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TWO NEW SPECIES OF ISOPOD CRUSTACEANS IN FAMILIES NEW TO ANTARCTICA (DESMOSOMATIDAE AND ISCHNOMESIDAE)

BY

GEORGE A. SCHULTZ

15 Smith St., Hampton, N.J., 08827 U.S.A.

Kussakin (1967) published a list of isopods from the antarctic and subantarctic waters, but did not include any species of Desmosomatidae or Ischnomesidae from the relatively shallow water near the Antarctic Continent. The two new species described here were taken near Anvers Island on the Palmer Peninsula in relatively shallow water. The records of the two species are the most southern of their families and they are the first of their respective families to be recorded in the shallow water surrounding the continent itself. Most species of both families have been taken in deep to very deep water (Wolff, 1962; Hessler, 1970a). Both species are examples of Antarctic or high-latitude emergence of asellotes (Hessler, 1970b).

DESMOSOMATIDAE

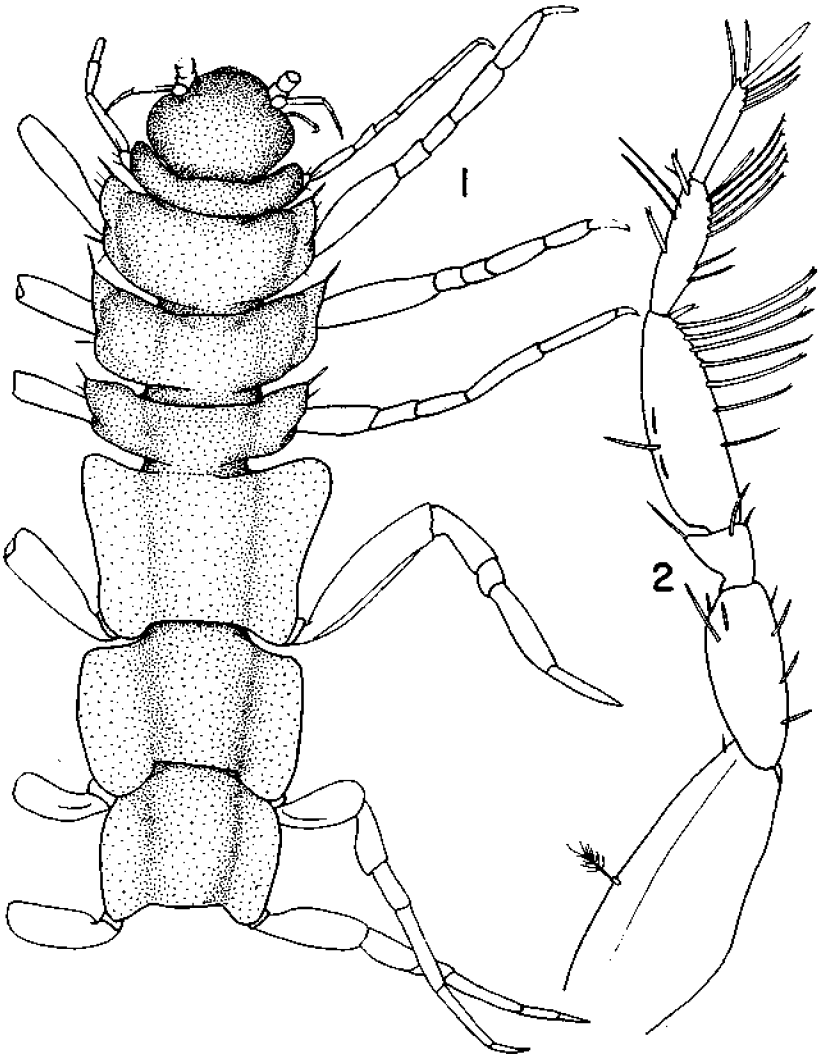
Five species of the family have been described from the subantarctic islands and the deep water off Antarctica. Vanhöffen (1914) recorded *Disparella longimana* (Vanhöffen) from a "Gauss" station 2735 m deep at the base of the continental shelf off Antarctica. Nordenstam (1933) recorded three species from South Georgia — *Desmosoma australe* (64-148 m), *D. brevipes* (64-148 m) and *D. modestum* (125-250m) — and one species from the Falkland Islands — *Eugerdella falklandica* (Nordenstam) (16 m). All were recorded from shallow water from 16 to 250 m deep and thus show high-latitude emergence for members of the family in the southern locations. Depth records for members of the family from northern high-latitudes do show some emergence into relatively shallow water. However, because of the confusion of identity of the tiny specimens, the depth and species records are not always too clear (e.g., *Eugerda intermedia* "possibly 30-2195 meters, surely 116-230 meters" — Hessler, 1970a: 77). Also shallow water emergence is present in species of the family from other than the high-latitudes such as the Gay Head-Bermuda transect (Hessler, 1970a:59, fig. 13).

Desmosoma anversense new species (figs. 1-7)

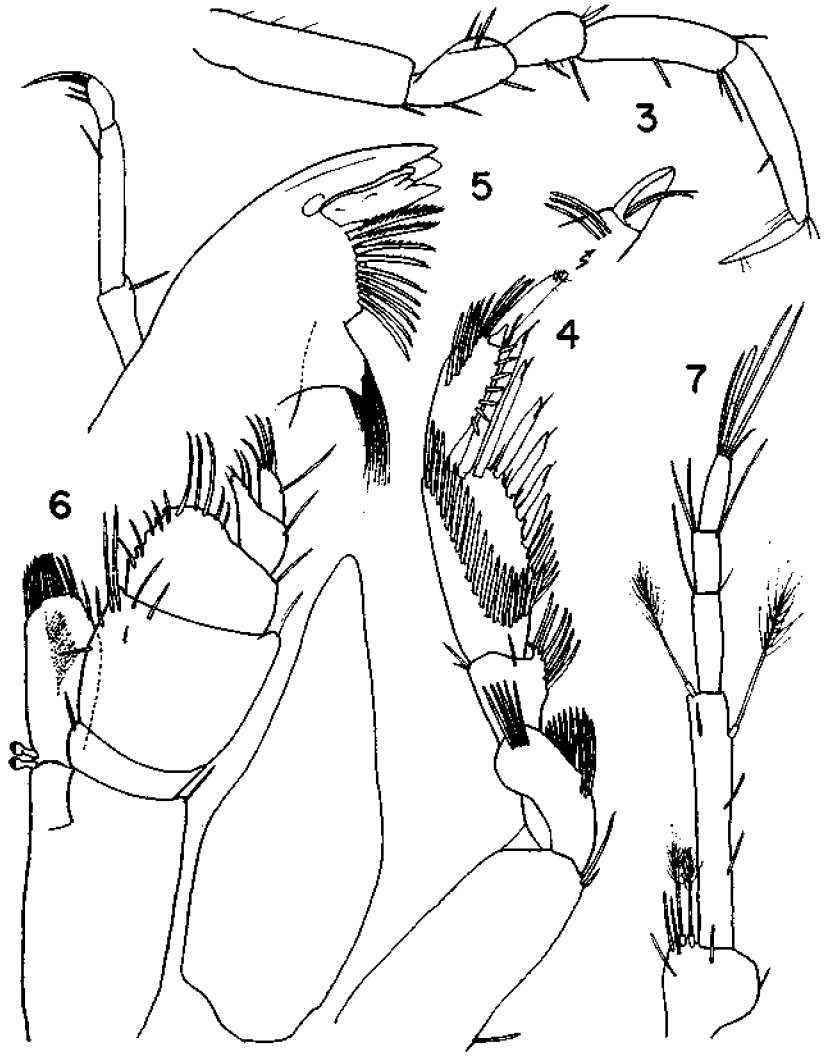
As the pleotelson is missing from the holotype, and only available specimen, its sex is not determined.

The species conforms to the definition of the genus *Desmosoma* Sars as given by Hessler (1970a) except that there are only two long setae on the inner side of the carpus of peraeopod I, not a "row of slender setae" as stated by him. Except for *D. australe* Nordenstam (1933: 255, fig. 72d), none of Nordenstam's (1933) three species have more than three setae on the inner side of the carpus of peraeopod I.

Description. — Dorsum of cephalon and peraeon smooth. Peraeonal segment I narrower and shorter than II, with rounded lateral edges. Peraeonal segments II-IV with setae on anterolateral corners. Peraeonal segments V-VII with rounded



Figs. 1-2. *Desmosoma anversense* n. sp., holotype fragment about 3.3 mm long. 1, dorsal view holotype; 2, peraeopod VII.



Figs. 3-7. *Desmosoma anversense* n. sp. 3, peraeopod I; 4, peraeopod II; 5, left mandible; 6, maxilliped; 7, antenna 1.

corners; posterolateral corners lobed with coxae visible. Segment V widest, its anterolateral corners very large and broad. Segment VII much longer than, but about as wide as segment I.

Antenna 1 with three flagellar articles; flagellum slightly shorter than distal peduncular article; proximal of three flagellar articles longest. Palp of mandible with middle article longest; apical article shortest with curved apical setae. Lacinia mobilis on left mandible; about ten setae in setal row; conical molar process with many long apical setae. Maxilliped with two coupling hooks on narrow endite;

many long setae on sensory edge; palp with three broad basal articles and two narrow apical articles; many setae on inner margins of palp articles.

Peraeopod I with few setae; three setae only on inner margin of propodus. Apical seta of carpus extends about one-third of ventral length of propodus. Ischium only slightly longer than merus; few setae on each. Peraeopod II with large dactyl spine about as long as segment proper; three ventral and two smaller apical setae; propodus with row of long setae on inner margin; two long and two short setae on outer margin; carpus with row of long setae on inner margin, only one long seta on outer margin. Peraeopod VII with many setae of propodus and carpus forming oval of setae. Merus and carpus each with scale-like group of setae.

Holotype fragment, sex undetermined, 3.1 mm long.

Type-locality. — R/V "Hero" Station 721-1066; 64°47.4'S 64°06.8'W, January 26, 1972; Petersen grab. Depth not given, but Station 1069, 64°47.4'S 64°06.2'W, is between 109 and 137 m deep. Other nearby stations are within the depth range of Station 1069.

Disposition of type. — The holotype has been deposited in the National Museum of Natural History, Washington, D.C. (USNM 171426).

Derivation of name. — The name *anversense* refers to the island near the type-locality, Anvers Island.

Affinities. — The species is most like the three species of *Desmosoma* described by Nordenstam (1933) from South Georgia. It differs from all of these in lacking longitudinal ridges or other indicated structures on the posterior part of the cephalon and in having the anterolateral margins of peraeonal segment V enlarged into lobes. All three species according to Nordenstam's drawings lack the enlarged dactyl claw at the apex of the dactylus which is so apparent in the new species as illustrated here (fig. 2). The new species is most like *D. australe* Nordenstam in that both have an antenna 1 which is proportionately elongate when compared to that structure in the other two species from South Georgia. The two species differ in the shape of the peraeonal segments, especially peraeonal segment V. There are also some minor differences in the setal pattern on peraeopods I and VII, but they could be sexually dimorphic or just individual differences.

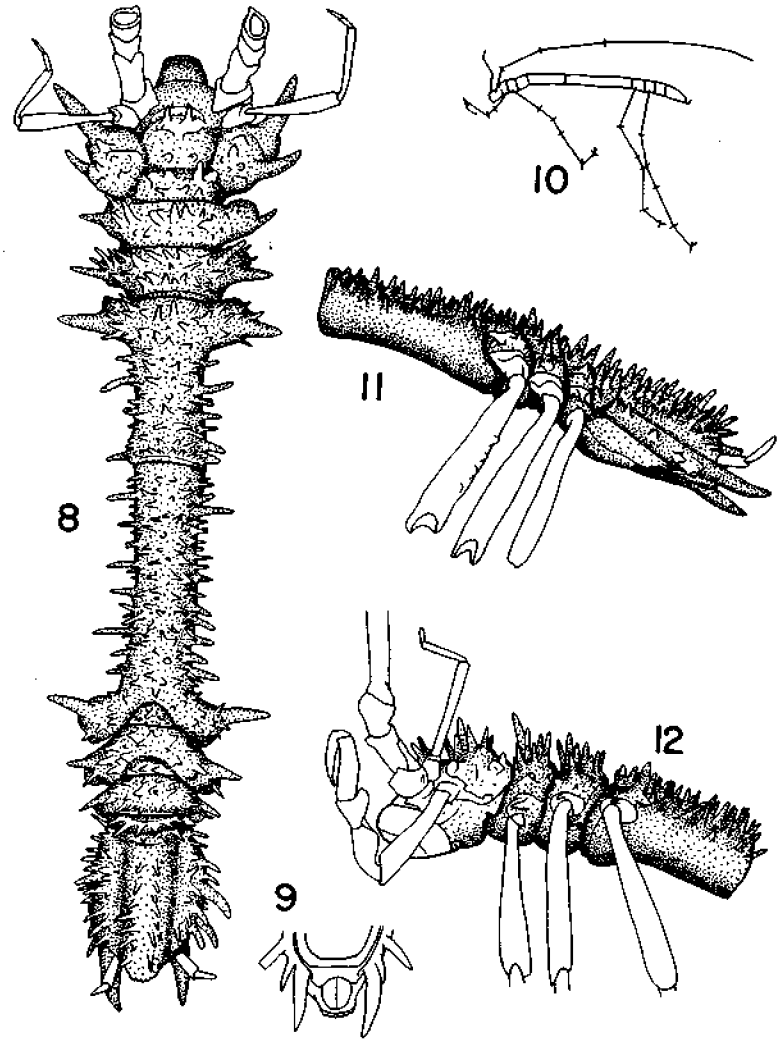
Ischnomesus antarcticus new species (figs. 8-26)

The new species conforms to the description of the family by Wolff (1962) and Menzies & George (1972) except that there appears to be a definite indication of a squama on the third peduncular segment of antenna 2. The squama appears to be very close, indeed, fused to the segment and has two long setae at its apex (fig. 19) (Schultz, 1969: 35).

Species of Ischnomesidae generally are collected from deep water (Wolff, 1962: 71; Menzies, 1962: 111). One species, *Ischnomesus bispinosus* (Sars), was taken from four sites from 94 to 1100 m deep — the Lofoten Islands in northern Norway (94 m), the Skagerrak, west of Ireland (1100 m) and in the Gulf of Naples in

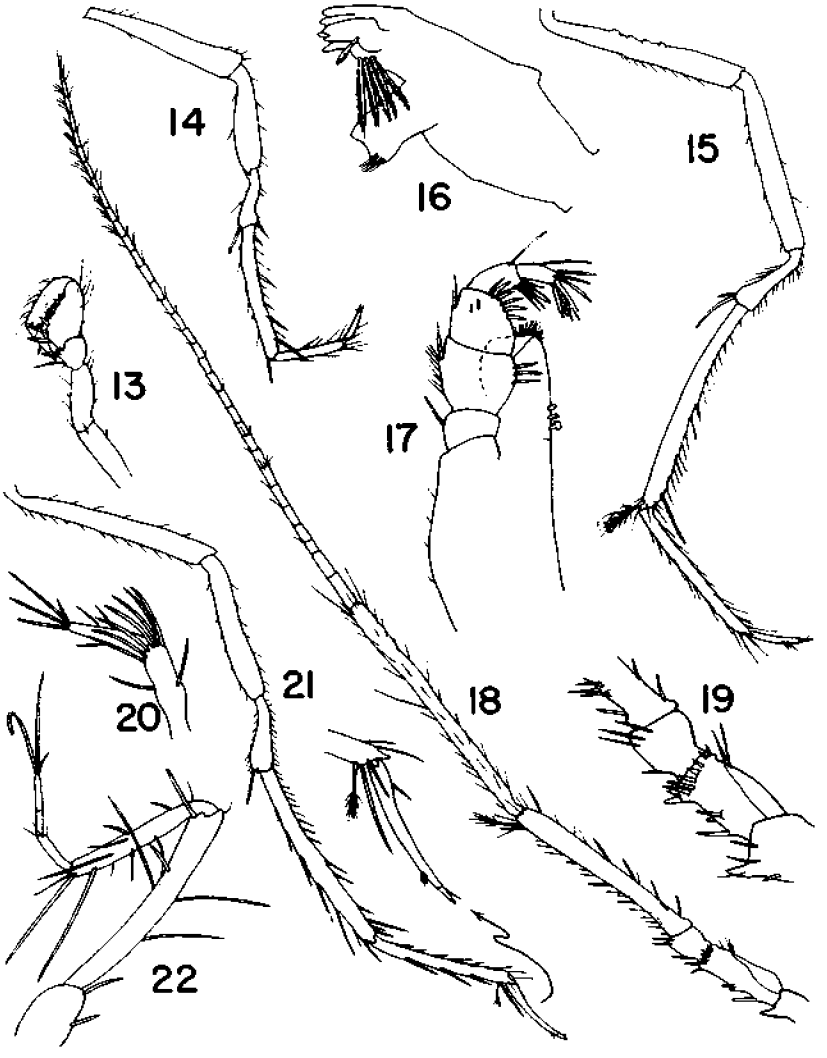
the Mediterranean (Menzies, 1962). The species shows high-latitude emergence of a member of the family in the Arctic. It also shows emergence in the Gulf of Naples, but in my opinion the specific identity of the specimens of that record remains questionable until specimens from the type-locality and the Mediterranean are compared. *Ischnomesus bispinosus* is the only species in the genus to show high-latitude (Arctic) emergence, and the new species described here is the only one to show emergence in the Antarctic.

The new species conforms to the definition of the genus as given by Wolff (1962) and Menzies & George (1972).



Figs. 8-12. *Ischnomesus antarcticus* n. sp., holotype male 8.3 mm long. 8, dorsal view holotype; 9, ventral view posterior part pleotelson; 10, schematic showing relative appendage lengths; 11, lateral view posterior half; 12, lateral view anterior half.

Description. — Dorsum of cephalon, peraeon and pleotelson covered with highly calcified spines. Cephalon enclosed within peraeonal segment I; with four spines on dorsum. Large lateral spines on each peraeonal segment and on lateral edges and posterolateral margins of pleotelson. Peraeonal segment I with especially large anterolateral spines. Spines on lateral margins of segments IV and V larger than those of other segments except I. One free pleonal segment with cresent of dorsal spines. Large posterolateral spines arising ventrolaterally from pleotelson.



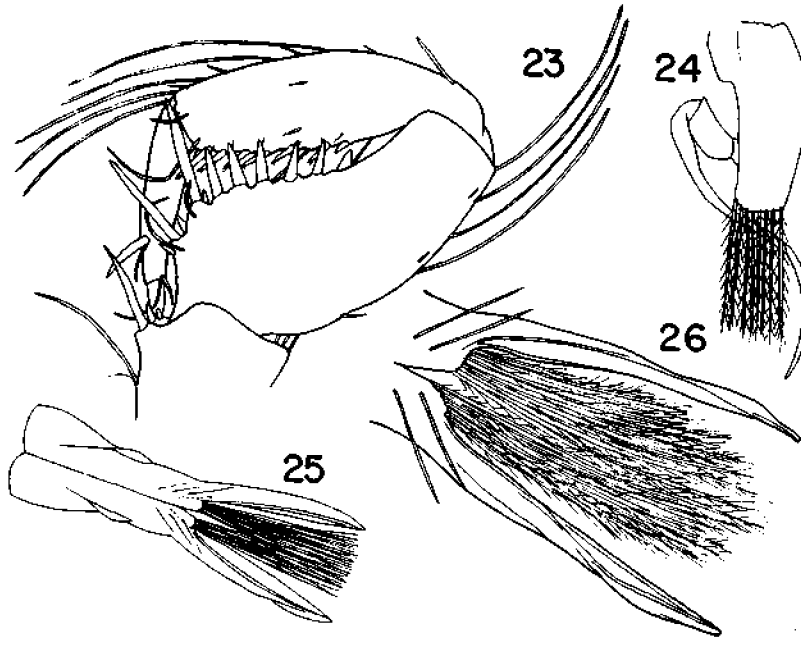
Figs. 13-22. *Ischnomesus antarcticus* n. sp. 13, peraeopod I; 14, peraeopod II; 15, peraeopod V; 16, left mandible; 17, maxilliped; 18, antenna 2; 19, detail peduncle antenna 2; 20, uropod; 21, peraeopod VI; 22, antenna 1.

Pleotelson with posterior margin produced, truncate with margin minutely crenulate. Sterna of peduncular segments and pleotelson smooth.

Antenna 1 with peduncular segment 1 short; peduncular segment 3 two-thirds length of 2, both with long setae; three flagellar articles. Antenna 2 about one-quarter longer than body; segments 1 and 2 short; 3 with indication of squama fused to side (fig. 19); 4 about half length of 3; 5 and 6 elongate with 5 shorter than 6; flagellum about as long as peduncle, multiarticulate. Left mandible with lacinia mobilis with one seta; five setae in setal row; molar process cylindrical, truncate, tipped with few short setae; palp absent. Maxilliped with apical two articles of palp narrower than others; endite with three coupling hooks and setae on sensory edge. Maxilla 1 and 2 normal for genus.

Peraeopod I subchelate; dactylus folds very near to carpus. Eight (two long) setae on palm of carpus; propodus with smaller setae ("teeth") on inner margin. Dactylus with one large seta coming from just above short dactyl claw. Merus with long apical seta, second long seta on inner margin. Long hair-like setae present on manus.

Peraeopods II-VII elongate. Peraeopod II about two-thirds length of peraeopod VI; peraeopod V almost as long as VI. Uniramous uropod with peduncle and basis subequal in length; many setae placed distally on basis. Male pleopods 1 with two long distal lateral extensions with about 30 plumose setae between, longest extending about length of distal extensions. Pleopod 2 longer than broad



Figs. 23-26. *Ischnomesus antarcticus* n. sp. 23, detail manus peraeopod I; 24, male pleopod 2; 25, male pleopod 1; 26, detail distal part male pleopod 1.

with eight plumose setae about as long as segment on posterior margin; endopod much longer than segment and tapering to point.

Holotype male 8.3 mm long.

Type-locality. — R/V "Hero" Station 702-511, 64°46.8'S 63°29.3'W, March 18, 1970; Blake trawl. Depth not given, but the position is near the edge of the shelf west of Anvers Island and nearby stations are recorded as deep as 274 m.

Disposition of type. — The holotype male has been deposited in the National Museum of Natural History, Washington, D.C. (USNM 171353).

Affinties. — In the new species the posterior margin of the pleotelson (fig. 9), lacks the two long spines between the posterolateral spines which are shown there in *I. birsteini* Wolff (1962: 75, fig. 30). In general, in the new species more spines are present on the dorsum of the peraeonal segments, and small spines are present much nearer to the bases of the large lateral spines. The spines on the lateral margins of the pleotelson of *I. birsteini* are much longer and larger than those of *I. antarcticus*. The arrangement of the spines on the ventrolateral edges of the pleotelson of *I. sparcki* Wolff (1956) is strongly different from that in the new species, as a comparison of Wolff's figure 8 and that structure illustrated here (fig. 9) will show.

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SUMMARY

The two new species described here are the first of their families to be collected in relatively shallow water near Antarctica. Both show antarctic or high-latitude emergence since the majority of other members of the families are known from very deep water. The two species were collected near Anvers Island on Palmer Peninsula.

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