, dorsal view; 34, antenna 1; 35, maxilliped; 36, maxilla 2; 37, maxilla 1; 38, left mandible.

setae; outer endite with 4 long spine-like distal setae and 4 serrated medial setae.

Maxilliped (Fig. 35). Basis with 2 coupling hooks, distal margin with 4 fan setae, 2 spines and numerous simple setules. Palp inserted after 0.5 of basis length. Palp article 1 slightly longer than article 5, article 2 1.4 times as broad and almost 3 times as long as article 1, with 5 medial setae and 1 small lateral seta. Article 3 0.2 of article 2 length laterally and almost of the same length medially, medial margin grooved, with 7 setae. Article 4 narrow, elongated, 0.3 of article 3 width, distomedial lobe small, with 4 setae. Article 5 small, with 2 distal setae. Epipod narrow-triangular, acuminate, 1.2 times longer than basis and 3.5 times as long as wide.

Pereopods missing.

Operculum (Fig. 32) almost as long as wide, posterior margin concave medially, fringed with setae.

Uropods missing.

Male pleopod 2 (Fig. 31) twice as long as wide, with 6 small setae distolaterally. Stylet long and slender, extending well beyond tip of article.

Remarks. Since all type specimens have no pereopods and uropods, this species is assigned to the genus *Eugerdia* with great doubt.

Distribution. Central part of the Polar Sea: the outer Chukchi shelf.

Habitat. Found at the depth of 230 m.

Subfamily EUGERDELLATINAE Hessler, 1970

Genus *Cryodesma* Svavarsson, 1987

Cryodesma cryoabyssale sp. n. (Figs 39-49)

Holotype. No. 1/75364, 1 female 2.75 mm long, St. 34.

Description. Body (Figs 39, 40) 3.66 times as long as wide over pereonite 2, anterior part up to pereonite 4 twice as broad as posterior part. Head 1.15 times as broad as long. Pereonites 1 slightly longer and narrower than pereonite 2, pereonite 3 slightly shorter and narrower than pereonite 2; pereonite 4 as long as pereonite 2 and markedly narrower than pereonite 3, 1.9 times as wide as long. Coxae of pereonites 1-4 moderately developed, anterior lobe triangularly pointed, with a small spine. Three posterior pereonites of subequal length, gradually tapering from 5 to 7. Pleotelson 0.2 of total

body length, almost as broad as pereonite 7, 1.6 times as long as wide. Lateral margin nearly straight; posterior margin slightly convex, posterolateral short points distinct.

Antenna 1 missing. Antenna 2 (Fig. 42) 0.7 of total body length, flagellum 3 times as long as peduncular distal article, 12-jointed.

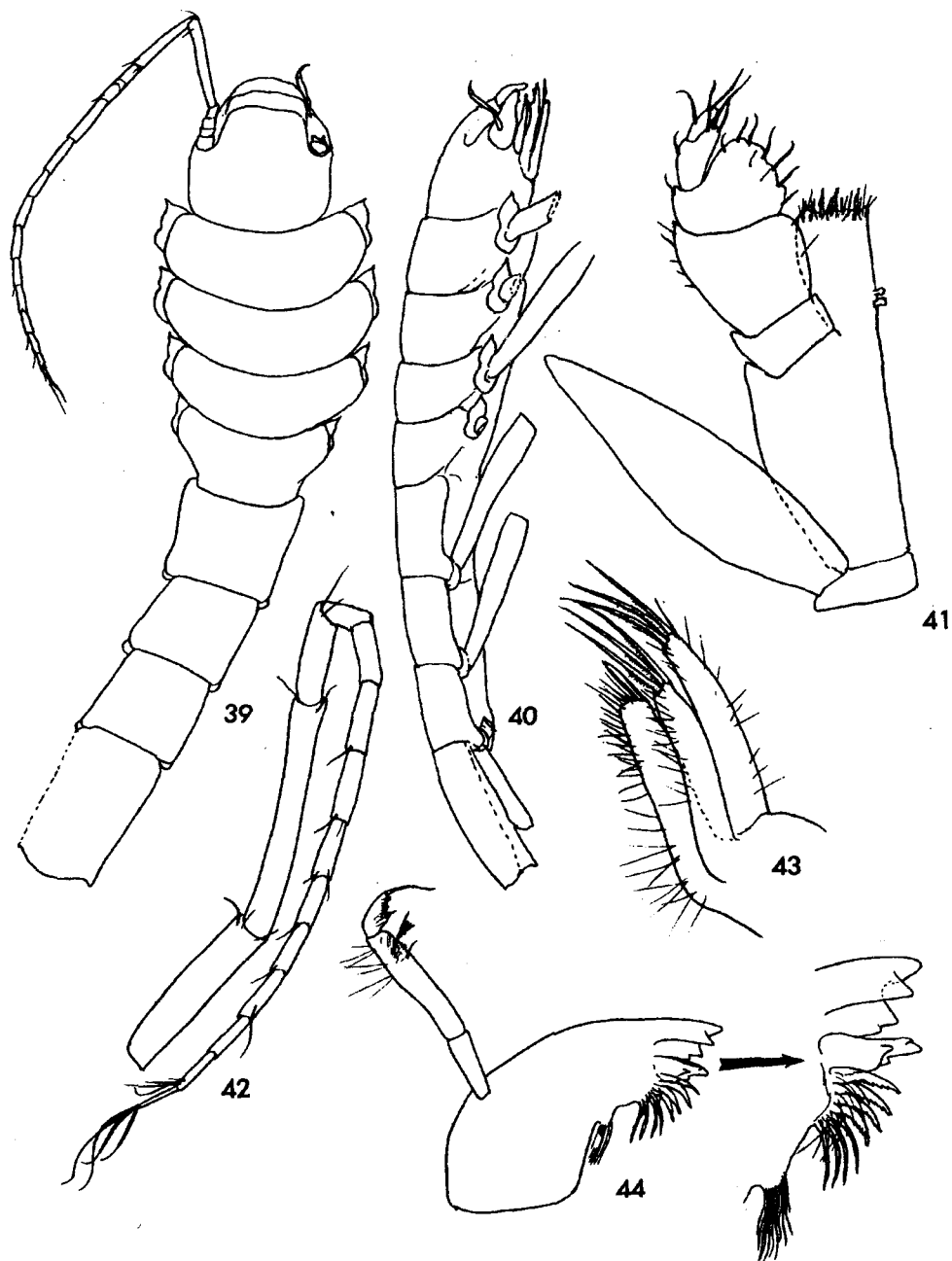
Mandible (Fig. 44) 2.2 times as long as wide, with 4 obtuse teeth on incisor process; lacinia mobilis as long as incisor process, broad, with 4 small teeth. Spine row on left mandible with 8, on right with 9 members. Molar process short, with row of distal setae. Palp 0.8 of mandibular body length, article 2 twice as long as article 1, with 2 setae and setal comb distomedially and long setules laterally, last article smallest, with one distal seta and setal comb.

Maxilla 2 (Fig. 43). Outer endite longest; innermost endite with long thin distal setae; medial and outer endites with 3 long, spine-like serrated distal setae.

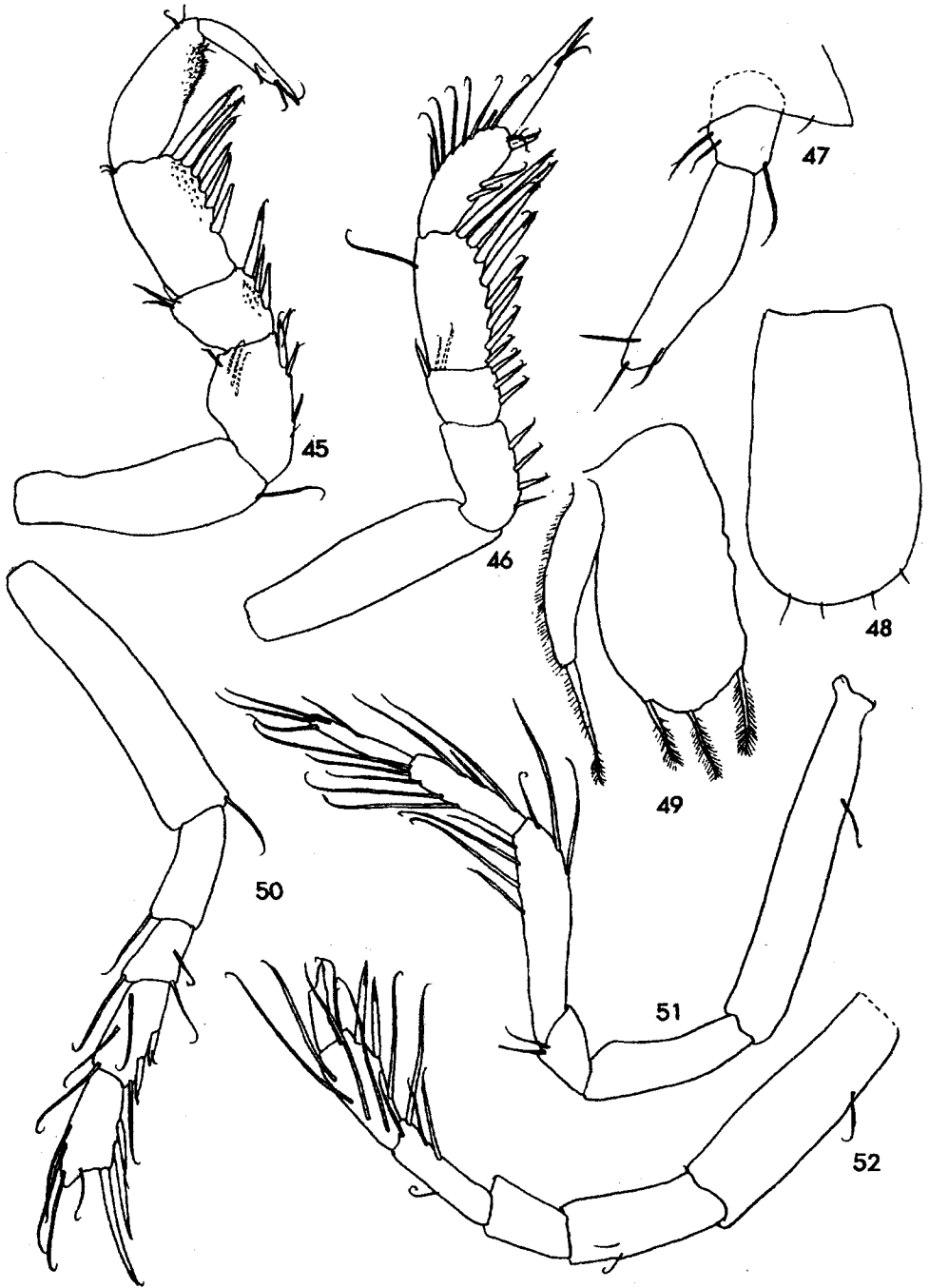
Maxilliped (Fig. 41). Basis with 2 coupling hooks, distal margin straight, with 4 fan setae and numerous simple setules. Palp inserted after 0.7 of basis length. Palp article 1 subequal in length to article 5; article 2 1.3 times broader and more than twice longer than article 1, with few medial and lateral small setae. Article 3 0.33 of article 2 lateral length and almost equal in medial length, medial margin grooved, with 7 setae. Article 4 narrow, distomedial lobe with 3 long setae. Article 5 twice longer than distomedial lobe of article 4, with 2 distal setae. Epipod narrow-triangular, acuminate, almost of the same length as basis and 3.8 times as long as wide.

Pereopod 1 (Fig. 45) stout. Dactylus 0.6 of propodus length. Propodus 2.8 times as long as wide, with 2 small distodorsal setae, ventral margin fringed, with 1 small bifid seta distally. Carpus 0.8 of propodus length, 1.7 times as long as wide, with 6 spiniform, unequally bifid ventral setae, gradually shortening from distal to proximal. Merus with 3 spiniform, unequally bifid ventral setae and 3 distodorsal whip setae. Merus, carpus and propodus with dense thin granulation on ventral surface. Ischium with 4 ventral, unequally bifid setae and 4 lateral whip setae. Basis 4.2 times as long as wide, with one distoventral whip seta.

Pereopod 2 (Fig. 46). Propodus smaller than in pereopod 1, 2.5 times as long as wide, ventral margin with 1 stout unequally bifid seta distally and 2 more slender setae medially, dorsal margin with 8 long whip setae. Carpus 1.1 of



Figs 39-44. *Cryodesma cryoabyssale* sp. n., female, holotype: 39, dorsal view; 40, lateral view; 41, maxilliped; 42, antenna 2; 43, maxilla 2; 44, left mandible.



Figs 45-52. 45-49. *Cryodesma cryoabyssale* sp. n., female, holotype: 45, pereopod 1; 46, pereopod 2; 47, uropod; 48, operculum; 49, pleopod 3. 50-52. *Chelator stellae* sp. n., holotype: 50, pereopod 2; 51, pereopod 7; 52, pereopod 3.

propodus length, 2.6 times as long as wide, with 8 stout, unequally bifid ventral setae, gradually shortening from distal to proximal and long whip seta dorsally. Merus with 3 stout bifid ventral setae and 3 distodorsal thin setae. Ischium with 4 ventral bifid setae. Basis 4.7 times as long as wide. The other pereopods in this specimen broken off.

Operculum (Fig. 48) almost rectangular, 2.4 times as long as wide, posterior margin widely rounded, with few setae.

Pleopod 3 (Fig. 49). Endopod with 3 distal plumose setae, exopod slender, 0.72 of endopod length, with lateral row of fine setules and long plumose distal seta exceeding endopod.

Uropod (Fig. 47) uniramous, stylet-like, with short sympod 1.3 times as long as wide, with 3 setae distally, endopod 2.3 times longer than sympod and 4 times as long as wide, with 3 setae distally.

Remarks. This species may be easily distinguished from the only other known species of this genus, *C. agnari* Svararsson, 1987, by the less numerous spine-like setae on the carpus of pereopod 1 (6 setae in *C. cryoabyssale* and 8 setae in *C. agnari*), shorter pereonite 4 (its width is about 1.3 of its medial length in *C. cryoabyssale* and equal to medial length in *C. agnari*). Besides, in *C. cryoabyssale* female the head is more elongate and tip of the pleotelson considerably shorter (posterolateral spines of pleotelson are 0.14 of pleotelson length from apex in *C. cryoabyssale* and on 0.18 in *C. agnari*).

Distribution. Central part of the Polar Sea: western slope of the Canada Basin.

Habitat. Found at the depth of 3290 m.

Genus *Chelator* Hessler, 1970

Chelator stellae sp. n. (Figs 50-60)

Holotype. No. 1/75360, 1 mutilated specimen 1.37 mm long, St. 128.

Description. Body (Fig. 53) 4 times as long as wide over pereonite 3. Head short, almost 1.5 times as broad as long; front margin nearly straight. Pereonites widening from 1st to 3rd, then tapering posteriorly. Pereonite 1 shortest, following pereonites gradually elongated from 1st to 4th, pereonite 4 markedly narrower than preceding. Pereonite 5 largest, tapering posteriorly. Two posterior pereonites of similar

length and width. Coxae of pereonites 1-4 with not very distinct subdivision into anterior and posterior lobes; anterior lobe triangularly pointed, with small spine. Pleotelson 0.2 of total body length, slightly narrower than pereonite 7, 1.3 times as long as wide, lateral margin slightly concave, posterior margin broadly rounded.

Antenna 1 (Fig. 55) 0.06 of total body length, 5-jointed in the examined specimen. Article 1 broadest, with distal simple seta, article 2 1.1 times as long as article 1, with 1 broom seta and 2 simple setae. Articles 3 and 4 of similar length and width; article 4 with simple seta and 1 aestetasc.

Antenna 2 broken off, basal part only left.

Mandible (Fig. 58) 2.5 times as long as wide, with 3 acute teeth on incisor process; lacinia mobilis as long as incisor process, broad distally, with 4 distinct teeth. Spine row of left mandible with 2 conical spines with broad base. Molar process narrow and long, with row of distal setae.

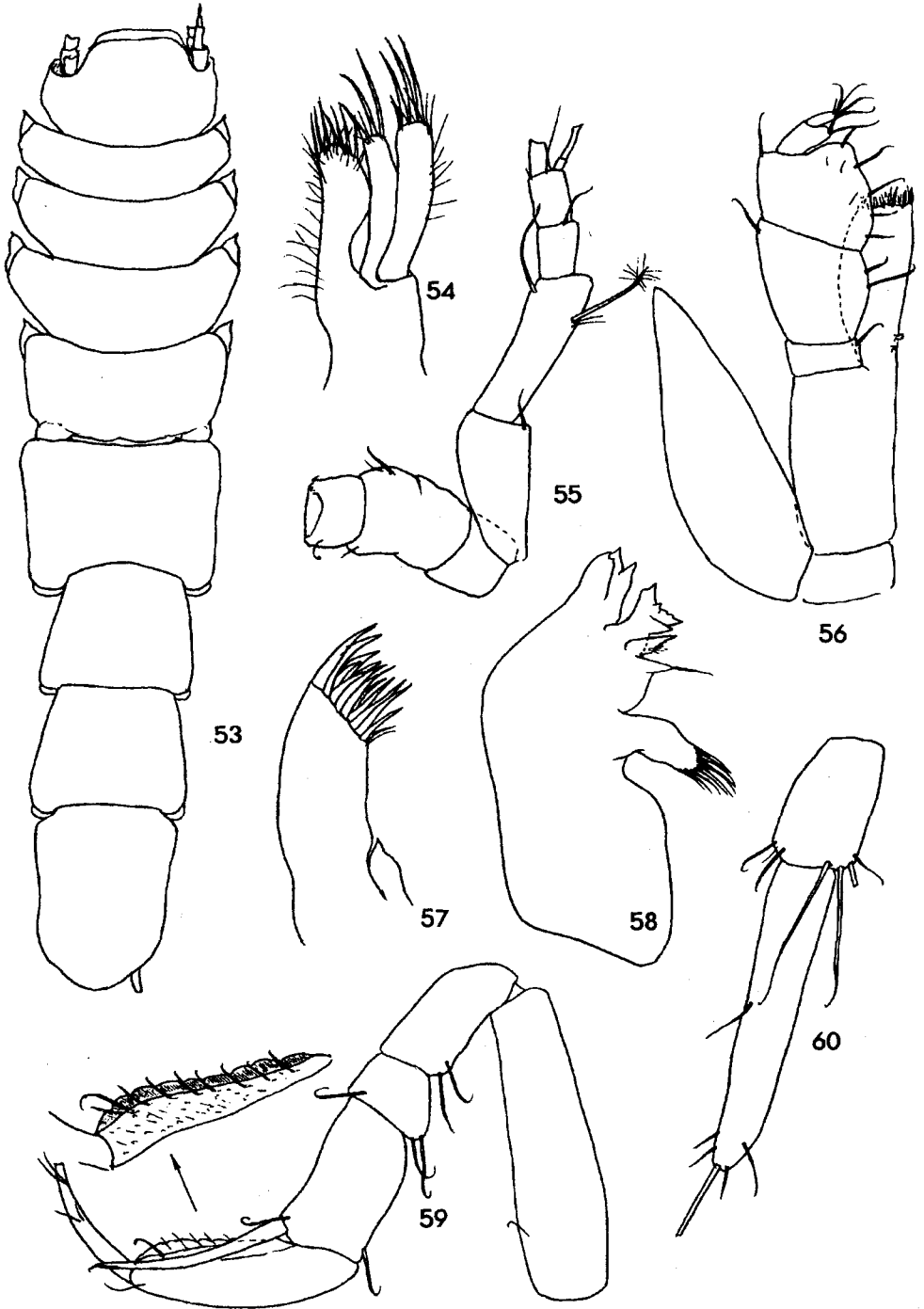
Maxilla 1 (Fig. 57). Outer endite with 13 strong spine-like setae.

Maxilla 2 (Fig. 54). Innermost endite with numerous long, thin distal setae; medial and outer endites with 3 long, spine-like distal setae.

Maxilliped (Fig. 56). Basis with 2 coupling hooks, distal margin straight, with 6 fan setae and many simple setules. Palp inserted after half the length of basis. Palp article 1 ring-like, subequal to article 5 in length; article 2 1.4 times broader and more than 3 times longer than article 1, with 2 medial and 1 lateral setae. Article 3 slightly longer medially and almost twice shorter laterally than article 2, with 5 medial and 1 lateral setae. Article 4 narrow, with 2 long setae distomedially. Article 5 very small, with 3 distal setae. Epipod narrow-triangular, acuminating, almost as long as basis and 3 times as long as wide.

Pereopod 1 (Fig. 59) stout. Dactylus 0.6 of propodus length. Propodus 3.6 times as long as wide, ventral margin fringed, with small setae and with dense thin granulation. Carpus 0.7 of propodus length, 1.7 times as long as wide, with 1 stout, unequally bifid distoventral seta markedly longer than propodus, thin whip seta nearby and 1 distodorsal whip seta. Merus with 1 distoventral and 2 distodorsal whip setae. Ischium with 2 distodorsal whip setae. Basis 2.6 times as long as wide, with 1 small seta dorsally.

Pereopod 2 (Fig. 50) more slender than pereopod 1, dactylus broken off. Propodus smaller



Figs 53-60. *Chelator stellae* sp. n., holotype: 53, dorsal view; 54, maxilla 2; 55, basis of antennae; 56, maxilliped; 57, maxilla 1; 58, mandible; 59, pereopod 1; 60, uropod.

than in pereopod 1, 2.4 times as long as wide, ventral margin with 3 stout, unequally bifid setae gradually shortening from distal to proximal, dorsal margin with 3 long whip setae. Carpus subequal in length to propodus, 2.5 times as long as wide, with 2 stout, unequally bifid and 1 whip ventral setae, and 3 long whip setae dorsally. Merus with 2 ventral and 1 distodorsal whip setae. Ischium with 1 distodorsal whip seta. Basis 4.7 times as long as wide, with 1 distoventral whip seta.

Pereopod 3 (Fig. 52) similar to pereopod 2. Propodus with 2 stout, unequally bifid and 1 whip ventral setae, carpus more slender than in pereopod 2, with 4 long whip setae ventrally and 1 small seta dorsally. Pereopod 7 (Fig. 51) dactylus with 3 long whip setae distally and 1 seta dorsally; propodus slender, slightly longer than dactylus, with 5 ventral and 3 dorsal whip setae; carpus 1.8 times longer than propodus, with 4 ventral and 3 dorsal whip setae; merus with 2 ventral setae; basis 6.3 times as long as wide, with 1 whip ventral seta.

Uropod (Fig. 60) uniramous, stylet-like; sympod 1.6 times as long as wide, with 7 setae distally; endopod 2.5 times longer than sympod and 5.3 times as long as wide, with 1 large and 4 small setae distally.

Remarks. This species may be easily distinguished from the type species *Ch. insignis* (Hansen, 1916) and *Ch. vulgaris* Hessler, 1970 from the North Atlantic by the shorter head not deeply invaginated in the first pereonite and by subparallel lateral sides of the pleotelson. *Ch. stellae* sp. n. may be distinguished from another north-atlantic species, *Ch. verecundus* Hessler, 1970, by the much longer pereonite 7, more slender basis of the maxilliped and more robust, not tapering distally mandibular molar process.

Etymology. The species is named in honour of the noted carcinologist Dr. Stella Vassilenko, Zoological Institute, St. Petersburg.

Distribution. Central part of the Polar Sea: the outer Chukchi shelf.

Habitat. Found at the depth of 230 m.

Genus *Oecidiobranthus* Hessler, 1970

Oecidiobranthus glacialis sp. n.

(Figs 61-67)

Holotype. No. 1/75361, 1 female 1.8 mm long, St. 98.

Description. Body (Figs 61, 62) 5.1 times as long as wide over pereonite 4. Head relatively

narrow and long, 1.1 times as long as wide, frontal margin slightly concave. Pereonites 1, 2 and 4 subequal medially, pereonite 3 1.2 times as long as pereonite 2. Pereonites slightly widening from 1st to 4th. Pereonites 1-4 combined length 0.9 of that of pereonites 5-7. Pereonite 5 longest, rectangular, lateral length 0.9 of posterior width. Pereonites 6 and 7 widening towards posterior end, 7th shorter than 6th. Pleotelson ovate-triangular, 0.21 of total body length, 1.23 times as long as wide. Lateral margins of pleotelson slightly convex, posterior margin acutely rounded.

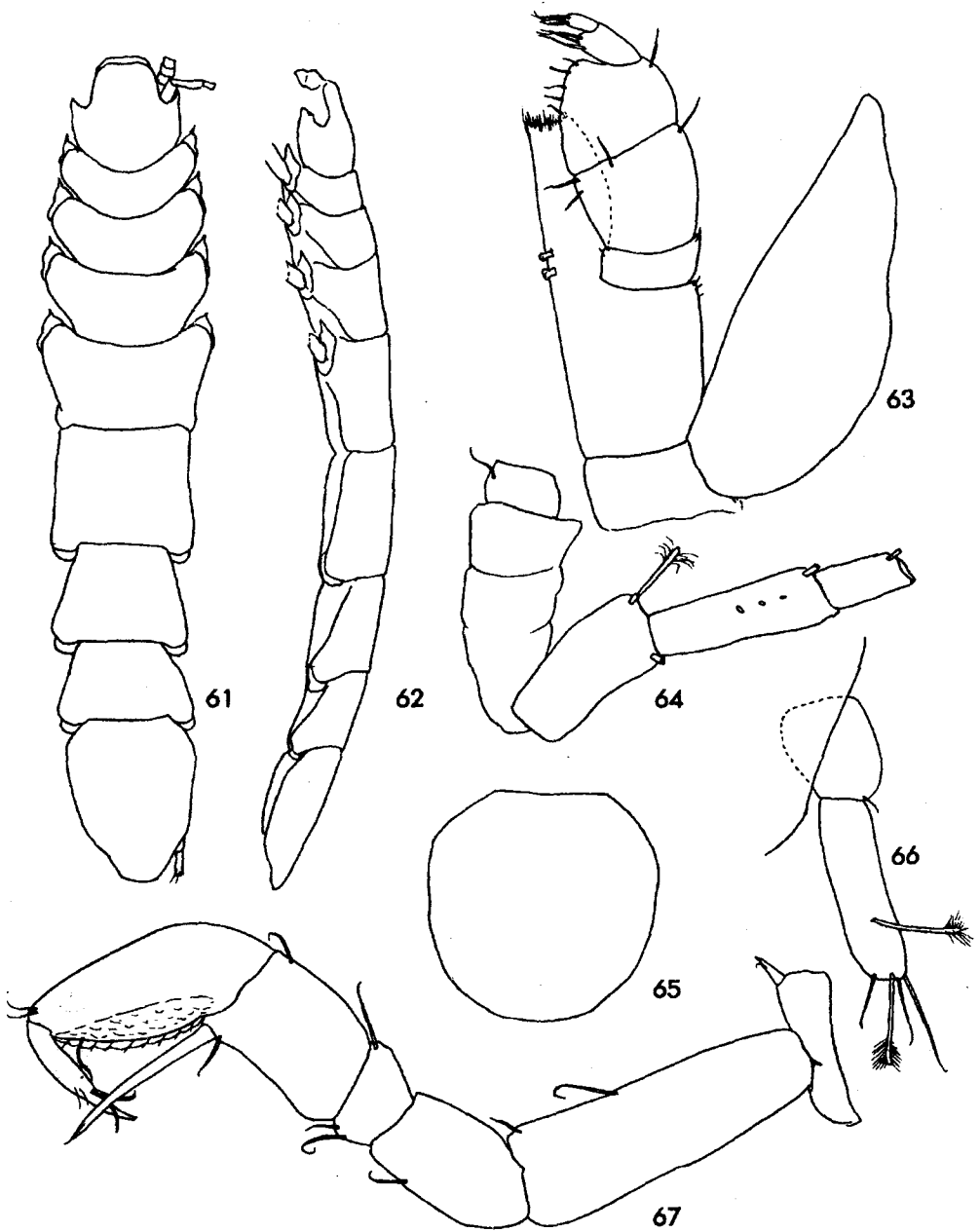
Antennae (Fig. 64). Distal parts of both antennae broken off. Antenna 1 first article 1.2 times as long as wide, with 2 plumose setae distally. Article 2 3.8 times as long as wide and 1.1 times longer than article 1, with 1 plumose seta. Article 3 0.4 of article 2 length.

Pereopod 1 (Fig. 67). Dactylus 0.45 of propodus length, with 2 long setae at base of claw. Propodus 2.4 times as long as wide, with two distodorsal small setae, ventral margin fringed, with small setae and with dense thin granulation. Carpus 1.3 times as long as wide, with 1 distodorsal and 1 distoventral simple setae and spiniform, unequally bifid distoventral seta 1.25 times as long as propodus ventrally and 1.1 times as long as carpus ventrally. Merus 0.7 times as long as wide, with 1 distodorsal and 2 ventral setae. Ischium 1.7 times as long as wide, with 1 ventral simple seta. Basis 2.8 times as long as wide, with 2 dorsal setae.

Pereopod 2 (Fig. 68). Dactylus with 3 setae at base of long claw, dactylus length 0.72 of propodus length. Propodus 3.2 times as long as wide, with 3 distoventral and 2 distodorsal whip setae. Carpus 2.2 times as long as wide, with 5 spiniform, unequally bifid ventral setae shortening from distal to proximal and a row of 9 dorsal setae. Merus 1.3 times as long as wide, with 1 distodorsal and 1 distoventral whip setae. Ischium with 2 ventral and 1 distodorsal setae. Basis 3.5 times as long as wide, with 2 small distoventral setae.

Pereopod 3 (Fig. 69) without dactylus and propodus. Carpus with 4 distal simple setae; merus almost equal to carpus in length, with 1 distodorsal and 1 distoventral whip setae; ischium with 1 dorsal and 2 ventral setae; basis with 1 dorsal and 2 ventral whip setae.

Pereopod 4 (Fig. 70) smallest; dactylus with 2 long distal setae and few ventral setules; propodus 1.5 times longer than dactylus, narrow, 5 times as long as wide, with 5 ventral and



Figs 61-67. *Oecidiobranthus glacialis* sp. n., female, holotype: 61, dorsal view; 62, lateral view; 63, maxilliped; 64, basis of antennae; 65, operculum; 66, uropod; 67, pereopod 1.



Figs 68-73. *Oecidibranchus glacialis* sp. n., female, holotype: 68, pereopod 2; 69, pereopod 3; 70, pereopod 4 with oostegit; 71, pereopod 6; 72, pereopod 5; 73, pereopod 7.

5 dorsal long whip setae; carpus almost of same length as propodus, with 6 ventral and 4 dorsal whip setae; merus with 3 distoventral and 1 distodorsal whip setae; ischium with 1 distal seta; basis 5 times as long as wide, with 2 ventral setae.

Pereopod 5 (Fig. 72). Dactylus with 3 long distal setae and few small setules laterally; propodus 2.6 times as long as wide, with 6 ventral and 4 dorsal whip setae; carpus 1.4 times as long as propodus, with 5 ventral and 7 dorsal setae; merus with 1 simple ventral seta; ischium with 1 dorsal whip seta; basis almost as long as ischium, without setae.

Pereopod 6 (Fig. 71). Dactylus with 4 setae distally; propodus with 5 ventral and 2 dorsal setae; carpus with 6 ventral and 4 distodorsal setae.

Pereopod 7 (Fig. 73). Uropod (Fig. 66) 0.25 of pleotelson length; sympod 1.3 times as long as wide; endopod 1.7 times longer than sympod and 3.6 times as long as wide, with 2 plumose and 3 simple setae distally.

Remarks. The new species may be easily distinguished from *O. plebejus* (Hansen, 1916) and *O. polaris* (Gurjanova, 1946) by the significantly longer pleotelson. In this respect, the species is more like *O. nanseni* Just, 1980, but differs from the latter, and from *O. plebejus* as well, in the longer and narrower head and shorter and broader pereonite 4, which in *O. nanseni* and *O. plebejus* is significantly narrower than pereonite 3 and subequal in width to pereonite 5, while in *O. glacialis* sp. n. it is of the same width as pereonite 3 and markedly wider than pereonite 5. Besides, the described species differs from *O. polaris* in the thinner carpus of pereopod 5 and relatively longer pereonite 5.

Distribution. Central part of the Polar Basin: the outer Chukchi shelf.

Habitat. Found at the depth of 260 m.

“*Desmosoma*” sp.
(Figs 74–83)

Material. 1 mutilated specimen, St. 128.

Description. Head (Fig. 74) 1.2 times as long as wide, pereonite 1 rather well developed, but slightly shorter than pereonite 2; pereonites 2, 3 and 4 almost equal in length, pereonite 3 broadest, pereonites 5 and 6 longest, of almost equal length, pereonite 7 and pleotelson absent.

Antenna 1 (Fig. 75). Article 2 1.5 times as

long as article 1, with 1 distal broom seta. Articles 3–5 subequal in length, article 4 with a simple seta, article 6 smallest, with 2 simple setae and 1 aestetasc.

Antenna 2 (Fig. 76). Peduncular article 5 1.2 times longer than article 4, with long distal broom seta, flagellum 1.6 times longer than peduncular distal article, 12-jointed.

Mandible (Figs 79, 80) twice as long as wide, with 4 teeth on narrow incisor process; lacinia mobilis shorter than incisor process, with 3 distinct teeth. Spine row on left mandible with 4, on right with 5 spines. Molar process short, with row of distal setae. Palp 0.9 of manibular body length, article 2 1.6 times longer than article 1, terminal article smallest, with one distal seta and setal comb.

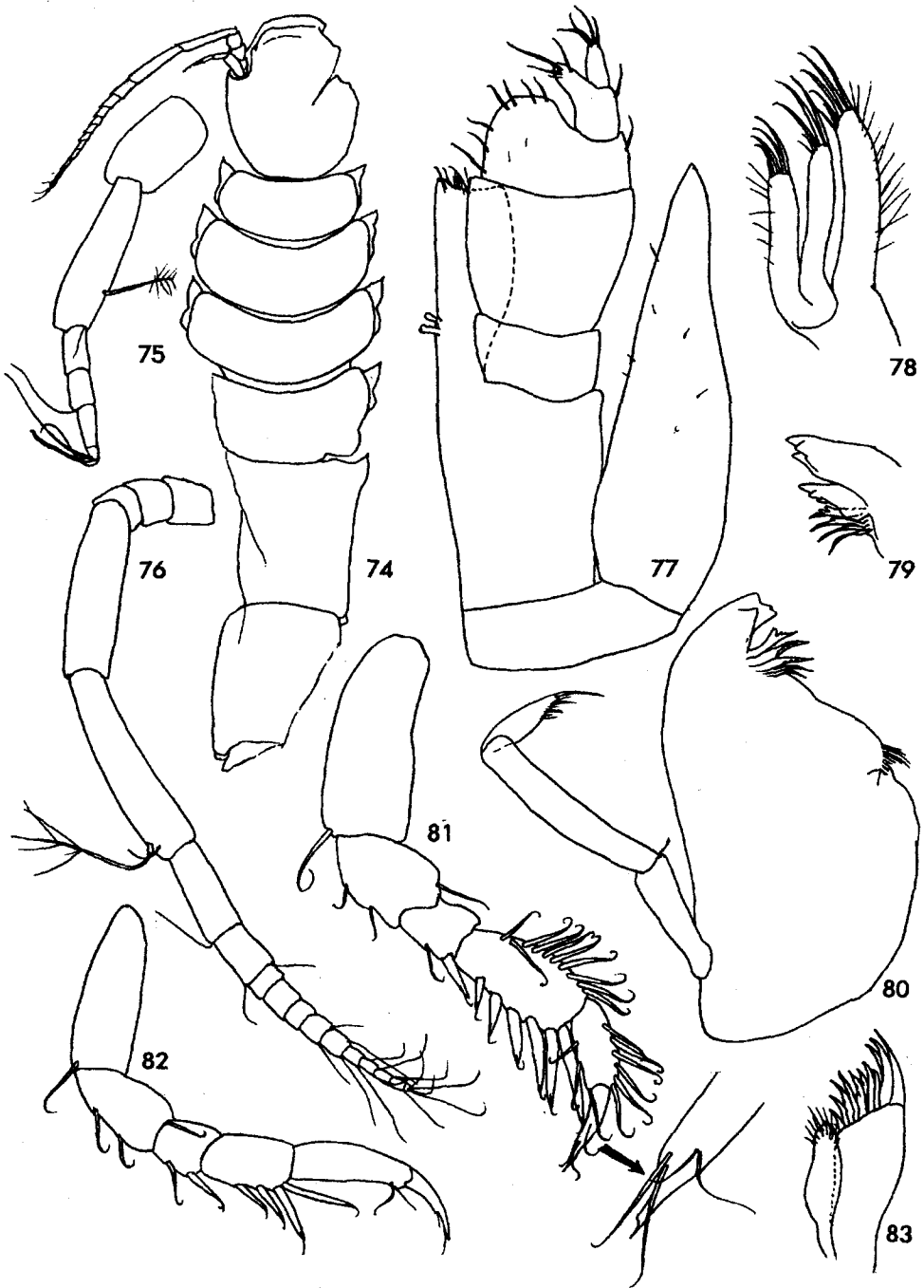
Maxilla 1 (Fig. 83). Inner endite half as wide as outer endite, outer endite with 11 strong spine-like setae.

Maxilla 2 (Fig. 78). Innermost endite with long, thin distal setae; medial and outer endites with 3 long, spine-like distal setae.

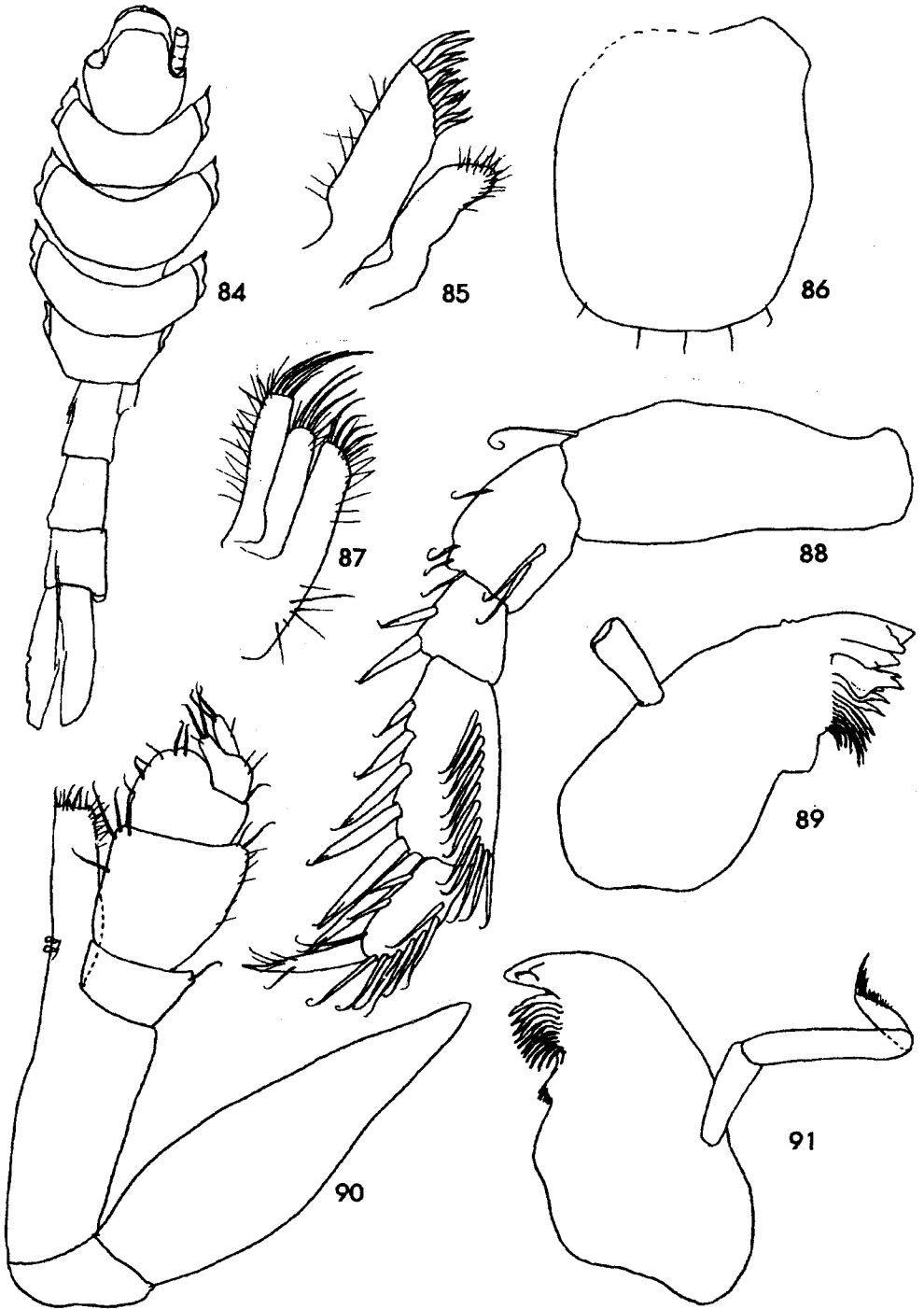
Maxilliped (Fig. 77). Basis with 2 coupling hooks, distal margin with numerous simple setae. Palp inserted after 0.5 of basis length. Palp article 1 ring-like, article 2 1.4 times broader and 2.2 times longer than article 1, article 3 0.6 of medial length and 0.4 of lateral length of article 2, with 7 medial and 1 lateral setae. Article 4 narrow, with 3 long setae distomedially. Article 5 very small, with 4 distal setae. Epipod narrow-triangular, acuminate, almost as long as basis, 3.4 times as long as wide.

Pereopod 1 (Fig. 82). Dactylus 0.6 of propodus length, with 2 long setae at base of claw. Propodus 3.1 times as long as wide, with two distal small setae. Carpus 1.6 times as long as wide, 0.7 of propodus length, with 4 spiniform ventral setae. Merus with 1 spiniform and 1 whip ventral setae. Ischium 1.7 as long as wide, with 2 ventral and 1 distolateral whip setae. Basis with 1 ventral seta, 2.6 times as long as wide.

Pereopod 2 (Fig. 81). Dactylus with 2 long setae at base of terminal claw, 0.9 of propodus length, propodus with 3 ventral and 6 dorsal whip setae, carpus 1.5 times longer than propodus, with 6 spiniform ventral setae, increasing in length distally and with row of 10 dorsal whip setae. Merus with 1 spiniform and 1 whip ventral setae; ischium with 2 ventral and 1 distodorsal whip setae. Basis 2.3 times longer than ischium, with 1 distoventral whip seta.



Figs 74-83. "*Desmosoma*" sp.: 74, dorsal view; 75, antenna 1; 76, antenna 2; 77, maxilliped; 78, maxilla 2; 79, distal part of left mandible; 80, right mandible; 81, pereopod 2; 82, pereopod 1; 83, maxilla 1.



Figs 84-91. *Desmosomatidae* sp. 1: 84, dorsal view; 85, maxilla 1; 86, operculum; 87, maxilla 2; 88, pereopod 2; 89, left mandible; 90, maxilliped; 91, right mandible.

Distribution. Central part of the Polar Sea: the outer Chukchi shelf.

Habitat. Found at the depth of 325-340 m.

Desmosomatidae sp. 1

(Figs 84-91)

Material. 1 badly mutilated female 1.9 mm long, St. 128.

Description. Body (Fig. 84) slender, 4.2 times as long as broad. Head a bit longer than wide, frontal margin straight. Pereonites 1, 3 and 4 almost equal in length, pereonite 2 broadest, 1.4 times as long as pereonite 1, pereonites 5-7 decreasing in length.

Mandible (Figs 89, 91) 2.1 times as long as wide, with 3 teeth on incisor process; lacinia mobilis almost as long as incisor process, with 3 distinct pointed teeth; spine row on left mandible with 10, on right with 11 spines; molar process short, with row of small distal setae. Palp 0.8 of mandibular body length, article 2 1.7 times longer than article 1, terminal article smallest, with one distal seta and setal comb.

Maxilla 1 (Fig. 85). Inner endite width 0.6 of outer endite width, outer endite with 12 strong spine-like setae.

Maxilla 2 (Fig. 87). Innermost endite with thin distal setae; medial and outer endites with 3 long spine-like distal setae; outer endite longest.

Maxilliped (Fig. 90). Basis with 2 coupling hooks, distal margin narrow, with many simple setae. Palp inserted after 0.6 of basis length. Palp article 1 ring-like, article 2 1.3 times broader and 2.3 times longer than article 1, article 3 0.6 of medial and 0.3 of lateral length of article 2, with 4 medial and several thin lateral setae. Article 4 distomedial lobe as narrow as article 5, with 2 long setae. Article 5 with 2 distal setae. Epipod narrow-triangular, acuminate, slightly shorter than basis and 3.3 times as long as wide.

Pereopod 2 (Fig. 88). Dactylus 0.6 as long as propodus, with 3 long setae at base of claw. Propodus 2.2 times as long as wide, with 3 ventral and 7 dorsal whip setae, carpus twice as long as wide, 0.7 of propodus length, with 5 spiniform ventral setae and dorsal row of 12 whip setae. Merus with 2 spiniform ventral setae. Ischium 1.4 times as long as wide, with 4 thin ventral and 2 dorsal whip setae. Basis 2.4 times as long as wide, with 1 long distoventral whip seta.

Operculum (Fig. 86) 1.2 times as long as wide,

nearly rectangular, with 5 or 6 thin setae on broad rounded posterior margin.

Distribution. Central part of the Polar Basin: the outer Chukchi shelf.

Habitat. Found at the depth of 325-340 m.

Desmosomatidae sp. 2

(Figs 92-96)

Material. 1 badly mutilated specimen, St. 128.

Description. Body (Fig. 92) slender, 4.6 times as long as wide over pereonite 2. Head slightly longer than broad, anterior margin nearly straight. Pereonite 1 markedly narrower and almost of same length as pereonite 2. Pereonites 3 and 4 subequal in length; pereonite 5 longest, pereonite 6 slightly shorter and pereonite 7 almost twice shorter than pereonite 5. Pereonites tapering gradually from 2 to 7. Pleotelson rectangular, twice as long as wide.

Antenna 1 (Fig. 93) 0.08 of body length, 7-jointed. Article 1 1.8 times as long as wide; article 2 1.6 times longer than article 1 and 4.6 times as long as wide, with 2 setae distally. Antenna 2 broken off.

Mandible (Figs 95, 96) twice as long as wide; incisor process on the left mandible with 4, on the right with 3 teeth; lacinia mobilis slightly shorter than incisor process, with 3 teeth; left spine row with 8, right with 9 members; molar process short, conical, rounded distally, with dense row of simple setae.

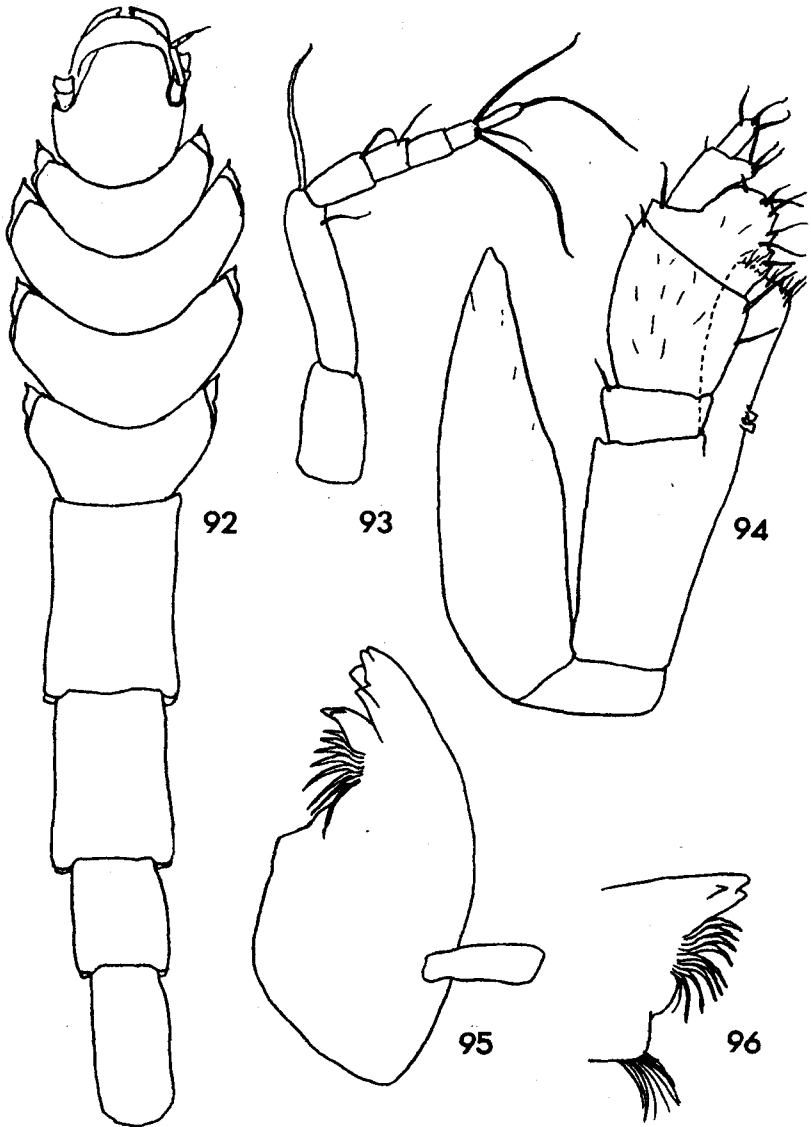
Maxilliped (Fig. 94). Coxa short, basis with 2 coupling hooks, distal margin with numerous simple setules. Palp inserted after 0.6 of basis length; article 1 ring-like, with 1 distolateral seta; article 2 1.3 times broader and 3 times longer laterally than article 1, with 2 small distolateral and 2 medial setae, surface with numerous setules, article 3 triangular, very short laterally and of same length as article 2 medially, with 1 distolateral seta and 7 setae on grooved medial margin; short distomedial lobe of article 4 with 3 setae; article 5 with 5 distal setae. Maxillae, pereopods, pleopods and uropods broken off in this specimen.

Distribution. Central part of the Polar Basin: the outer Chukchi shelf.

Habitat. Found at the depth of 325-340 m.

Acknowledgements

This work was supported by grant NZ4300 shared by the International Science Foundation and Government of Russian Federation and by Russian State scientific-technical Program "Arctic".



Figs 92-96. Desmosomatidae sp. 2: 92, dorsal view; 93, antenna 1; 94, maxilliped; 95, left mandible; 96, right mandible.

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Received 20 December 1995