Results of the Norwegian Scientific Expedition to Tristan da Cunha 1937-1938.

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THE MARINE ISOPOD CRUSTACEA OF THE TRISTAN DA CUNHA ARCHIPELAGO

Erling Sivertsen & Lipke B. Holthuis

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Erling Sivertsen and Lipke B. Holthuis

University of Trondheim
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ABSTRACT

Sivertsen, Erling & Lipke B. Holthuis. 1979. The marine Isopod Crustacea of the Tristan da Cunha Archipelago. *Gunneria* 35: 1-128.[1)]

A review is given of the known species of marine Isopoda of Tristan da Cunha and the other islands of the Tristan da Cunha Archipelago, based on the collections made by the 1937-1938 Norwegian Scientific Expedition in that island group. Most of the material was obtained in the intertidal zone, from the spray zone at some meters above the high water line to far out in the surf zone. Depths from 3 to 60 meters were explored by dredge and yielded much interesting material. The collection brought together in 1937-1938 contains, besides the 7 species that had already been reported from the Tristan da Cunha Group, 19 species that are now reported for the first time in the island. Three new genera and 14 new species are described in the present paper.

The endemism among the marine Isopoda of the Tristan da Cunha Group is very high: of the 26 species now known to occur there, no less than 17 have so far not been reported from outside the archipelago. Furthermore some of the Tristan forms now identified with species known from elsewhere may later, when more data become available, prove to be distinct species. As expected, the fauna of the marine Isopoda of the Tristan da Cunha Archipelago shows most resemblance to the faunae of other antiboreal regions, like St. Paul and Amsterdam Islands, South Africa and southern Chile.

Erling Sivertsen, University of Trondheim, The Royal Norwegian Society of Sciences and Letters, The Museum, N-7000 Trondheim

Lipke B. Holthuis, Rijksmuseum van Natuurlijke Historie, Leiden, Nederland.

1) Zoological Series 11.

INTRODUCTION

During the 1937-1938 Norwegian Scientific Expedition to Tristan da Cunha, the senior author was the marine zoologist of the expedition. Collecting was done in numerous localities on many of the islands. Apart from hand collecting in the littoral and sub-littoral zones, dredge-hauls were made from a small dinghy with outboard motor; the greatest depths reached, however, did not surpass 60 m. The only deep-sea material came, surprisingly, from the stomach contents of albatrosses that nest on the island (see *Anuropus*, p. 28). The bulk of the material originates from very shallow water.

Of the Crustacea collected during the expedition several groups have already been studied: Amphipoda (Stephensen, 1949), marine Copepoda (Wiborg, 1964), Decapoda, Mysidacea and Cirripedia (Holthuis & Sivertsen, 1967). Next to the Amphipoda, the Isopoda form the group that is best represented in the collection. No less than 26 species of marine Isopoda are represented in the material. Not included in the present report are the Tanaidacea and the terrestrial Isopoda, which, it is hoped, will later be treated separately.

So far the isopod fauna of the islands was very poorly known, only a few records having been published from the area. The oldest record is Leach's (1818) mention of a new species *Sphaeroma Tristense* (= *Isocladus tristensis* (Leach)). Leach's material was collected at Tristan da Cunha by Captain Dugald Carmichael, who from 28 November 1816 until May 1817 stayed on the island as a member of the British garrison that was stationed there to prevent any possible attempt by Napoleon to escape from the island of St. Helena. Carmichael was specifically charged to investigate the flora, fauna, and geology of Tristan da Cunha, and his was the first official scientific exploration of the island. In a report that he published in 1818 a general sketch of the island is given, the isopods briefly being mentioned on p. 498, but not identified as to the species. In October 1877 the "Challenger" expedition visited the island and some Isopoda were collected there (see Beddard, 1886, 1886a). In a few later publications some scattered records of marine Isopoda from Tristan da Cunha can be found, but the most important contribution to our knowledge of the marine Isopoda of the Archipelago is Barnard's (1965) account of the results of the 1955-1956 Gough Island Scientific Survey, in which 8 species of marine Isopoda of the islands are listed.

Of the 26 species of Isopoda from the Tristan da Cunha Archipelago reported upon in the present paper no less than 14 are new to science and 17 have so far not been reported outside the islands. Although it is possible that some of the species may occur elsewhere and have been overlooked there (many are very small), the picture of a marine isopod fauna with a high degree of endemism given by the present collection agrees with that found in other groups.

All of the holotypes and most of the other material is deposited in the Kongelige Norske Videnskabers Selskab, Museet, Trondheim. Duplicates (including paratypes) are placed in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden.

GEOGRAPHICAL DISTRIBUTION

Table 1.

	New genus	New species	Reported from Tristan before 1938	Known outside Tristan
1. Tristanthura barnardi	+	+	+	-
2. Eisothistos minutus	-	+	-	-
3. Anuropus aeronautus	-	+	-	-
4. Aega deshaysiana	-	-	-	+
5. Livoneca raynaudii	-	-	-	+
6. Isocladus tristensis	-	-	+	-
7. Dynamenella menziesi	-	+	-	+
8. Cassidinopsis tuberculata	-	+	-	-
9. Phycolimnoria tristanensis	-	+	-	-
10. Paridotea apposita	-	-	+	-
11. Neastacilla tristanica	-	+	-	-
12. Munna aculeata	-	+	-	-
13. M. nana	-	-	-	+
14. M. varians	-	+	-	-
15. Paramunna antarctica	-	-	-	+
16. Pleurogonium minutum	-	-	+	-
17. Pleurosignum chilense	-	-	-	+
18. Santia hispida	+	-	-	+
19. S. compacta		+	-	-
20. Joeropsis paulensis	-	-	+	+
21. Iathrippa tristani	-	-	+	-
Iathrippa menziesi x)	-	-	-	+
22. Iais pubescens	-	-	+	+
23. I. elongata	-	+	-	-
24. Neojaera hirsuta	-	+	-	-
25. Ianiropsis longipes	-	+	-	-
26. Vermectias caudiculata	+	+	-	-

x) A Chilean species to which we gave a new name

LIST OF STATIONS

The following list enumerates all the stations of the 1937-1938 Norwegian Scientific Expedition to Tristan da Cunha at which marine isopods were collected. Of each station the available ecological and other data are provided, while the species taken at each are listed. In the rest of the text of the present paper the stations will only be indicated by number and the various details (ecological and otherwise) will then not be repeated.

List of stations

Tristan da Cunha Island (Sta. 1-81; also 163-171)

Sta. 2. Off Big Beach; dredged in 4-6 m depth, inside *Macrocystis* belt; hard bottom with fine volcanic sand; 15 December 1937. *Dynamenella menziesi.*

Sta. 3. Big Beach; from *Macrocystis* rhizomes found floating on the surface; 15 December 1937. *Phycolimnoria tristanensis, Munna varians, Joeropsis paulensis, Ianiropsis longipes.*

Sta. 12. Near Little Beach; among algae in intertidal zone; 20 December 1937. *Isocladus tristensis, Dynamenella menziesi.*

Sta. 13. Julia Point, between Big and Little Beach; among rocks in intertidal zone; 21 December 1937. *Joeropsis paulensis.*

Sta. 13a. Julia Point; as previous station but far out in the surf zone; 21 December 1937. *Dynamella menziesi.*

Sta. 13c. Julia Point; tidal zone, among Corallinaceae; 21 December 1937. *Dynamella menziesi.*

Sta. 13 d. Julia Point; tidal zone, among dark green algae (*Ulva* spec.) and sand; 21 December 1937. *Dynamenella menziesi.*

Sta. 13e. Julia Point; tidal zone, among brown coloured red algae (Gigartinaceae); 12 December 1937. *Dynamenella menziesi.*

Sta. 15. Julia Point. From a brown alga in the surf zone; 22 December 1937. *Dynamenella menziesi.*

Sta. 16. Julia Point; among *Lithothamnion* from the extreme outer surf zone, with large clumps of small mussels; 22 December 1937. *Dynamenella menziesi, Munna nana, Pleurogonium minutum, Santia hispida.*

Sta. 27. Off Little Beach, near landing place; dredge haul at 3 m depth, hard bottom with rock and large stones, red algae; 27 December 1937. *Dynamenella menziesi.*

Sta. 32. Near Little Beach; surface tow with plankton net (opening 70 cm), inside *Macrocystis* belt; 27 December 1937, 17h^{15} - 17h^{20}. *Munna nana.*

Sta. 39b. Sandy Point; among algae collected in the surf zone, slightly south of sandy beach; 30 December 1937. *Dynamenella menziesi, Joeropsis paulensis.*

Sta. 40. Off Sandy Point; dredge haul in 3-13 m, *Laminaria* and various other algae; 30 December 1937. *Dynamenella menziesi.*

Sta. 41. Off Sandy Point; dredge haul in 3-12 m, algae; 30 December 1937. *Dynamenella menziesi, Paridotea apposita, Joeropsis paulensis.*

Sta. 46. Julia Point; among rock in surf zone; 3 January 1938. *Dynamenella menziesi, Santias hispida.*

Sta. 47. Julia Point; among *Lithothamnion* in surf zone; 3 January 1938. *Tristanthura barnardi, Eisothistos minutus, Dynamenella menziesi, Santia hispida, Joeropsis paulensis, Ianiropsis longipes.*

Sta. 49. Julia Point; among *Lithothamnion* from the extreme outer part of the surf zone at low tide; 4 January 1938. *Dynamenella menziesi, Munna nana, Munna varians, Santia hispida, Joeropsis paulensis, Ianiropsis longipes.*

Sta. 51. Seal Bay; dredge haul in 5-10 m, sand and various algae; 4 January 1938. *Dynamenella menziesi, Munna nana, Munna varians, Santia hispida, Joeropsis paulensis, Ianiropsis longipes.*

Sta. 52. Seal Bay; from algae collected on the beach; 4 January 1938. *Dynamenella menziesi, Paridotea apposita.*

Sta. 54. Seal Bay; dredge haul in 13-20 m depth, sandy bottom with algae; 4 January 1938. *Paridotea apposita.*

Sta. 55. Seal Bay; dredge haul in 6-18 m, sandy bottom with algae; 4 January 1938. *Tristanthura barnardi, Isocladus tristensis.*

Sta. 64. Julia Point; in rock pools and under stones which are submerged at high tide; 15 January 1938. *Isocladus tristensis, Dynamenella menziesi, Munna varians, Pleurogonium minutum, Santia hispida, Joeropsis paulensis.*

Sta. 65. Julia Point; outer surf zone at low tide, taken partly from red and green algae, partly from *Lithothamnion*; 15 January

1938. *Isocladus tristensis, Dynamenella menziesi, Santia hispida, Joeropsis paulensis, Ianiropsis longipes.*

Sta. 67. Julia Point; rock pools at low tide; 16 January 1938. *Isocladus tristensis, Joeropsis paulensis.*

Sta. 68. Julia Point; from the extreme outer part of the surfzone at spring low tide, under stones and in cracks in the rocks; 6 January 1938. *Tristanthura barnardi, Dynamenella menziesi, Munna nana, Munna varians, Pleurogonium minutum, Santia hispida, Joeropsis paulensis, Iathrippa tristani, Iais pubescens, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 70. Julia Point; outer part of surf zone at low tide, among various algae; 17 January 1938. *Dynamenella menziesi, Paridotea apposita, Joeropsis paulensis, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 71. Julia Point; outer part of surf zone at low tide; among stones and rubble in cracks in the rocks; 17 January 1938. *Tristanthura barnardi, Paridotea apposita, Munna nana, Munna varians, Santia hispida, Joeropsis paulensis, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 72. Julia Point; surf zone, less far out than previous station, among stones and rubble in cracks of the rock; 18 January 1938. *Neojaera hirsuta.*

Sta. 73. Julia Point; surf zone, partly from among *Lithothamnion*, partly among small stones and sand; 18 January 1938. *Dynamenella menziesi, Munna nana, Munna varians, Pleurogonium minutum, Santia hispida, Joeropsis paulensis.*

Sta. 74. Julia Point; as far out in the surf zone as possible, among stones and in cracks in the rock; 18 January 1938. *Tristanthura barnardi, Munna nana, Munna varians, Pleurogonium minutum, Santia hispida, Joeropsis paulensis, Iathrippa tristani, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 77. Little Beach; among algae in places where the water part of the time is salt and part of the time fresh; 24 January 1938. *Dynamenella menziesi, Munna nana, Munna varians.*

Sta. 78. Julia Point; in small enclosed rock pool in the spray zone; 25 January 1938. *Dynamenella menziesi, Paridotea apposita.*

Sta. 79. Julia Point; upper part of beach, in rock pools which are seldom reached by high tide; 25 April 1938. *Isocladus tristensis.*

Sta. 80. Off Big Beach; dredge haul in 5-12 m, bottom partly sand, partly stones covered with algae; 25 January 1938. *Dynamenella menziesi.*

Nightingale Island (Sta. 83-11[illegible], also 117-122)

Sta. 83. Middle Island; enclosed pool, about 1 m deep, which only occasionally received fresh seawater; among algae and loose stones on the bottom, the stones are covered with Corallinaceae, *Anomia*, Pelecypods etc.; 1 February 1938. *Isocladus tristensis, Dynamenella menziesi, Joeropsis paulensis.*

Sta. 84. Middle Island; enclosed pool below penguin colony, the water is seldom renewed and is made turbid by the penguin guano; 1 February 1938. *Isocladus tristensis.*

Sta. 84a. Middle Island; small pool near the foregoing, green algae; 1 February 1938. *Cassidinopsis tuberculata.*

Sta. 85. Middle Island; near landing place, various algae from exposed places; 1 February 1938. *Dynamenella menziesi, Pleurosignum chilense.*

Sta. 86. Middle Island; just outside landing place, dredge haul in 8-12 m in the *Macrocystis* belt, hard even bottom; 1 February 1938. *Dynamenella menziesi, Paridotea apposita.*

Sta. 87. Nightingale; algae from pot holes along the shore; 1 February 1938. *Isocladus tristensis, Dynamenella menziesi.*

Sta. 88. Off north-eastern coast; dredge haul in 20-40 m, outside *Macrocystis* belt, hard bottom with stones from the size of a hazel nut to that of a fist, strongly overgrown with sponges, hydroids, pelecypods, etc.; 2 February 1938. *Tristanthura barnardi, Santia compacta, Iathrippa tristani, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 90. Landing place; from pot holes which are regularly flooded by the sea; 3 February 1938. *Isocladus tristensis, Dynamenella menziesi, Joeropsis paulensis, Iais pubescens.*

Sta. 92. Near landing place; in rock crack in the outer part of the tidal zone, among algae, bottom sand with smell of H_2S; 4 February 1938. *Isocladus tristensis, Joeropsis paulensis.*

Sta. 93. Near landing place; in rock crack in the outer part of the tidal zone, among algae, bottom small stones and sand; 4 February 1938. *Dynamenella menziesi.*

Sta. 94. Near landing place; among *Lithothamnion* collected far out in the surf zone; 4 February 1938. *Tristanthura barnardi, Munna varians, Pleurogonium minutum, Santia hispida, Joeropsis paulensis, Neojaera hirsuta, Ianiropsis longipes, Vermectias caudiculata.*

Sta. 96. Landing place; from algae (*Ulva* and calcareous algae) in pools which are reached by high tide; 4 February 1938. *Joeropsis paulensis*.

Sta. 100. Sea Hen Rock, west side of Nightingale; small crack in the rock just within reach of the waves, among algae; 5 February 1938. *Isocladus tristensis*, *Cassidinopsis tuberculata*.

Sta. 101. Sea Hen Rock; down in the steep part of the surf zone, among *Lithothamnion*, Corallinaceae, and red algae; 5 February 1938. *Dynamenella menziesi*, *Cassidinopsis tuberculata*, *Munna varians*, *Santia hispida*.

Sta. 103. Near landing place; large enclosed pool with turbid water, which is only reached by the sea when the swell is very high; 6 February 1938. *Dynamenella menziesi*, *Munna varians*, *Santia hispida*.

Sta. 104. Near landing place; among various Corallinaceae and red algae in pot holes; 6 February 1938. *Isocladus tristensis*.

Sta. 105. West of landing place; small pools above the surf zone; 6 February 1938. *Isocladus tristensis*, *Cassidinopsis tuberculata*.

Sta. 106a. East of landing place; small pool above the surf zone; 7 February 1938. *Isocladus tristensis*, *Cassidinopsis tuberculata*, *Joeropsis paulensis*.

Sta. 106b. East of landing place; among large stones out in the surf; 7 February 1938. *Isocladus tristensis*.

Sta. 106d. East of landing place; under stones which are rarely reached by the sea, the bottom is humid, with *Laminaria* debris; 7 February 1938. *Isocladus tristensis*.

Sta. 107. East of landing place; gravel beach, among the stones; 7 February 1938. *Isocladus tristensis*, *Paridotea apposita*, *Joeropsis paulensis*, *Iais pubescens*.

Sta. 108. East of landing place; gravel beach, among algae in surf zone; 7 February 1938. *Dynamenella menziesi*, *Santia hispida*.

Sta. 109. South coast of Nightingale; gravel beach, from algae in surf zone; 7 February 1938. *Dynamenella menziesi*, *Paridotea apposita*.

Sta. 110. South coast of Nightingale; dredge haul in 2-10 m inside *Macrocystis* belt, a hard bottom with masses of *Laminaria*, red algae, etc.; 7 February 1938. *Dynamenella menziesi*, *Janiropsis longipes*.

Sta. 111. Outside kelp zone east of landing place; dredge haul in 40-60 m, a hard bottom with stones from the size of a hazel nut to a cabbage, rich haul; 7 February 1938. *Tristanthura barnardi*, *Cassidinopsis tuberculata*, *Munna aculeata*, *Munna varians*, *Santia hispida*, *Joeropsis paulensis*, *Ianiropsis longipes*.

Sta. 112. Near landing place; among algae collected from a vertical rock wall in the tidal zone; 7 February 1938. *Tristanthura barnardi*, *Dynamenella menziesi*, *Neastacilla tristanica*, *Joeropsis paulensis*, *Ianiropsis longipes*.

Stoltenhoff Island, near Nightingale (Sta. 113-116)

Sta. 113. Landing place on north side of the island; in surf zone on very steep, much exposed rocky shore, densely covered with *Lithothamnion*, large *Balanus laevidomus* Holthuis & Sivertsen, etc.; 8 February 1938. *Tristanthura barnardi*, *Isocladus tristensis*, *Dynamenella menziesi*, *Neastacilla tristanica*, *Munna varians*, *Santia hispida*, *Joeropsis paulensis*, *Neojaera hirsuta*, *Ianiropsis longipes*.

Sta. 113b. Landing place; in small rock pool, about 2 m above sea level; 8 February 1938. *Cassidinopsis tuberculata*.

Sta. 114. Slightly east of landing place; as previous locality but less exposed; 8 February 1938. *Dynamenella menziesi*, *Joeropsis paulensis*, *Ianiropsis longipes*.

Sta. 115. Off north-eastern coast; dredge haul in 35-55 m, hard bottom with stones covered with hydroids, Bryozoa and sponges, between which many Pelecypoda; 8 February 1938. *Ianiropsis longipes*.

Sta. 116. Slightly south-east of previous station; dredge haul in 30-45 m, going into the *Macrocystis* belt from the outside, hard bottom with sponges; 8 February 1938. *Dynamenella menziesi*, *Munna aculeata*, *Munna nana*, *Munna varians*, *Paramunna antarctica*, *Pleurogonium minutum*, *Santia hispida*, *Neojaera hirsuta*, *Ianiropsis longipes*, *Vermectias caudiculata*.

Nightingale Island (Sta. 117-122, also 83-112)

Sta. 117. East of landing place; dredge haul in 5-10 m, close inshore, inside *Macrocystis* belt, hard bottom, masses of algae; 11 February 1938. *Isocladus tristensis*, *Dynamenella menziesi*, *Paridotea* *apposita, Joeropsis paulensis.*

Sta. 118. Between Nightingale and Middle Islands; dredge haul in 7-10 m, hard bottom with algae; 11 February 1938. *Dynamenella menziesi, Paridotea apposita, Neastacilla tristanica, Neojaera hirsuta, Ianiropsis longipes.*

Sta. 120a, b. Slightly west of the landing place; from small pools in the upper part of the surf zone; 11 February 1938. *Cassidinopsis tuberculata.*

Inaccessible Island (Sta. 125-160)

Sta. 125b. Near Blenden Hall; gravel beach; 16 February 1938. *Isocladus tristensis, Dynamenella menziesi.*

Sta. 125c. Near Blenden Hall; gravel beach, among stones and algae; 16 February 1938. *Isocladus tristensis.*

Sta. 125e. Near Blenden Hall; gravel beach; 17 February 1938. *Dynamenella menziesi, Paridotea apposita, Iais pubescens.*

Sta. 127. Near Blenden Hall; among algae from the surf zone; 18 February 1938. *Dynamenella menziesi.* (Sta. 127c with the same data.)

Sta. 128. Near Blenden Hall; among gravel in surf zone; 18 February 1938. *Isocladus tristensis, Dynamenella menziesi, Paridotea apposita, Joeropsis paulensis, Iais pubescens.*

Sta. 129. Near Blenden Hall; among gravel in surf zone; 18 February 1938. *Dynamenella menziesi.*

Sta. 132. Near Blenden Hall; sea shore; 18 February 1938. *Dynamenella menziesi.*

Sta. 132b. Near Blenden Hall; sea shore; 18 February 1938. *Isocladus tristensis.*

Sta. 133. Near Blenden Hall; in tidal zone of gravel beach, among stones and sand; 19 February 1938. *Isocladus tristensis, Ianiropsis longipes.*

Sta. 135. Near Blenden Hall; from *Laminaria* rhizomes drifted inshore; 19 February 1938. *Paridotea apposita.*

Sta. 136. North Point; in small pool of brackish water in a cave about 2 m above the beach; 19 February 1938. *Iais elongatus.*

Sta. 140. Entrance to landing place at Blenden Hall; dredge haul in about 10 m, in channel between two rocks in the *Macrocystis* belt, many algae; 20 February 1938. *Neastacilla tristanica.*

Sta. 142. Outside landing place near Blenden Hall; dredge haul in 4 to 10 m, in a deep area between two rock ridges, containing many algae loosened by the surf; 20 February 1938. *Dynamenella menziesi, Paridotea apposita.*

Sta. 145. Near Blenden Hall; from stones on the shore in somewhat protected places, where the force of the surf was broken by the fact that the slope of the shore was very gradual; 21 February 1938. *Ianiropsis longipes.*

Sta. 145a. Near Blenden Hall; same locality as Sta. 145, from among Corallinaceae; 21 February 1938. *Dynamenella menziesi.*

Sta. 145c. Near Blenden Hall; same locality as Sta. 145, from among various algae, hydroids and red algae; 21 February 1938. *Dynamenella menziesi, Paridotea apposita.*

Sta. 146. Near Blenden Hall; as Sta. 145, but farther out; 22 February 1938. *Tristanthura barnardi, Dynamenella menziesi, Paridotea apposita, Munna varians, Santia hispida, Joeropsis paulensis.*

Sta. 149. North-north-west of Blenden Hall; dredge haul in 50 to 60 m outside *Macrocystis* belt, some loose leaves of *Laminaria* and *Macrocystis* in catch; 24 February 1938. *Joeropsis paulensis, Ianiropsis longipes.*

Sta. 150. Off landing place near Blenden Hall; dredge haul in about 9 m inside *Macrocystis* belt, net scraping along rock ridge; 24 February 1938. *Dynamenella menziesi, Paridotea apposita, Neastacilla tristanica.*

Sta. 151. Off north-east side of island, near newly cultivated areas; dredge haul in 5 m, inside *Macrocystis* belt; 24 February 1938. *Tristanthura barnardi, Eisothistos minutus, Dynamenella menziesi, Paridotea apposita.*

Sta. 152. Off North Point; dredge haul in 5 m, inside *Macrocystis* belt, exposed locality, a vertical cliff with big boulders in front; 24 February 1938. *Dynamenella menziesi.*

Sta. 153. East of North Point; dredge haul in 7 to 8 m, inside *Macrocystis* belt; 24 February 1938. *Tristanthura barnardi, Dynamenella menziesi.*

Sta. 154. South of East Point; dredge haul in 40 m, outside *Macrocystis* belt; 25 February 1938. *Isocladus tristensis, Munna aculeata, Munna varians, Santia hispida, Joeropsis paulensis, Neojaera* *hirsuta*, *Ianiropsis longipes*.

Sta. 155. South of East Point; dredge haul in 8 to 9 m, inside *Macrocystis* belt; 25 February 1938. *Tristanthura barnardi*, *Dynamenella menziesi*, *Paridotea apposita*, *Neastacilla tristanica*.

Sta. 156. Protected side of South Point; dredge haul in 5 to 8 m, inside and in *Macrocystis* belt, which comes close to the steep cliff shore; 25 February 1938. *Dynamenella menziesi*, *Paridotea apposita*, *Neastacilla tristanica*, *Munna nana*, *Munna varians*, *Pleurogonium minutum*.

Sta. 157. South Point; among *Lithothamnion* in tidal zone on steep cliff in exposed position; 25 February 1938. *Tristanthura barnardi*, *Dynamenella menziesi*, *Paridotea apposita*, *Munna nana*, *Munna varians*, *Pleurogonium minutum*, *Santia hispida*, *Joeropsis paulensis*.

Sta. 159. Blenden Hall; shore, from algae that are regularly covered by the surf; 1 March 1938. *Dynamenella menziesi*.

Sta. 160. Near cultivated area near Blenden Hall; from part of the shore that is sheltered by the presence of large outlying boulders; 5 March 1938. *Dynamenella menziesi*, *Cassidinopsis tuberculata*, *Paridotea apposita*, *Munna nana*, *Munna varians*, *Pleurogonium minutum*, *Santia hispida*, *Joeropsis paulensis*, *Iais pubescens*.

Sta. 160a. Near cultivated area near Blenden Hall; from a rock pool close to the low tide line, flooded at high tide; 5 March 1938. *Isocladus tristensis*, *Dynamenella menziesi*, *Paridotea apposita*, *Iais pubescens*.

Sta. 160b. Near cultivated area near Blenden Hall; from small stones, which lie sheltered under and among larger stones in the outer surf zone; 5 March 1938. *Isocladus tristensis*, *Munna nana*, *Santia hispida*, *Joeropsis paulensis*.

Sta. 160d. Near cultivated area near Blenden Hall; on the shore outside the expedition's house, from algae between stones which are wetted by the surf; 5 March 1938. *Isocladus tristensis*.

Sta. 160e. Near cultivated area near Blenden Hall; far out in the surf zone, between large boulders, from small stones that are grown over by sponges; 6 March 1938. *Isocladus tristensis*, *Paridotea apposita*, *Munna nana*, *Munna varians*, *Joeropsis paulensis*, *Iathrippa tristani*, *Ianiropsis longipes*.

Sta. 160f. Near cultivated area near Blenden Hall; from various algae in the surf zone, less far out than previous station; 6 March 1938. *Munna varians*, *Santia hispida*, *Joeropsis paulensis*, *Ianiropsis longipes*.

Sta. 160g. Near cultivated area near Blenden Hall; probably from gravel beach outside the expedition's house; 6 March 1938. *Tristanthura barnardi*, *Isocladus tristensis*, *Munna varians*, *Santia hispida*, *Iathrippa tristani*, *Ianiropsis longipes*.

Tristan da Cunha Island (Sta. 163-171; also 1-81)

Sta. 162. Little Beach; 15 March 1938. *Dynamenella menziesi*.

Sta. 163. Below the potato patches; a flat rocky shore, becoming dry at low tide, with many small rock pools; 17 March 1938. *Isocladus tristensis*, *Dynamenella menziesi*.

Sta. 164. Below potato patches; under stones of a gravel beach; 17 March 1938. *Iais pubescens*.

Sta. 165. Julia Point; from a pool which is isolated at low tide, potassium-cyanide poisoning, collected from sandy bottom with worms, brittle stars, etc., 20 March 1938. *Munna nana*.

Sta. 166. Shore below potato patches; flat rock plateau with many small rock pools; 23 March 1938. *Isocladus tristensis*, *Dynamenella menziesi*.

Sta. 167a. Shore below potato patches; flat rock plateau with many small rock pools, among algae in these intertidal rock pools; 23 March 1938. *Isocladus tristensis*.

Sta. 167b. Shore below potato patches; flat rock plateau with many rock pools, among algae in rock pools which remain covered at low tide; 23 March 1938. *Dynamenella menziesi*, *Paridotea apposita*.

St. 168a. Seal Bay; shore outside cave, among small stones, sheltered from the heaviest surf, collected at night; 23 March 1938. *Dynamenella menziesi*.

Sta. 168b. Seal Bay; as station 168a, but collected in the daytime; 23 March 1938. *Isocladus tristensis*.

Sta. 169. Seal Bay near Cave Point; from among *Lithothamnion*; 24 March 1938. *Dynamenella menziesi*, *Santia hispida*, *Joeropsis paulensis*.

Sta. 170. Seal Bay; from rock pools which are flooded by high tide; 24 March 1938. *Dynamenella menziesi*.

Sta. 171. Seal Bay; under boulders of the gravel beach; 24 March 1938. *Isocladus tristensis*, *Dynamenella menziesi*, *Paridotea apposita*.

SYSTEMATIC ACCOUNT OF THE SPECIES

SUBORDER ANTHURIDEA

Anthuridae

Tristanthura new genus

Diagnosis. Distinct eyes are present. The first six somites of the peraeon are of nearly equal size, each is provided with a pair of peraeopods. The upper surface is smooth. The seventh peraeon somite is very short and narrow and bears no legs at all. The first five somites of the pleon are fused into a single segment without any trace of suture lines. The telson is elongate, and well developed, it is not splayed or indurated. There are no statocysts. The mandibles have no palp. The maxilliped consists of a single free article and an epipod, there is no trace of a palp or of segmentation. The first three legs are subchelate.

The present new genus resembles the genera *Cruregens* Chilton, 1882, and *Colanthura* Richardson, 1902, in having (a) the seventh peraeon somite short and narrow, and without appendages, (b) the maxilliped consisting of a single free article, and (c) the mandibles without a palp. *Hyssura* Norman & Stebbing, 1886, it is true, also lacks the seventh peraeopods, but the seventh peraeon somite is well developed, the maxilliped has a one-segmented endopod and a three-segmented exopod, and the mandible possesses a palp. From all three genera *Tristanthura* differs by the fused first five pleon somites, which in *Colanthura*, *Cruregens* and *Hyssura* are distinct. Genera like *Cyathura* Norman & Stebbing, 1886, *Mesanthura* Barnard, 1914, and *Skuphonura* Barnard, 1925, in which the first five pleon somites are fused, have the seventh peraeon somite well developed and provided with a pair of peraeopods, the mandible has a palp, and the maxilliped is formed of several articles.

The fact that the present genus has modified mouthparts, that the statocysts are absent, that all first three legs are subchelate and that the telson is not splayed or indurated, places it in Barnard's (1925) section B of the family Anthuridae.

Type species (and only species known so far): *Tristanthura barnardi* new species.

Tristanthura barnardi new species

Paranthura sp. Barnard, 1965, Ann. South African Mus., vol. 48, p. 197.

Norwegian Scientific Expedition.

Tristan da Cunha Island: Julia Point (Sta. 47, 1 specimen; Sta. 68, 15 specimens, two of which are gravid females; Sta. 71, 1 specimen; Sta. 74, 1 specimen), Seal Bay (Sta. 55, 1 specimen).

Nightingale Island: near landing place (Sta. 94, 4 specimens, a subadult female of this group is the holotype; Sta. 112, 1 specimen), north-east side of the island (Sta. 88, 2 specimens), east of landing place (Sta. 111, 6 specimens).

Stoltenhoff Island: landing place on north side (Sta. 113, 9 specimens, one of which is a gravid female).

Inaccessible Island: Blenden Hall (Sta. 146, 1 specimen; Sta. 160g, 1 specimen), near cultivated area in the north-eastern part of the island (Sta. 151, 1 specimen), east of North Point (Sta. 153, 1 specimen), south of East Point (Sta. 155, 2 specimens), South Point (Sta. 157, 1 specimen).

Description. The body is narrow and elongate; its dorsal surface is smooth, without keels or pits. The rostral process is short. The eyes are composed of about 14 ocelli. The first antenna consists of four articles, the second antenna of five. The mandible is elongate and simple, from a slightly broadened base it narrows into a long and slender styliform distal part; there is no palp, and no teeth can be seen. The first maxilla is also styliform, and is armed distally on one side with small saw-like recurved teeth. The second maxilla is likewise elongate, but wider than the two preceding mouth parts; it is more laminate and bears numerous hairs in the distal part. The maxilliped consists of a single free segment, which is elongate quadrangular in the basal two thirds and then rather abruptly narrows in the more elongate triangular distal part, which bears som stiff setae at the top; an oval epipod is present. The lower lip is an elongate oval unpaired organ which ends in two points that are separated by a narrow median fissure; the distal part is setose.

The first three pairs of peraeopods are subcheliform. The first is the largest. At the proximal angle of the palm a blunt thumb-like projection is present. The inferior margin of the propodus of the second and third peraeopods is armed with seven spines; each of these spines has a hair implanted in the middle of the proximal margin. The last three pairs of legs are ambulatory; they are of about equal length.

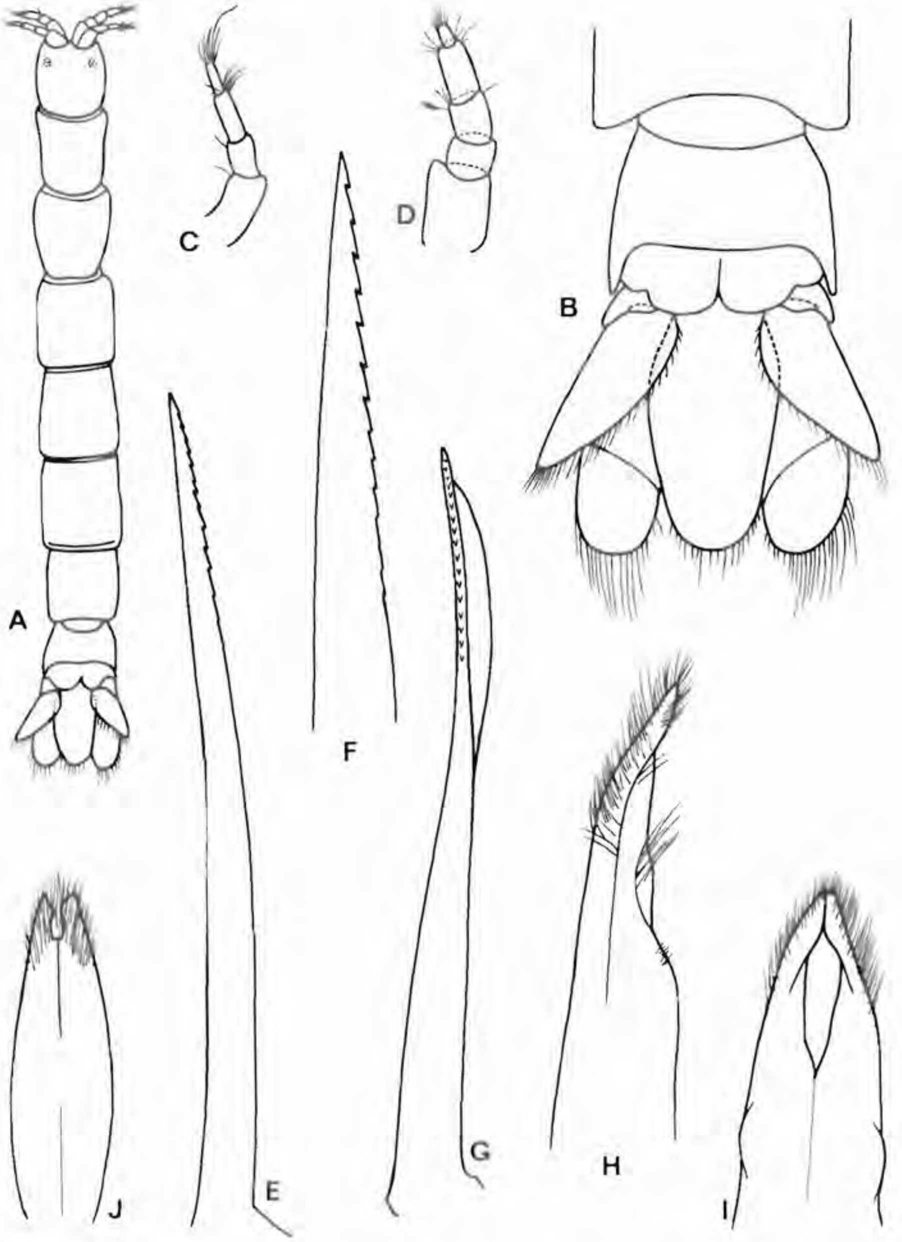

Fig. 1. *Tristanthura barnardi* new species. A, female (Sta. 94) in dorsal view; B, pleotelson and uropods of female (Sta. 94) in dorsal view; C, first antenna; D, second antenna; E, mandible; F, tip of mandible; G, first maxilla; H, I, second maxilla; J, lower lip. A-E, female from Sta. 94; F-J, ovigerous female from Sta. 68. A, x 9; B, x 27; C, D, x 16; E, G-J, x 180; F, x 420.

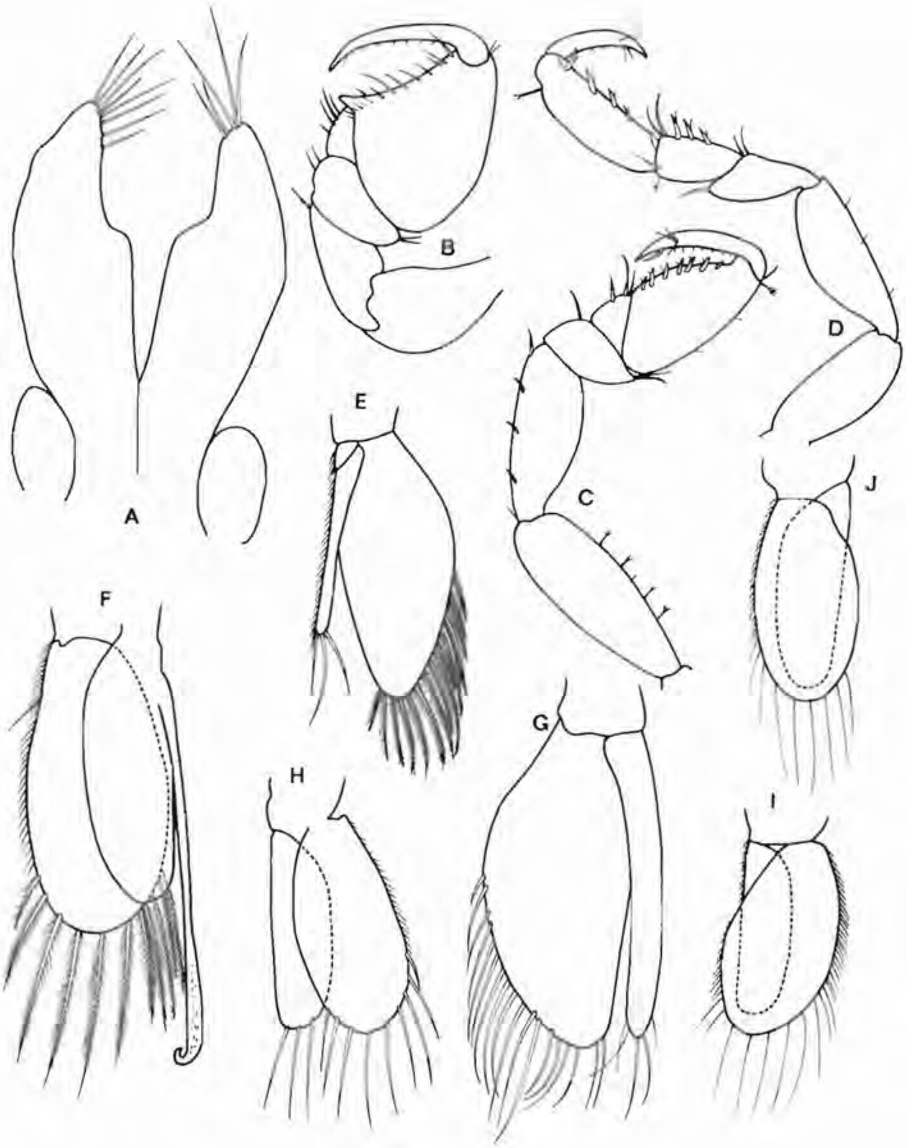

Fig. 2. *Tristanthura barnardi* new species. A, maxilliped; B, peraeopod 1, ♀; C, peraeopod 2, ♂; D, peraeopod 6, ♂; E, pleopod 1, ♂; F, pleopod 2, ♂; G, pleopod 1, ♀; H, pleopod 2, ♀; I, pleopod 3, ♀; J, pleopod 4, ♀. A, B, G-J, ♀ (B from Sta. 94; G-J, from Sta. 68); C-F, ♂ from Sta. 68. A, x 62; B, x 11; C-J, x 32.

Each bears four setigerous spines on the inferior margin of the propodus and three on that of the merus. The carpus is only half as long as the propodus, it is cylindrical and does not underride the propodus. Ovigerous females have four pairs of oostegites, viz., at the bases of the second to fifth peraeopods. The first pair of these oostegites is distinctly smaller than the others.

The endopod of the first pleopod of the male is shorter than the endopod, it is styliform and ends in three long and a few small bristles. The second male pleopod bears a long stylet which reaches far beyond the exopod and has the tip curved outward. In the female the endopod of the first pleopod is very narrow, but almost as long as the exopod, in the following pleopods the endopod is broader. The posterior dorsal margin of the last abdominal somite is incised in the middle and distinctly convex at either side of the median incision. The telson is elongate tongue-shaped, it is not splayed or indurated.

Size. The examined specimens measure 1.5 to 7 mm. The three ovigerous females are 6, 6.3 and 7 mm long; they carry respectively 8 juveniles, 23 eggs and 25 eggs in their broodpouches. The diameter of the eggs is 0.3 mm, that of the juveniles in the pouch 0.8 mm.

Colour. The species has quite a distinctive pattern of dark brown colour. There is a large brown spot on the anterior half of the head extending forward to the anterior margin of the head and sideways including the eyes. Small dark chromatophores are present on the peraeon somites near the bases of the legs, while in the fourth to sixth peraeon somites there are moreover some small scattered chromatophores on the rest of the dorsal surface. A very distinct broad transverse band of dark chromatophores extends over the fused pleon somites. Some specimens give a general dark brown impression. Barnard (1965, p. 197) described the colour of his specimen as follows: "Pale yellowish, a dark patch on front of head, and a dark band across pleon, faint speckling on the peraeon segments, eyes black."

Distribution. The species proves to be quite common in the Tristan Archipelago, where it was found by the present expedition on Tristan da Cunha itself, and on the islands Nightingale, Stoltenhoff and Inaccessible. Barnard (1965) reported it from Gough Island, where he obtained a young specimen at Dell Rocks (from a large pool at lower tide level, which is cut off from the sea for an hour or so per day if the sea is calm). The present material was collected in the tidal zone (like Barnard's specimen) and in depths down to 40-60 meters. It was found among algae, Lithothamnion and under rocks.

Remarks. Barnard (1965, p. 197) referred a juvenile Anthurid from Gough Island to *Paranthura* sp. He described it as having only six peraeon segments and 6 pairs of legs, styliform mouth parts and a fifth leg in which the carpus does not underride the propodus. These characters and also Barnard's above quoted description of the colour of his specimen, leave not the least doubt that his specimen belongs to the same species as ours.

It is a great pleasure to dedicate this new species to the late Dr. Keppel H. Barnard of Cape Town, who has done so much to further the knowledge of the Isopoda of the South African region, and who was the first to give a more or less detailed account of Isopods of the Tristan da Cunha area. He was one of the last allround zoologists who covered many areas (Fishes, Molluscs, practically all Crustacea, etc.) and excelled in all these fields.

Eisothistos minutus new species

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 47, 1 specimen, holotype).

Inaccessible Island: near the cultivated area in the north-eastern part of the island (Sta. 151, 1 specimen).

Description. The present description is not as complete as it should be. The two specimens present here are both very small, less than 1 mm long, fragile, and difficult to dissect. In spite of the small size, the specimens seem well developed and show no juvenile characters; they are therefore considered adult.

The body shows the long vermiform shape typical for the genus. No dorsal keels were observed on it. The cephalon is distinctly shorter than any of the peraeon somites, it has a short rostral process. The eyes are indistinct and consist of about 5 ocelli. The first antennae are slender and are about as long as the cephalon and first peraeon somite combined. They consist of 10 articles, the fourth of which is the longest, the last one being very short. The second antennae are about

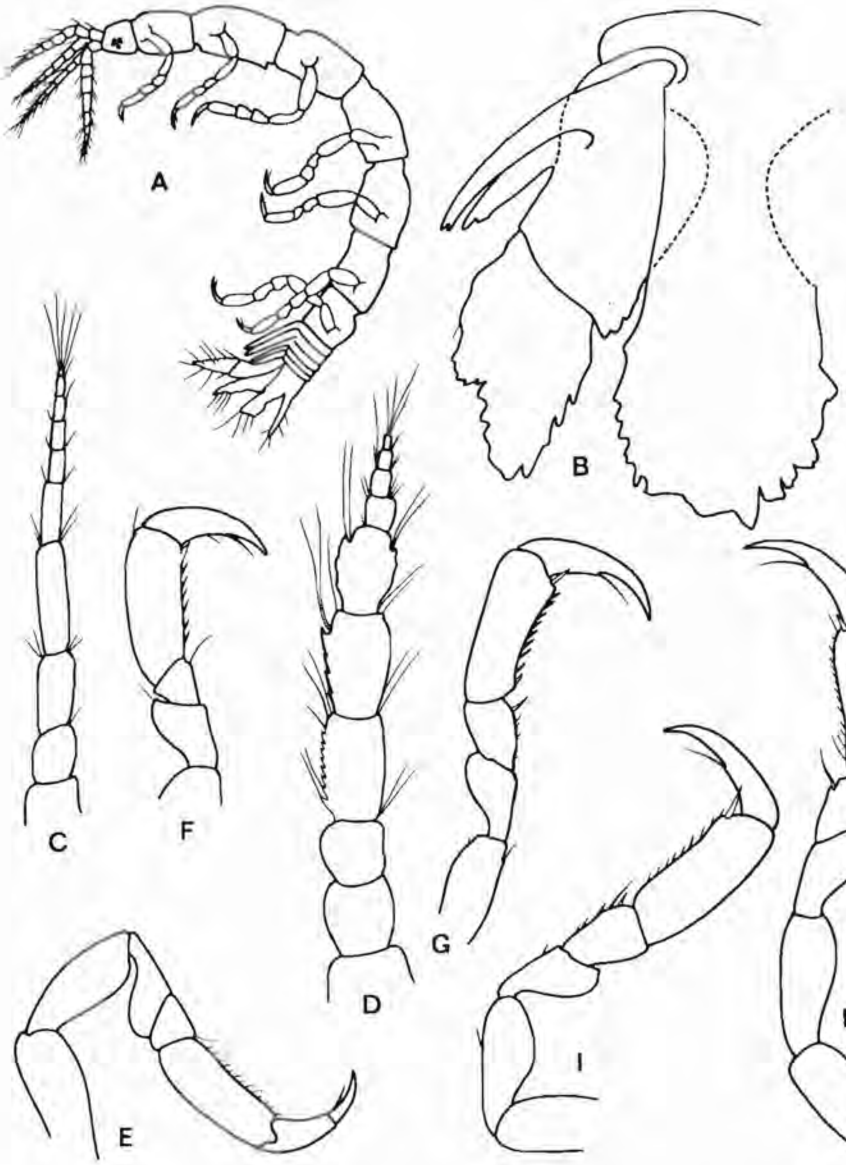

Fig. 3. *Eisothistos minutus* new species. A, animal in lateral view; B, telson and uropod in dorsal view; C, first antenna; D, second antenna; E, peraeopod 1; F, peraeopod 3; G, peraeopod 4; H, peraeopod 6; I, peraeopod 7. A-D, holotype; E-I, paratype. A, x 54; B, x 216; C-I, x 90.

as long as the first, but distinctly broader. They consist also of 10 articles, the fourth and fifth of which, and perhaps also the sixth are serrate on one side.

All seven peraeon somites are well developed and provided with a pair of legs. The second, third, and fourth peraeon somites are somewhat longer than the others. None of the legs is subchelate, the first pair does not differ in this respect from the following. The dactylus is slightly shorter than or almost as long as the propodus; its lower margin bears a distinct hair slightly before the middle. The propodus is twice or slightly more than twice as long as high, being thereby less slender than in *E. antarcticus* Vanhöffen.

All pleon somites are distinctly separated; they are all very short, being of about the same length. The telson is elongate, and only slightly broader distally than proximally. The distal margin is distinctly serrate; in the figured specimen these serrations are evidently somewhat damaged. The inner distal angle of the uropodal protopod and the margin of the endopod are irregularly serrate. The exopod of the uropod is visible as a narrow elongate process on the protopod; it ends in two teeth. The protopod seems to have a second similar process laterally, the nature of this process is not clear. As far as could be made out, the surface of the telson does not show any teeth or keels.

Size. The two specimens are 0.8 and 0.9 mm long.

Colour. The specimens, which are preserved in alcohol, have no colouration anymore. The eyes show no pigment.

Distribution. *E. minutus* was found in depths between 0 and 5 m; one of the specimens was obtained from *Lithothamnion* that was broken open.

Remarks. So far only four species of the genus *Eisothistos* were known: *E. vermiformis* Haswell (1884) from New South Wales, Australia; *E. atlanticus* Vanhöffen (1914) from the Cape Verde Islands and the West Indies; *E. antarcticus* Vanhöffen (1914) from the Antarctic (66°2'9"S 89°38'5"E and 77°5'S 164°17'E), and *E. crateris* Kensley (1976) from St. Paul Island, S. Indian Ocean. All these species are larger than the present one: *E. vermiformis* is 12 mm long, *E. atlanticus* 5 mm, *E. antarcticus* 4 mm, and *E. crateris* 3 mm. In the shape of the serrated telson the present species resembles *E. antarcticus*, *E. crateris* and *E. atlanticus*, and differs from *E. vermiformis* where the margin of the telson is only crenulate. In the latter species as well as in *E. antarcticus* and

E. crateris the telson shows a median keel, which in *E. antarcticus* and *E. crateris* bear spines; in *E. minutus* no keel or spines are seen on the telson. In *E. antarcticus* the legs are distinctly more slender than in *E. minutus*, while in the latter species the second antennae are also much more robust. In *E. atlanticus* the exopod of the uropod is much wider than in *E. minutus* and has the whole margin dentate. *E. crateris* differs from the present species most distinctly by having the first three abdominal somites much larger than the last two, which are partly or entirely fused. Also the first antenna is more slender in *E. crateris*, with the fourth article almost twice as long as the third (in Kensley's, 1976, account of *E. crateris*, the descriptions of the first and second antennae have been interchanged, the figures are correct). *E. vermiformis* is a littoral species that was found to inhabit worm tubes of the genus *Vermilia*. Also *E. atlanticus* is a species from shallow water (up to 10 m depth); *E. crateris* was found in rock scrapings, consisting mostly of sponges and bryozoans, from the upper infra-littoral. *E. antarcticus*, on the other hand, was obtained from far greater depths (255 and 385 m).

SUBORDER FLABELLIFERA

Anuropodidae

Anuropus aeronautus new species

Norwegian Scientific Expedition

Nightingale Island: from the stomach of an albatross breeding on the island, *Diomedea chlororhynchos* Gmelin, 3 February 1938, 1 male specimen.

In order to ascertain what food was brought by the adult albatrosses, *Diomedea chlororhynchos*, to their young, the biologists of the Norwegian Scientific Expedition to Tristan da Cunha collected the stomach contents of the young after they had been fed by the adults. The young which had just received their food were taken by the legs and held upside down. By patting them on their stomach they could be made to disgorge the food, which then was taken by the zoologists and preserved for further study. Apart from squid and fish, a number of Crustacea were found in this material, viz., big Decapod and Mysid shrimps of the genera *Notostomus*, *Charalaspidum* and *Gnathophausia* (see Holthuis & Sivertsen, 1967, pp. 32, 34, 36-41), the Amphipoda *Eurythenes* (Lichtenstein) and *Hyale grandicornis* (Kröyer) (see Stephensen, 1949, pp. 3, 33) and a single Isopod, which proved to belong to an undescribed species of the deep sea genus *Anuropus*. This species is now described here. Though the specimen is somewhat damaged, it is sufficiently complete to recognize it as different from the three known species of the genus and to describe its most important features.

Description. The cephalon is 2.5 to 3 times as wide as long. The anterior margin is deeply emarginate in the middle and slightly convex laterally. The lateral margins also are convex. The posterior margin is somewhat concave in the middle, being more convex laterally. The median length of the cephalon thereby is less than 4/5 of the greatest length. No eyes are visible. The dorsal surface of the somite is rather evenly convex. The rostrum is about equilaterally triangular with the sides slightly convex, when seen from above. The tip is curved somewhat down and the upper surface is shallowly grooved longitudinally. The rostrum by far fails to meet the clypeus.

The first peraeon somites show dorsally a faint longitudinal median carina, which becomes more indistinct in the more posterior somites. The lateral margin of the first peraeon somite is somewhat produced both anteriorly and posteriorly. The anterior process is triangular with a broadly rounded top. The posterior process is smaller and shows a deep triangular pit near the posterior margin of the somite. The epimeral plates are distinct in the second to seventh somites. The first three are triangularly produced posteriorly and end in a rounded top; their margins are elevated. They are all distinctly longer than wide, just like the fourth and fifth plates. In the fourth and fifth the posterior angle is wider and more rounded, especially in the fifth. The posterior half of the sixth epimeral plate is almost circular with only a blunt posterior angle.

There are five free pleon somites. These are slightly elevated in the middle, a feature which is most distinct in the anterior ones. The epimera are directed posteriorly. The top of the first is broadly rounded, those of the following somites become narrower. The ventral margin of the epimera is somewhat elevated. The telson is elongate

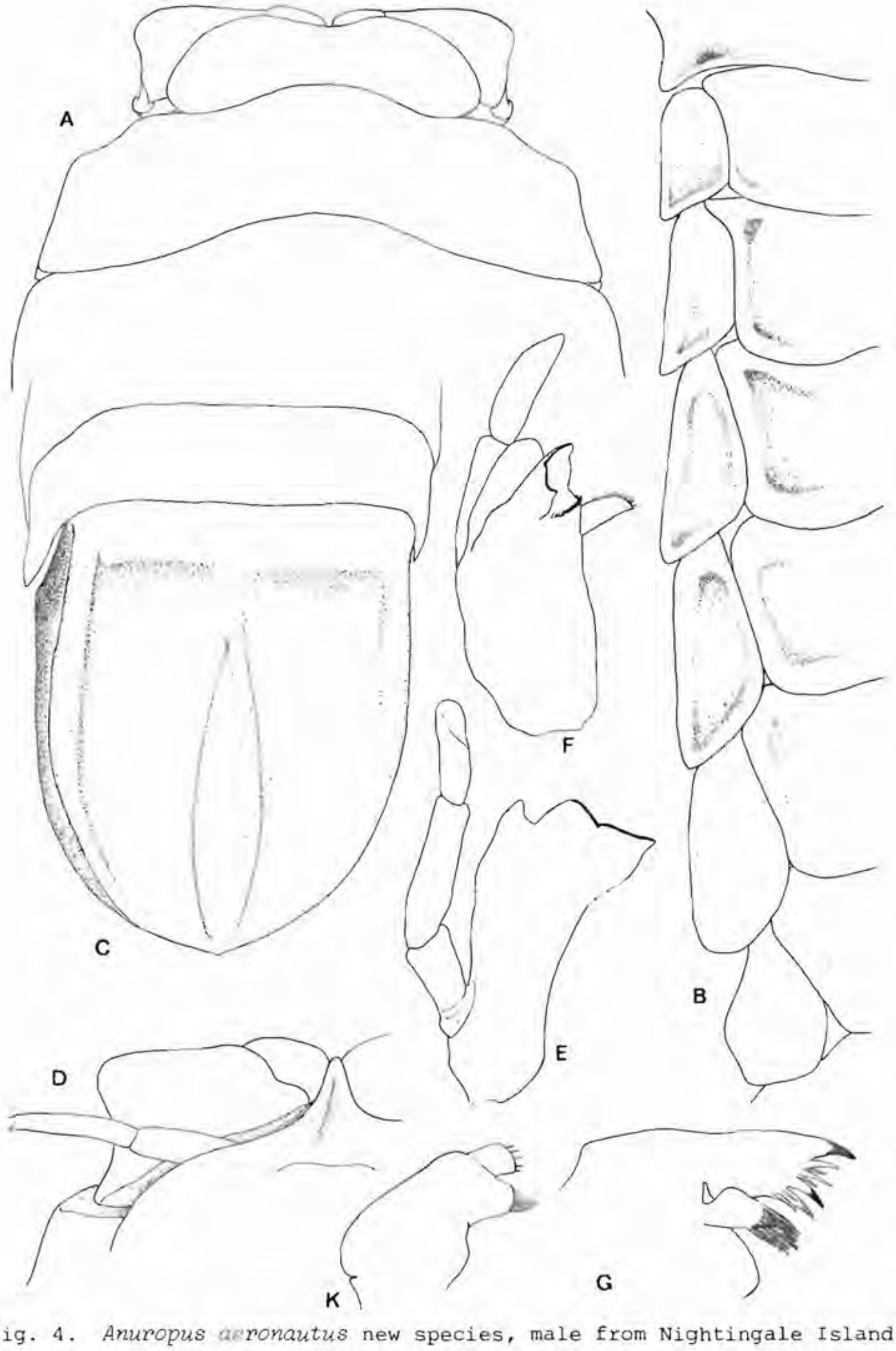

Fig. 4. *Anuropus aeronautus* new species, male from Nightingale Island. A, cephalon, first antennae, and first peraeon somite in dorsal view; B, second to seventh peraeon somites in lateral view; C, telson in oblique dorsal view; D, first antenna and part of second antenna, in situ, ventral view; E, right mandible, ventral view; F, right mandible viewed from inside; G, first maxilla; H, second maxilla. A-D, x 2,5; E-H, x 5.

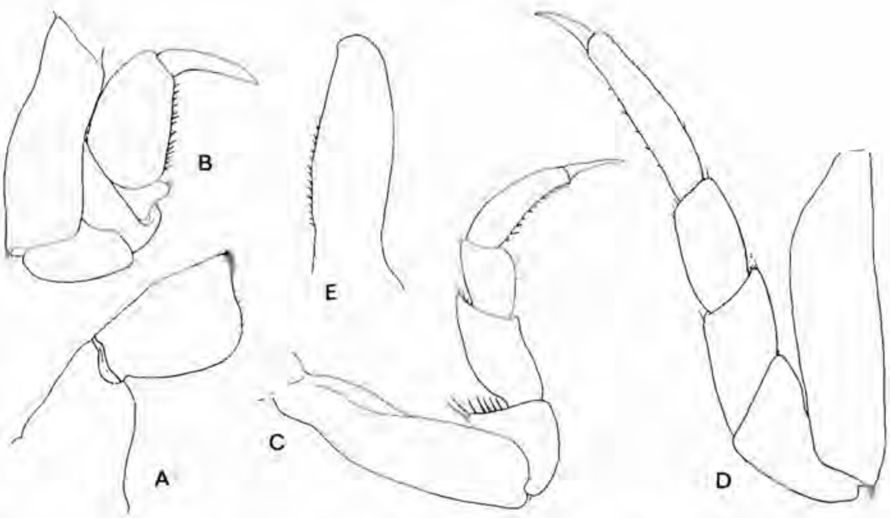

Fig. 5. *Anuropus aeronautus* new species, male from Nightingale Island. A, maxilliped; B, first peraeopod; C, second peraeopod; D, fourth peraeopod; E, penis. A, E, x 5; B-D, x 2.5.

tongue-shaped, about 4/5 as wide as long. The posterior margin is evenly convex with an indication of a small rounded median tip. The lateral margins are convex, the widest part being behind the middle. The basal part of the telson is somewhat elevated, sloping rather suddenly down posteriorly. In the lowered part there are two indistinct submedian carinae, which converge both anteriorly and posteriorly. The lateral margins are formed by broadly rounded carinae, which externally fall rather abruptly off to the true lateral margins; this vertical sidewall of the telson is somewhat concave.

The first antenna consists of two large swollen articles. The basal article is cup-shaped, the distal is triangular in transverse section with a high dorsal carina, and two ventral carinae: one anterior and one posterior. The distal surface of the article is triangular and flattened, with a produced basal rim. The two first antennae touch each other in the middle and reach laterally beyond the cephalon.

Both second antennae are broken, one at the fifth, the other at the fourth article. The first four articles reach laterally about to the end of the first antenna. The proximal two articles are short, the two following much longer; the fourth measures about 4/5 of the length of the third.

The right and left mandibles are similar. The incisor process has a dark coloured cutting edge, which is slightly notched in the middle; there is a bluntly triangular uncoloured lobe distally of the cutting edge. Below the incisor process is a transverse ridge which bears a number of spinules. The molar process is small, flattened and triangular, its upper margin bears some spinules. The palp is well developed and consists of three distinct articles. The first maxilla has the upper lacinia ending in three very strong and sharp spines, which are of a brown colour distally; between these strong spines there are about six smaller uncoloured ones. The lower lacinia bears four long plumose setae and a short naked seta. The second maxilla shows two blunt laciniae, the upper of which bears a few spinules, the lower some setae. The maxilliped consists of two articles; the distal is irregularly quadrangular.

The first peraeopod is a cheliped. The subchela consists of a slender dactylus and a distinctly widened propodus. In the second and third peraeopods the subchela is indistinct, while the last legs are truly ambulatory.

The two penes are elongate, being fully three times as long as wide.

The pleopods and uropods are broken in this specimen.

Size. The only specimen, a male, has a total length of 49 mm.

Remarks. So far three species have been reported of this genus, *Anuropus branchiatus* Beddard (1886), *A. antarcticus* Hale, 1952, and *A. bathypelagicus* Menzies & Dow, 1958. With *A. antarcticus*, the present species differs from the other two by the elongate telson which is 1.2 times as long as wide. The epimeral plates of the peraeon somites are quite different from those of *A. bathypelagicus*, where they are short and pointed (cf. Menzies & Dow, 1958, Figs. 1, 3; Gordon, 1958, Fig. 3). In the new species these plates are narrower than in *A. branchiatus* (cf. Gordon, 1958, Fig. 4), and in this feature the species also resembles more *A. antarcticus*.

In *Anuropus antarcticus* the new species evidently finds its closest ally. It differs from that species, however, by having the front of the cephalon deeply emarginate in the middle, by the presence of submedian carinae on the telson, by the shape of the mandible, in which the molar process is not movable, and by the stronger and coloured spines on the upper lacinia of the first maxilla.

Three of the four species of *Anuropus* are known from a single specimen only: the type of *A. branchiatus*, which was found off New Guinea in a depth of about 1960 m, the type of *A. antarcticus*, found on the pack ice at 66°23'S 73°16'E in the stomach of a Snow Petrel, *Pagodroma nivea* (Forster), and the present specimen. *A. bathypelagicus* was found at 5 different localities off California in depths of 915, 2140 and 2900 m and between 0 and 1245 m. Barham & Pickwell (1969), who did not identify their material beyond the generic level, showed that at least some specimens of this genus live in the umbrella of large mid water jellyfishes, and they made interesting in situ observations of the relation of the isopods with the scyphozoan *Deepstaria enigmatica* Russell, 1967; their material originated from off Baja California (24°38.9'-32°25'N 113°2.5'-117°30'W) and from the central northern Pacific (25°37.9'N 178°7.3'W and 29°6.8'N 178°5.5'W), the only definite depth record was 723 m, with a doubtful sighting at 300 m.

Although most of the definite depth records for species of this genus are from considerable depths, the fact that species like *A. antarctica* and the present new species are eaten by sea birds suggests that they come up to the surface occasionally.

All the species of this genus are quite large: the type of *A. branchiatus* measured 70 mm, that of *A. antarcticus* 60 mm, while the described material of *A. bathypelagicus* varied between 41 and 70 mm. The material reported upon by Barham & Pickwell had lengths of 18, 19, 47, 60 and 80 mm. The present specimen thus is of medium size.

Aegidae

Aega deshaysiana (H. Milne Edwards)

Rocinela Deshaysiana H. Milne Edwards, 1840, Hist. nat. Crust., vol. 3, p. 243.

Norwegian Scientific Expedition

Tristan da Cunha Island: found in a fishing boat with which Snoek (*Thyrsites atun* (Euphrasen, 1791)) and Fivefinger (*Acantholatris monodactylus* (Carmichael, 1818)) had been caught; 13 January 1938; 1 female specimen.

The single specimen agrees rather well with the published descriptions of this species.

S i z e . The specimen measured 33 mm in total length.

D i s t r i b u t i o n . This species, which Nierstrasz (1918, p. 107, 108; 1931, p. 182) synonymized with *Aega antillensis* Schioedte & Meinert, 1879, seems to have an almost circumtropic distribution (Antilles, Mediterranean, Azores, N.W. Africa, Cape Verde Islands, Tristan da Cunha, Natal, St. Paul Island, Seychelles, Japan, Australia, Hawaii), but evidently is nowhere common. Some of the records seem rather doubtful. Also Kensley (1976, p. 290, under *Aega 'antillensis'*) expressed doubt as to the homogeneity of the specimens so far assigned to *Aega antillensis*. A thorough study of the species based on extensive material from numerous localities is clearly called for. The type locality is "la Méditerranée".

The host of the present specimen is unknown as it was found unattached in a fishing boat that had just returned from a fishing trip. During that trip two species of fish, *Thyrsites atun* and *Acantholatris monodactylus*, were taken. At the time of collecting it was thought most likely that the isopod was a parasite of the last named, more common species of fish, but it is interesting to note that Kensley (1976, p. 290) in his report on Isopoda from St. Paul Island (southern Indian Ocean) dealt with a specimen of this species (under the name *Aega antillensis*) found "on *Thyrsites atun*".

The depth at which the Tristan da Cunha specimen was taken is not known. *Acantholatris* is a bottom fish living in coastal waters down to about 50 m (Sivertsen, 1946, p. 30); *Thyrsites* is an oceanic form (Sivertsen, 1946, p. 25). Nierstrasz (1931, p. 182) indicated the depth for the present species as 40-416 m.

Cymothoidae

Livoneca raynaudii H. Milne Edwards

Livoneca Raynaudii H. Milne Edwards, 1840, Hist. nat. Crust., vol. 3, p. 262.

Norwegian Scientific Expedition

Tristan da Cunha Island: Little Beach (found in a fishing boat with which Fivefinger (*Acantholatris monodactylus* (Carmichael, 1818)).

Snoek (*Thyrsites atun* (Euphrasen, 1791)) and Soldier (*Sebastichthys capensis* (Gmelin, 1788)) had been caught; 13 January 1938; 2 ovigerous females. From the gills of Fivefingers; 18 January 1938; 2 males, 1 gravid female. From the gills of six Fivefingers; February 1938; 4 males and 6 females (5 ovigerous or gravid). From the gills of a Fivefinger; 23 March 1938; 1 ovigerous female).

Size. The males are 9 to 19 mm long, the females 20 to 47 mm. The length of the ovigerous and gravid females varied between 20 and 40 mm. The eggs had a diameter of about 2 mm; the pouch young reached a length of 5 mm.

Distribution. The species has a wide range covering the South Atlantic as well as the Indian and Pacific Oceans. Apart from localities in the antiboreal and nearby regions (Tristan da Cunha, South Africa, St. Paul Island, Australia, New Zealand, South Africa), the species is also found in Japan (see also below). The present specimens were all found on the gills of *Acantholatris monodactylus* (Carmichael), with the exception of two that were found loose in a fishing boat with which several species of fish, among which *Acantholatris*, had been caught. Kensley (1976, p. 290) reported one of his specimens from St. Paul Island (southern Indian Ocean) to be found "on operculum of fish, *Latris lineata*" (p. 271). Barnard (1920, p. 358) cited specimens "taken from the mouth and gills of a Sucker-fish (*Chorisochismus dentex* Pall.) caught at low water near Cape Town". *Acantholatris* is one of the most common coastal fishes of Tristan da Cunha and is frequently caught with handlines from the coast; the fishermen catch it in depths from a few meters down to about 50 m (Sivertsen, 1946, p. 30). The above cited records by Barnard (1920) and Kensley (1976; *Latris lineata* (= *Mendosoma lineatum* Guichenot), is a coastal species) likewise indicate that the species inhabits shallow water. The only record of the species from greater depths known to us is by Whitelegge (1901, p. 236), who reported it from 32 to 78 fathoms.

Remarks. According to Richardson (1909, p. 89) *Livoneca epimerias* Richardson is very closely related to *Livoneca raynaudii*, but differs in the shape of the head and that of the epimera. One of us (Sivertsen) had the opportunity to compare our specimens from Tristan da Cunha with specimens of *L. epimerias* from Japan and New Zealand in the U.S. National Museum of Natural History, Washington D.C., as well as with specimens of *L. raynaudii* from New Zealand in the collection of the

Zoological Museum, Copenhagen. The differences between the New Zealand and Japanese specimens proved to be exceedingly small and most fell within the limits of variation of the species. Therefore it seems most likely that *L. epimerias* must be considered a synonym of *L. raynaudii*.

The generic name of the present species is often cited as *Lironeca*, but this is incorrect. Leach (1818, p. 351) headed the description of his new genus as follows: "Genre XIX^e. Livonèce (*Livoneca*)". On the same page the spelling Livonēce is used in the key to the genera, while the three species described on the next page (p. 352) are given the French name Livonèce and the latin name *Livoneca*. As the spelling *Livoneca* is consistently used in the original publication and as no derivation of the name is given, there is no clear evidence in the publication of "an inadvertent error, such as a lapsus calami, or a copyist's or printer's error" (International Code of Zoological Nomenclature, Art. 32 a ii), and thus the spelling is not be emended. Of course, it is a well-known fact that a number of generic names given by Leach (1818), viz., *Nelocira, Cirolana, Conilera, Rocinela, Canolira, Anilocra, Olencira, Nerocila*, are anagrams of the name Caroline or Carolina (whether or not meant as a compliment to the lady in question is not known). Therefore it is indeed most likely that *Livoneca* was meant to be *Lironeca*, but this circumstantial evidence is not sufficient to justify the emendation, which was made for the first time by White (1847, p. 109). Apart from the eight (or nine if *Livoneca* is counted also) anagrams made by Leach, several were later published by other authors: *Cilonera* White & Doubleday, 1843; *Corilana* Kossmann, 1880; *Renocila* Miers, 1880; *Alcirona* Hansen, 1890; *Lanocira* Hansen, 1890; *Nalicora* Moore, 1902; *Orcilana* Nierstrasz, 1931, and perhaps others, showing that Leach's little joke had a contagious effect. *Neloreia* Agassiz, 1846, probably does not belong here, but is just an erroneous spelling of *Nelocira*.

Stebbing (1910, p. 425) pointed out that *Livoneca Rafineskii* Leach (1818, p. 352) probably is a synonym of *L. raynaudii*, but that since "the place of origin is not known for the species named by Leach, the name remains obscure". White (1847, p. 109) in his list of the Crustacea of the British Museum, in which at that time Leach's collection was incorporated, mentioned two specimens of "*Lironeca Raffineskii*" from "Cape of Good Hope?". If these specimens actually are from the Leach collection the identity of *L. rafinеskii* and *L. raynaudii* seems even more likely, in which case Leach's name has priority over that by H. Milne Edwards.

Sphaeromatidae

This family is represented in the present collection by three species, one of which (*Isocladus tristensis*) belongs to the group Sphaeromatidae Hemibranchiata, the two others to the Sphaeromatidae Eubranchiata. The distinctions between these two groups have been discussed by Hansen (1905, who first recognized these subdivisions of the family Sphaeromatidae), and Menzies (1962, pp. 128, 129).

Hansen (1905, pp. 106-109) gave a key to the genera of Eubranchiata. The first character used there by Hansen is the presence of an articulation on pleopod 3. Menzies (1962, pp. 134, 141) divided the Eubranchiata into two sections, which he characterized as follows. Section I contains the "Eubranchiates with the exopod of the third pleopod jointed", while Section II is formed by "Eubranchiate sphaeromids in which the exopods of the fourth and fifth pairs of pleopods are jointed" (nothing is said here about the third pleopods). Menzies Section I, however, contains all the genera that Hansen (1905) characterized as having "Exp. of plp.^{3} unjointed", while Section II evidently is the group of which Hansen (1905, p. 108) stated "Exp. of plp.^{3} with an articulation rather near the end". We found Hansen to be correct and followed him.

Sphaeromatidae Hemibranchiata

Isocladus tristensis (Leach, 1818)

Sphaeroma Carmichael, 1818, Trans. Linnean Soc. London, vol. 12, p. 498.

Sphaeroma Tristense Leach, 1818, Dict.Sci.nat., vol. 12, p. 345; H. Milne Edwards, 1840, Hist.nat.Crust., vol. 3, p. 207; White, 1847, List Crust.Brit.Mus., p. 103.

Sphaeroma tristense Desmarest, 1825, Consid.gén. Classe Crust., p. 300; Hansen, 1905, Quart.Journ.microsc.Sci., vol. 49, p. 117.

Exosphaeroma tristense Tattersall, 1913, Trans.Roy.Soc.Edinburgh, vol. 49, p. 882, pl. fig. 1.

Isocladus tristensis Barnard, 1914, Ann. South African Mus., vol. 10, p. 384, pl. 33 Fig. B; Stephensen, 1927, Vidensk. Medd. naturhist. Foren. København, vol. 83, p. 363; Nierstrasz, 1931, Siboga Exped.

Mon., vol. 32 pt. c, p. 197; Barnard, 1955, Ann. South African Mus., vol. 43, p. 62; Barnard, 1965, Ann. South African Mus., vol. 48, p. 197.

not *Sphaeroma tristense* Krauss, 1843, Südafrik. Crust., p. 65; Stebbing, 1910, Ann. South African Mus., vol. 6, p. 427 (= *Exosphaeroma kraussii* Tattersall, 1913).

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Tristan da Cunha Island: near Little Beach (Sta. 12, 1 specimen), Seal Bay (Sta. 55, 1 juvenile; Sta. 168b, 1 specimen; Sta. 171, 10 specimens of which 7 males), near potato patch (Sta. 163, 6 juveniles; Sta. 166, 1 juvenile; Sta. 167a, 2 specimens), Julia Point (Sta. 64, 22 specimens; Sta. 65, 2 juveniles; Sta. 67, 53 specimens of which 17 males; Sta. 79, 7 specimens).

Nightingale Island: near landingplace (Sta. 87, 1 male; Sta. 90, 1 juvenile; Sta. 92, 63 specimens of which 5 males and 1 gravid female; Sta. 104, 17 juveniles), west of landing place (Sta. 105, 15 specimens of which 10 males, 3 ovigerous and 2 non-ovigerous females), east of landing place (Sta. 106a, 4 specimens; Sta. 106b, 74 specimens; Sta. 106d, 63 specimens; Sta. 107, 88 specimens; Sta. 117, 3 juveniles), Middle Island (Sta. 83, 151 specimens; Sta. 84, 22 specimens of which 1 male), Sea-Hen Rock at west side of Nightingale Id. (Sta. 100, 13 males, 6 females).

Stoltenhoff Island: landing place on the north side (Sta. 113, 1 male).

Inaccessible Island: near Blenden Hall (Sta. 125b, 1 female; Sta. 125c, 37 specimens of which 12 males; Sta. 128, 14 males, 69 females and juveniles; Sta. 132b, 19 specimens; Sta. 133, 1 specimen), south of East Point (Sta. 154, 1 juvenile), near cultivated area near Blenden Hall (Sta. 160a, 14 specimens of which 3 males; Sta. 160b, 8 juveniles; Sta. 160d, 27 females and juveniles; Sta. 160e, 2 juveniles; Sta. 160g, 15 specimens of which 1 male).

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Tristan da Cunha Island: Sta. 12B, 2 specimens; Sta. 51A, 28 specimens; Sta. 51B, 12 specimens; Sta. 51C, 38 specimens; Sta. 116D, 6 specimens.

Description. The original description of this species is very short, it is evidently based on a female or a juvenile male, and runs as follows (Leach 1818, p. 345): "Corps lisse: le thorax ayant son septième article à peine visible; le dernier de l'abdomen se terminant tout à coup en pointe obtuse, ayant à sa base deux tubercules alongés et peu distincts. Var. *a*: septième article du thorax simple". More complete and well illustrated descriptions are provided by Tattersall (1913), who had specimens from Gough Island, and by Barnard (1914), whose material came from Tristan da Cunha. Our material agrees quite well with these descriptions, although a few discrepancies are noted.

The number of articles in the flagella of the antennae is rather variable and changes with age. In small specimens (length about 2 mm) the first antenna has a flagellum of 4, the second antenna one of 8 articles; in a specimen of 5 mm these figures are 9-10 and 13-14 respectively, while in a specimen of 12 mm the flagellum of the first antenna shows 14 and that of the second 17 to 20 articles. The first antenna has each of the distal articles furnished with one or two olfactory setae, the last article carries these setae at the apex. In the second antenna each article has usually some setae distally.

In our material the third article of the mandibular palp measures 2/5 of the length of the second, while Barnard (1914) stated it to be a little longer than that article.

The number of hooked setae on the peduncle of the first, second and third pleopods may vary from 3 to 6; Barnard stated it to be 4.

Size. The largest male is 15 mm long. The size at which the medio-dorsal process of the seventh peraeon somite develops is quite different in different populations. In the samples from Stations 100 and 128, males of 8.5 and 9 mm have only a mere indication of this process, which is well developed in males of 12 and 14 mm. In the samples from Stations 64 and 125c, however, males of 8 and 7 mm respectively have the middorsal process fully developed, although others of about the same size have this process very small. The largest female in our material is 9 mm long, the ovigerous females are 7 to 8.5 mm in length. The eggs measure 0.5 mm, the young found in the broodpouches 0.7 mm.

Colour. Leach (1818, p. 345) described the colour of the species as follows: "Sa couleur est d'un gris cendré, tacheté de rouge. Les articles tachetés et leurs bords postérieurs colorés de rouge: les antennes ont leur dernier article rougeâtre". Barnard (1914, p. 385) stated "In spirit, dark brownish grey".

Distribution. *Isocladus tristensis* so far is only known from the Tristan da Cunha Archipelago and Gough Island. The records in the literature are: Tristan da Cunha (Leach, 1818; Carmichael, 1818; White, 1847; Barnard, 1914), Gough Island, 40°20'S 9°56'30"W (Tattersall, 1913), Glen Mouth, near Base (beside Half Way Cave), Dell Rocks, and from off Archway, all four localities at Gough Island (Barnard, 1965). The present material (922 specimens) was collected at the three main islands of the Tristan da Cunha Archipelago (Tristan da Cunha, Nightingale, and Inaccessible Islands) and the islands Stoltenhoff and Middle Island near Nightingale. The species is very common as shown by the great numbers collected. Already Leach (1818, p. 345) remarked that it was found "en grande quantité".

It is an inhabitant of the tidal zone, where it is commonly found in rock pools, under stones, among algae, etc. In three instances a few juveniles (five in all) were obtained in dredge hauls (5-10 m, 6-18 m, and 40 m deep). Tattersall (1913) reported it "from the shore and from floating weed", while Barnard's (1965) material was found among "beach debris" (Sta. A 27), in a large pool at lower tide level (Sta. A 47), in a pebble zone without pools (Sta. B 3), and in the stomachs of two Soldier Fish (*Sebastichthys capensis* (Gmelin)) (Sta. B 10).

Remarks. Menzies (1962, p. 129) synonymized the present species with *Sphaeroma calcarea* Dana, 1853, without giving his reasons for this. He used the name *Isocladus calcarea* (Dana, 1853) for the species, even though the epithet *tristensis* Leach, 1818, has priority over Dana's (1853) *calcarea* by 35 years. It is possible that, although Menzies included in the synonymy of *Isocladus calcarea* " *Isocladus tristensis* Leach, Barnard, 1914, p. 384 and synonyms" and notwithstanding the fact that Barnard's specimens came from Tristan da Cunha, Menzies was of the opinion that Barnard's specimens were different specifically from Leach's. This may explain why Menzies (1962, p. 130) under *Isocladus* sp. stated "I have not seen examples of *I. tristensis* (Leach)", and why he did include in the range of *Isocladus calcarea* "Tierra del Fuego, Chile, South Africa" and not Tristan da Cunha. Evidently he mistook Barnard's (1914) record of the present species as being based on South African rather than on Tristan da Cunha material; so far as we know, the genus has so far not been reported from South Africa. Menzies did not mention the occurrence of *Isocladus calcarea* at the Auckland Islands, whence it was reported with some doubt by Stephensen (1927, p. 363) as *Isocladus magellanicus* Richardson. We have been unable to compare our material directly with specimens from the Magellanic region (which is the type area of both *Sphaeroma calcarea* Dana and of *Isocladus magellanicus* Richardson), but a direct comparison with Stephensen's material from the Auckland Islands, present in the Copenhagen Museum, was performed by the senior author (Sivertsen). The New Zealand specimens were definitely found the be specifically different from *I. tristensis*. Among the most conspicuous characters distinguishing the Auckland from the Tristan da Cunha specimens the following can be mentioned: (1) the telson is distinctly longer and has two submedian carinae, (2) the inner ramus of the uropod is truncated, (3) in the adult male the process of the seventh peraeon somite is fairly short, not exceeding 2/3 of the length of the telson. Comparison of our material with Menzies' (1962, p. 129, Fig. 42 B-G) and Richardson's (1906, p. 14, Fig. 18) accounts shows the tip of the telson in the Magellanic specimens to be wider and that of the uropodal exopod distinctly truncated. A direct comparison of specimens from Tristan da Cunha and from southern South America might definitely settle the question whether or not the two forms are conspecific. For the time being we prefer to treat them as distinct species.

The South African specimens that Krauss (1843) brought to the present species were recognized by Tattersall (1913) to belong to a distinct species, which he described as new under the name *Exosphaeroma kraussii*.

Sphaeromatidae Eubranchiata

Dynamenella menziesi new species

Dynamenella eatoni - Menzies, 1962, Lunds Univ. Arsskr., (n.ser.) sect. 2 vol. 57 no. 11, p. 135, fig. 44 (not *Dynamene eatoni* Miers, 1875).

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Tristan da Cunha Island: off Big Beach (Sta. 2, 1 specimen; Sta. 80, more than 40 specimens), near Little Beach (Sta. 12, 42 specimens; Sta. 27, 3 specimens; Sta. 77, more than 60 specimens), near Julia Point (Sta. 13a, c, d, e, more than 28 specimens; Sta. 15, 18 specimens; Sta. 16, 1 or more specimens; Sta. 46, 7 specimens; Sta. 47, 67 specimens;

Sta. 49, 1 specimen; Sta. 64, 1 specimen; Sta. 65, 1 or more specimens; Sta. 68, 2 specimens; Sta. 70, 18 specimens; Sta. 73, 1 or more specimens; Sta. 78, 60 specimens), near Sandy Point (Sta. 39b, 84 specimens; Sta. 40, 5 specimens; Sta. 41, 1 or more specimens), Seal Bay (Sta. 51, 2 specimens; Sta. 52, 9 specimens; Sta. 168a, 3 specimens; Sta. 169, 111 specimens; Sta. 170, 8 specimens; Sta. 171, more than 50 specimens), off potato patch (Sta. 162a, 2 specimens; Sta. 163, 20 specimens; Sta. 166, 1 or more specimens; Sta. 167b, 74 specimens).

Nightingale Island: Middle Island (Sta. 83, 1 specimen; Sta. 85, more than 30 specimens; Sta. 86, 4 specimens), near landing place (Sta. 87, 1 or more specimens; Sta. 90, 48 specimens; Sta. 93, more than 150 specimens; Sta. 103, more than 60 specimens; Sta. 108, more than 200 specimens; Sta. 112, more than 15 specimens; Sta. 117, more than 30 specimens), Sea-Hen Rock at west side of Nightingale Id. (Sta. 101, 43 specimens), south side of the island (Sta. 109, 178 specimens; Sta. 110, more than 40 specimens), between Nightingale and Middle Islands (Sta. 118, 27 specimens).

Stoltenhoff Island: near landing place on north side (Sta. 113, 117 specimens; Sta. 114, 1 specimen; Sta. 116, 1 specimen).

Inaccessible Island: near Blenden Hall (Sta. 125b, e, more than 3 specimens; Sta. 127, 2 specimens; Sta. 127c, 1 specimen; Sta. 128, 1 specimen; Sta. 129, 30 specimens; Sta. 132, 7 specimens; Sta. 142, 9 specimens; Sta. 145a, 39 specimens; Sta. 145c, 53 specimens; Sta. 146, more than 50 specimens; Sta. 150, more than 20 specimens; Sta. 159, 8 specimens; Sta. 160, more than 50 specimens; Sta. 160a, 2 specimens), north-east side of the island (Sta. 151, 12 specimens), near North Point (Sta. 152, 1 or more specimens; Sta. 153, 39 specimens), near East Point (Sta. 155, 18 specimens), near South Point (Sta. 156, more than 25 specimens; Sta. 157, more than 50 specimens).

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Tristan da Cunha Island: Sta. 114A, 80 specimens.

Description. All peraeon somites are smooth dorsally. The dorsal surface of the pleon shows two low ovate elevations, which are distinct in dry specimens. The pleotelson is provided dorsally on each half with three longitudinal rows of tubercles; in a few specimens the arrangement in rows is obscured by that some of the tubercles are irregularly arranged. The elevations and tubercles are very distinct and well

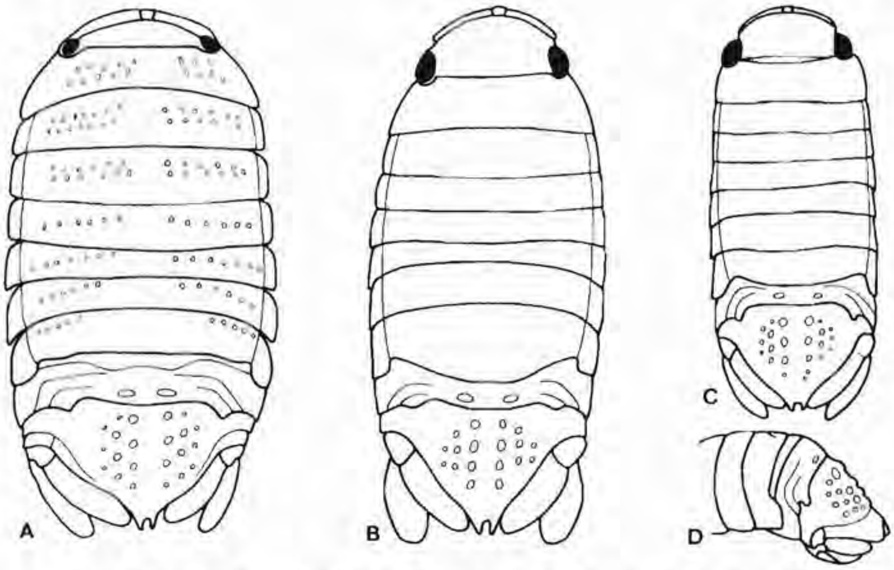

Fig. 6. *Dynamenella menziesi* new species. A, B, D, ♂; C ♀. A-C, specimen in dorsal view; D, abdomen in oblique lateral view. A, from Sta. 39b; B, C, from Sta. 78. A-D, x 5.

pronounced in the adult males, a little less so in ovigerous females, and are indicated only in juvenile specimens; in all cases they are most clearly visible when the specimens are dried. The tubercles of the inner row, 4 or 5 in number, are largest, those of the two outer rows being smaller; the outer rows consists of 1 to 4 tubercles each. The pleotelson ends in two submedian teeth, which in the males are larger and separated by a deeper emargination, than in the females and juveniles.

The first antenna consists of 15 articles, of which the first 4 form the peduncle, the last 11 the flagellum. The last article of the peduncle and all but the last article of the flagellum are furnished with two sensory filaments each; the last flagellar article is provided with setae at the top. The second antenna is 1.5 times as long as the first and consists of 22 articles, of which the distal 18 form the flagellum.

The anterior lip is heart-shaped with a blunt posterior point. The posterior lip consists of two truncated lobes which are rather pubescent and show three short filaments at either anterolateral angle. The mandibular palp is three-articulated; the last article is furnished with 18 brush-like setae. The first maxilla bears some eight teeth at the distal margin of the outer lobe, that of the inner lobe shows four brush-like setae. The second maxilla bears 14 setae at the distal margin

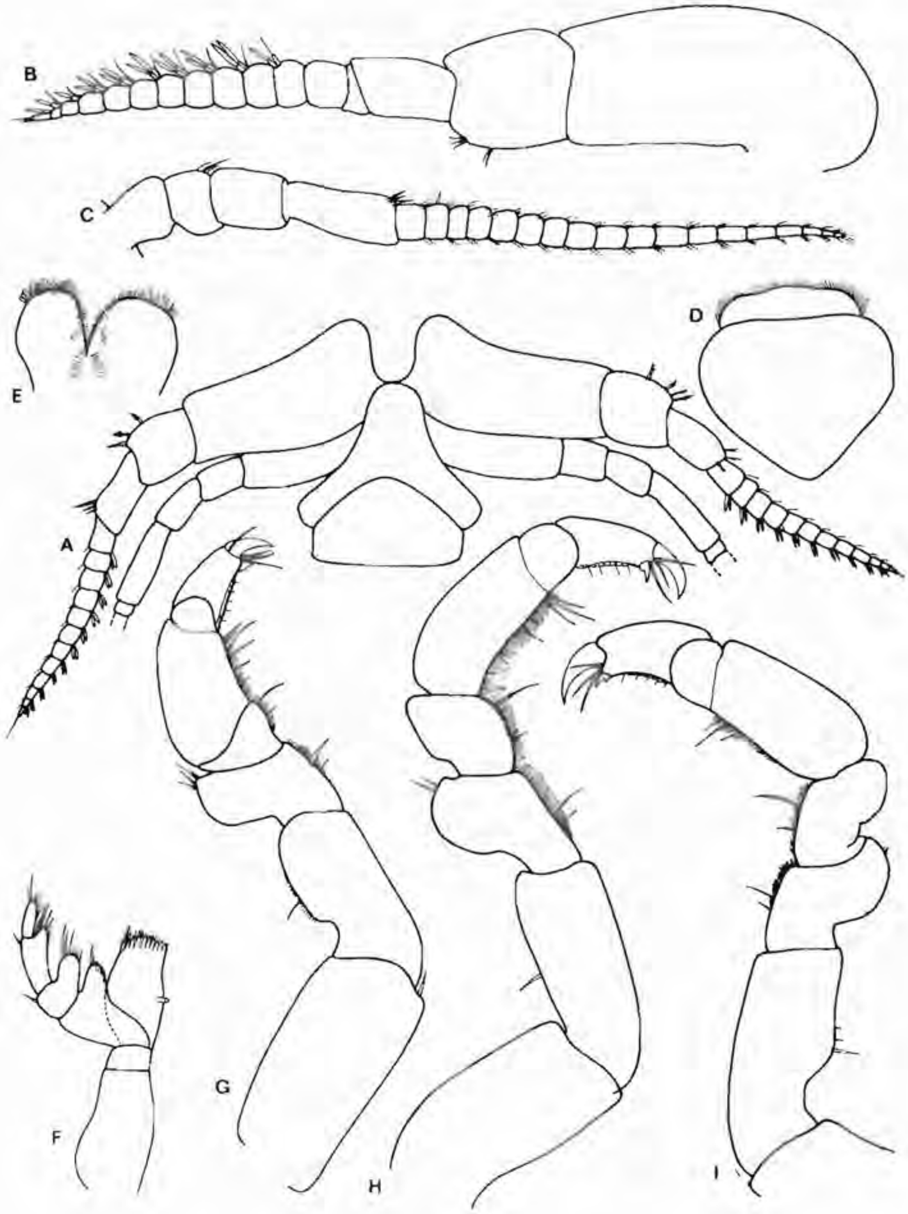

Fig. 7. *Dynamenella menziesi* new species, ♂. A, antennal region in frontal view; B, antenna 1; C, antenna 2; D, upper lip; E, lower lip; F, maxilliped; G first peraeopod; H, second peraeopod; I, sixth peraeopod. A, C-I, x 13; B, x 21.

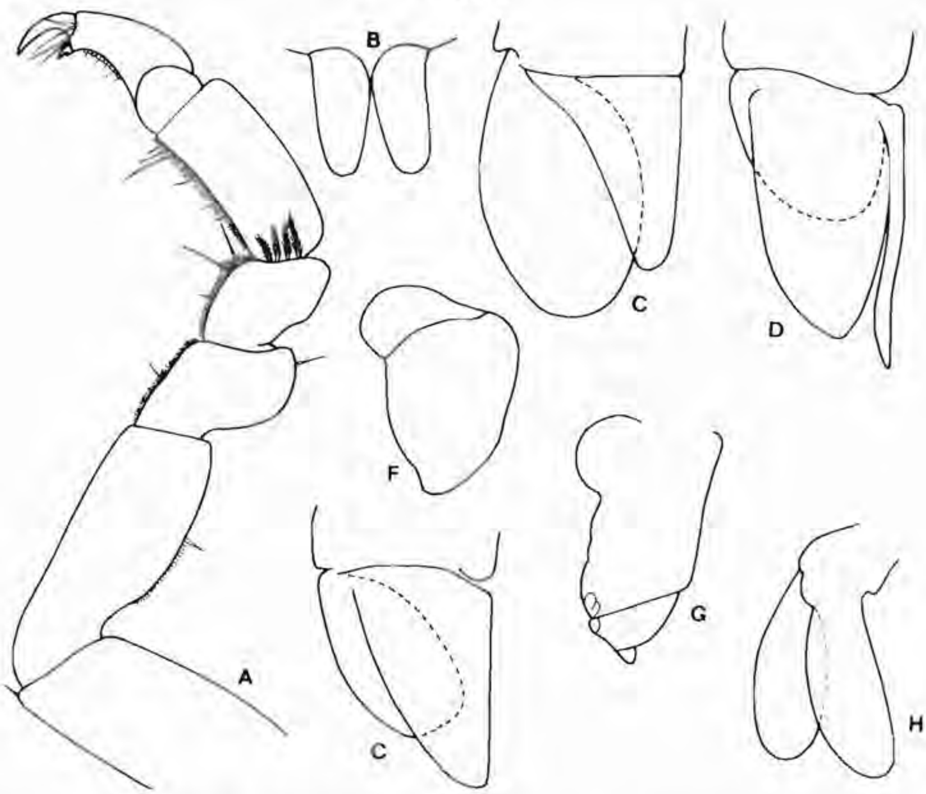

Fig. 8. *Dynamenella menziesi* new species, ♂. A, seventh peraeopod; B, penes; C, first pleopod; D, second pleopod; E, third pleopod; F, exopod of fourth pleopod; G, exopod of fifth pleopod; H, uropod. A, x 15; B, x 33; C-G, x 13; H, x 8.

of the inner lobe, the two lappets of the outer lobe are provided with six finely serrated setae each. The maxilliped carries one coupling hook on the basal endite. The distal two articles of the palp are narrower than the proximal two; the last article is oval, the last but one is longer with an inner distal lobe, the basal two segments of the palp have a very conspicuous inner lobe. An epipod is lacking in the maxilliped.

The peraeopods are very similar, the first only is somewhat shorter than the others. The dactylus ends in a strong claw and bears a small additional, usually two-topped, tooth in the distal part of the lower margin. The merus, carpus and propodus of each leg have a narrow strip of short dense pubescence on the inner margin; this pubescence is longest and densest in the second leg. The carpus of the seventh leg bears four plumose setae on the posterior half of the distal margin.

The penes are short, they are slightly longer than their basal width.

The second pleopod of the male shows a narrow appendix masculina, which exceeds the distal end of the endopod. The third pleopod has the exopod unjointed. The exopod of the fifth pleopod shows two articulations. The two branches of the uropod are oval and smooth.

Size. Menzies (1962, p. 135) stated "length nearly three-quarters inch for largest specimen"; a re-examination of Menzies' material showed the largest specimen that we could find to be 9 mm long. The present Tristan da Cunha specimens vary in length from 2.0 to 7.7 mm. The largest specimen (7.7 mm) is a male. Ovigerous and gravid females are 5.0 to 5.7 mm in length. The diameter of the eggs is 0.5 mm, the length of the young in the brood pouch varies from 0.8 to 1.3 mm.

Colour. The preserved specimens are pale yellowish brown with darker chromatophores over the entire body. Field notes on the specimens from Sta. 13c stated that some of the specimens are of a light colour, some are dark, while many are marbled.

Distribution. The present material proves that the species is very common in the Tristan da Cunha Archipelago, being found on Tristan da Cunha, Nightingale, Stoltenhoff and Inaccessible Islands and some smaller islands near these, often collected in long series. Menzies' (1962) material came from various localities on the Chilean coast between 53°22'S (Strait Magellan) and 32°57'24"S (Montemar, N. of Valparaiso). All Chilean specimens were collected in the tidal belt, in exposed to extremely exposed situations, mostly in rock pools and cracks in the rock, sometimes in a habitat of sand, gravel or muddy clay with boulders and rocks. Our own material was mostly collected among algae in the surf zone, or among algae in potholes and rockpools exposed to the surf or more protected; only one sample was dredged at a depth between 7 and 10 m.

Remarks. The present new species belongs to the atypical group of the genus *Dynamenella* to which Menzies (1962) drew attention. Menzies (1962, p. 135, 138) very justly pointed out that species like *Dynamenella eatoni* (Miers) and his own new species *D. acuticauda* do not fit the diagnosis of *Dynamenella* as given by Hansen (1905, pp. 107, 126), since in these species the apex of the pleotelson in both sexes is a simple notch, which grows wider posteriorly, while in the typical *Dynamenella* this notch in the male is widest anteriorly and narrows posteriorly, being almost closed there. In the same group as the present species belong *D. huttoni* (Thomson, 1879), *D. kraussi* Barnard, 1914, *D. brunnea* Vanhöffen, 1914 (these three species are often considered synonyms), *D. macrocephalus* (Krauss, 1843) and *D. ovalis* Barnard, 1914, and perhaps others. We follow Menzies in considering the differences between the typical and atypical groups of *Dynamenella* of insufficient importance make these groups distinct genera.

We compared our specimens directly with material of *D. eatoni* from South Georgia identified by A. Nordenstam. The most conspicuous difference between *D. menziesi* and *D. eatoni* lies in the general shape of the body, which in *D. eatoni* is far more flattened, while in that species also the epimera of the peraeon somites are far wider. *D. ovalis* resembles *D. eatoni* in having the body flattened. *D. menziesi* evidently finds its closest ally in *D. huttoni* and *D. brunnea*. With specimens of the former species from New Zealand a direct comparison was made. The two species have the same vaulted shape of the body. *D. huttoni* evidently grows to a much greater size than *D. menziesi* and can immediately be distinguished from it by the total lack of tubercles on the body. Kensley (1976, p. 287, fig. 10) redescribed *D. brunnea*. This species, which so far is only known from St. Paul and Amsterdam Islands in the Indian Ocean, resembles *D. menziesi* by having the pleotelson tuberculate, but the large tubercles are fewer (only two on either side very close together), while the others are not arranged in rows but scattered all over the pleotelson; also, Kensley does not figure the elevations on the last pleon segment. The epistome in *D. brunnea* is squarely truncate rather than rounded as in *D. menziesi*. As we did not examine any specimens of *D. brunnea* our comparison is only based on the data in the literature. *D. acuticauda* Menzies is placed by its author (Menzies 1962, p. 138) close to *D. ovalis*, so that it seems likely that it has the body flattened. Furthermore, *D. acuticauda* has the body smooth like in *D. huttoni*, and thus also in this respect differs from the present species.

Naylor (1961, p. 11, fig. 3) described and figured specimens from the Chatham Islands as *D. huttoni*. It seems possible to us that this material belongs to a different species. Naylor's fig. 3a shows a rather flattened specimen, while the female of 8 mm length has a strongly tuberculated abdomen and has the posterior incision closed behind, thus showing the shape found in species of the typical group of *Dynamenella*.

Through the kindness of Prof. Dr. Hans Brattström, Bergen, we obtained on loan the complete material of the species identified by

Menzies (1962, p. 135, fig. 44) as *Dynamenella eatoni* (Miers) collected by the Lund University Chile Expedition 1948-1949 and now the property of the Lund Museum. A very careful comparison of this material with our specimens from Tristan da Cunha failed to reveal any important differences, and we are convinced that the two groups belong to a single species. The rough phase described by Menzies is formed by the large males, the smooth phase by the females and juveniles, in which the tubercles, especially in wet specimens, are quite vague. Menzies' material has the same highly vaulted shape as our specimens and certainly cannot be assigned to *D. eatoni*, one of the characteristics of which is its flattened shape. Furthermore, in the true *D. eatoni* the body is entirely smooth without tubercles. All the characters mentioned above to distinguish our material from *D. eatoni* also hold good for Menzies' Chilean material.

We take pleasure in naming this new species for Dr. Robert J. Menzies, who has greatly furthered the study of Isopoda, and who was the first to mention and illustrate the present species. Notwithstanding some criticism on some of Menzies' work expressed in the present paper, we cannot but admire much of the work of the author and we gladly show this in naming this interesting species for him.

As shown above, the genus *Dynamenella* is sorely in need of a revision. Many of the old descriptions give insufficient information and many subsequent identificiations have been made without enough material for comparison. A thorough study of material of as many species as possible from the greatest possible number of localities might clear up the confused picture of the taxonomy and geographical distribution of the various *Dynamenella* species.

Cassidinopsis tuberculata new species

Norwegian Scientific Expedition

Nightingale Island: Middle Island (Sta. 84a, 4 specimens), Sea-Hen Rock on the west coast of Nightingale (Sta. 100, 74 specimens; Sta. 101, 1 specimen), west of landing place (Sta. 105, 64 specimens; Sta. 120a, 50 specimens; Sta. 120b, 25 specimens, including male holotype), east of landing place (Sta. 106a, 2 specimens; Sta. 111, 2 specimens).

Stoltenhoff Island: landing place on north shore (Sta. 113b, 25 specimens).

Inaccessible Island: near cultivated area near Blenden Hall (Sta. 160, 6 specimens).

Description. The cephalon is short and bears two well developed eyes. The first two peraeon somites are almost smooth, but the third to seventh are provided dorsally with a transverse row of tubercles each. These tubercles are rather few (0-10) and small in the first three somites, largest and most numerous (up to 20) in the sixth. Sometimes the tubercles are barely visible in the first and second somites. No coxal plates could be distinguished in our material.

The pleon shows one complete suture and two that are only visible in the lateral portion. In the middle area of the posterior part of the pleon two large submedian and a number of small tubercles are visible. The pleotelson is convex in its greater part. Along the posterior margin the surface is concave, however, since the posterior

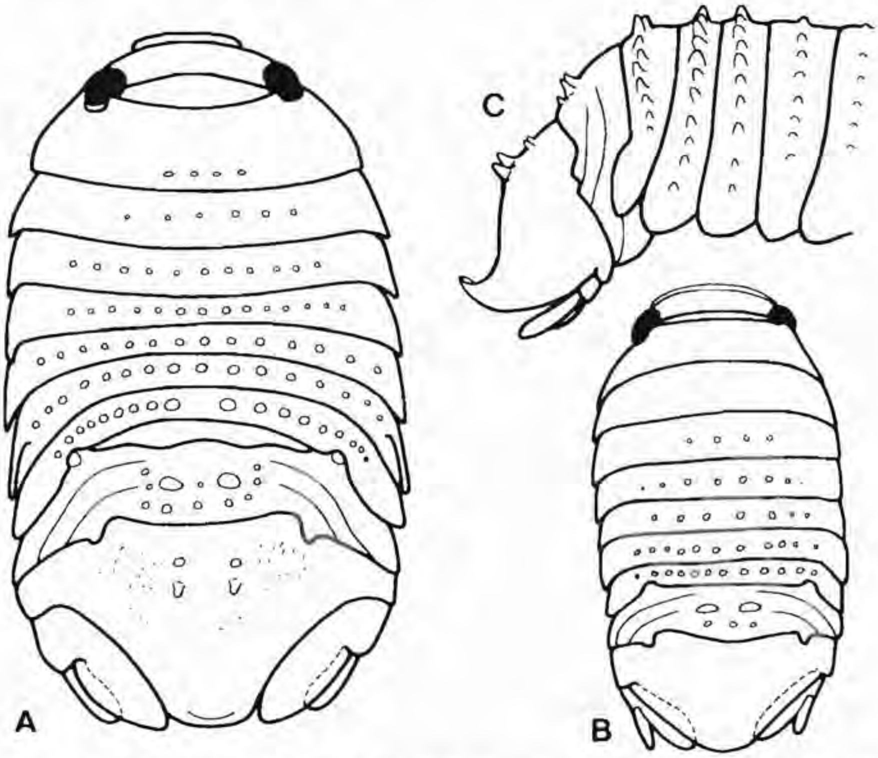

Fig. 9. *Cassidinopsis tuberculata* new species, Sta. 105. A, male in dorsal view; B, ovigerous female in dorsal view; C, abdomen of male in lateral view. A-C, x 8.

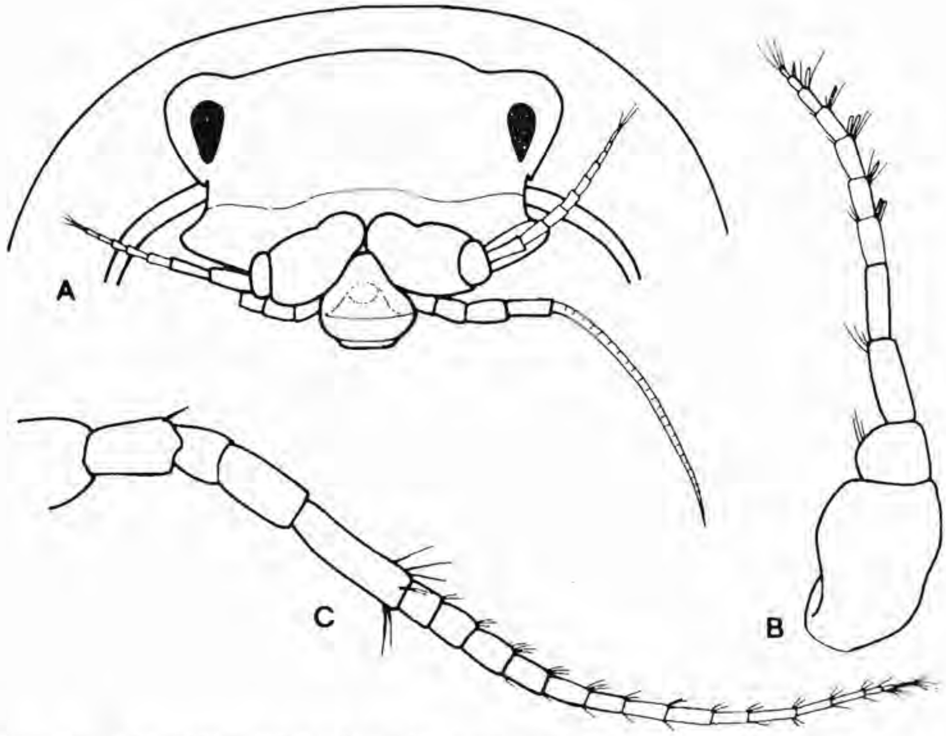

Fig. 10. *Cassidinopsis tuberculata* new species, male from Sta. 105. A, front view of cephalon; B, first antenna; C, second antenna. A, x 14; B, C, x 28.

margin is distinctly curved up. Dorsally the pleotelson of the males is provided with two pairs of submedian tubercles, which are placed one right behind the other. The posterior of these two pairs is the larger, often very much so. These tubercles of the pleotelson are not found in the females, where furthermore the other dorsal tubercles as a whole are smaller and less conspicuous than in the males; also the distal concavity of the pleotelson is less pronounced in the females.

The first antenna consists of 11 articles. All but the last of the six articles of the flagellum are furnished with one or two sensory filaments each; such filaments are lacking in the apical article. The basal article of the peduncle is somewhat swollen, but does not show a distinct process. The basal segments of the left and right antenna meet in the median line of the body. The second antenna is nearly twice as long as the first and consists of 21 articles.

The mandibular palp consists of three articles. The inner

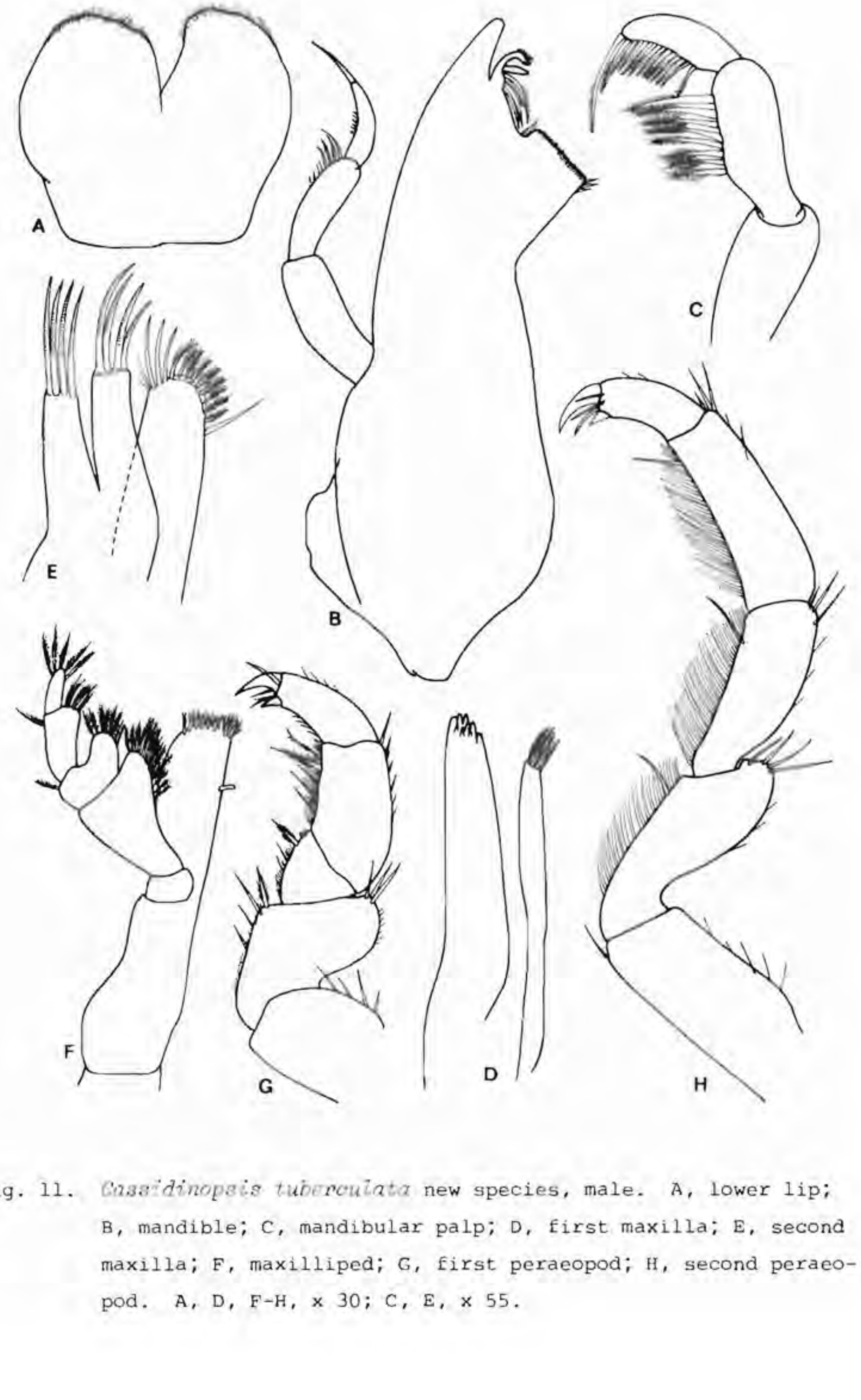

Fig. 11. *Cassidinopsis tuberculata* new species, male. A, lower lip; B, mandible; C, mandibular palp; D, first maxilla; E, second maxilla; F, maxilliped; G, first peraeopod; H, second peraeopod. A, D, F-H, x 30; C, E, x 55.

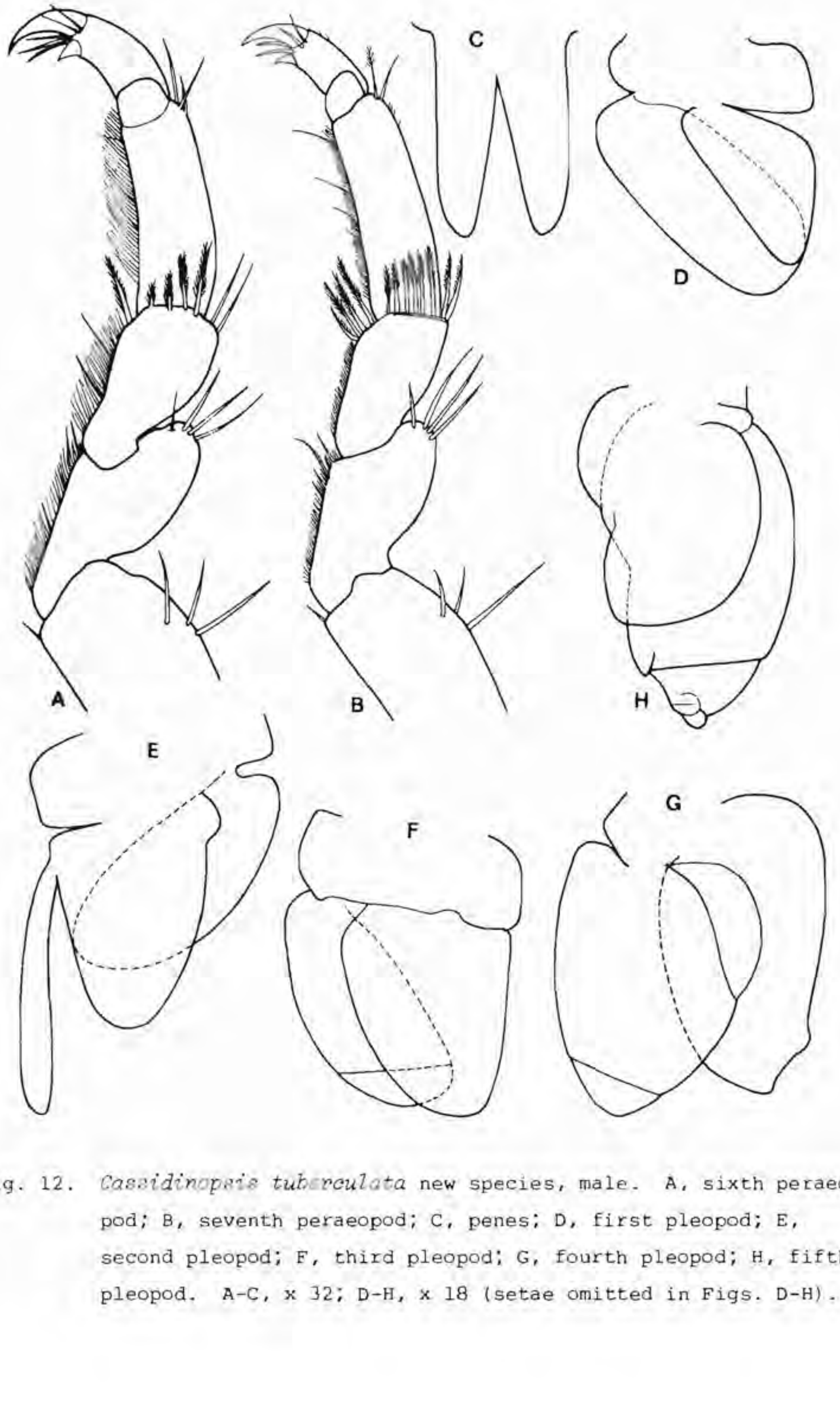

Fig. 12. *Cassidinopsis tuberculata* new species, male. A, sixth peraeopod; B, seventh peraeopod; C, penes; D, first pleopod; E, second pleopod; F, third pleopod; G, fourth pleopod; H, fifth pleopod. A-C, x 32; D-H, x 18 (setae omitted in Figs. D-H).

margin of the second article is provided with eight to eleven plumose setae. The distal article bears 14 to 18 brush-like setae there. The outer lobe of the first maxilla is provided with 8 to 10 teeth on the distal margin; the inner lobe has four brush-like distal setae. The inner lobe of the second maxilla bears distally 13 setae, the two lappets of the inner lobe each are furnished with five or six finely serrated setae. The maxilliped shows a single coupling-hook; the last two articles of the palp are narrower than the two preceding ones; the inner margin of the penultimate article is only slightly produced; there is no epipod.

The first peraeopod is shorter and stronger than the following. The second to sixth peraeopods have a dense short pubescence along the inner margin of the merus, carpus and propodus. In the first and seventh leg a similar, but far shorter fur is present. The carpus of the sixth peraeopod bears five plumose setae in the posterior half of the distal margin; the seventh leg bears 13 plumose setae there. Such plumose setae are lacking in the anterior legs. The accessory claw on the dactylus of the peraeopods is simple and rather broad.

The penes are rather slender, being about four times as long as wide at the base.

The second pleopod of the male has a long, distally widening appendix masculina. The exopod of the third male pleopod is distinctly jointed; in the fourth pleopod such an articulation is very indistinct or perhaps absent. The exopod of the uropod is small and falls far short of the tip of the endopod; both exo- and endopod end in a blunt apex.

S i z e . The adult males are 4.3 to 7.0 mm long; the length of ovigerous females varies between 4.3 and 5.2 mm. The diameter of the eggs is about 0.35 mm.

C o l o u r . Preserved specimens are of a pale yellowish brown colour with numerous dark chromatophores regularly distributed over the entire body.

D i s t r i b u t i o n . The species was found on three islands of the Tristan da Cunha group (Nightingale, Inaccessible, and Stoltenhoff), but was absent in the material collected at Tristan da Cunha Island itself. The animals were found in tide pools and protected rock pools, among algae etc.; they were not met with below the tidal zone.

R e m a r k s . The present genus belongs to Hansen's (1905, p.

124) Group B, Sphaeromidae eubranchiatae, and in Hansen's (1905, p. 108) key falls under section (b) with the exopod of the third pleopod jointed. Hansen's section (b) corresponds with Menzies' (1962, p. 141) Eubranchiata, Section II. However, Menzies incorrectly stated that in Group I the exopod of pleopod 3 is jointed and by inference indicated that such is not the case in Group II, this of course should be just the reverse.

As far as we are aware, three species of *Cassidinopsis* were known thus far: *C. emarginata* (Guérin, 1844), *C. maculata* (Studer, 1884) and *C. tasmaniae* Baker, 1926; *C. latistylis* (Dana, 1852) which usually is considered a synonym of *C. emarginata*, may be a valid species. *Cassidinopsis tuberculata* differs from all these species in the tuberculate ornamentation of the peraeon and the pleon. From *C. maculata* and *C. emarginata* (inclusive of *C. latistylis*) it can at once be distinguished by the larger uropodal exopod, which, although small, is not as much reduced as in those species. In *C. tasmaniae* the uropodal exopods are somewhat larger; this species differs from *C. tuberculata*, however, by the peculiar ornamentation of the pleotelson.

Menzies (1962, p. 144) erected a new genus *Paradynamenopsis* with one species, *P. lundae* from Central Chile. We are unable from the diagnosis and illustrations provided by Menzies to distinguish this genus from *Cassidinopsis*. In fact, Menzies' species seems closer to the new species here described, than to any of the species so far referred to *Cassidinopsis*. The uropods are very similar in the two species, although in *C. tuberculata* the endopod is less pointed. In *P. lundae* the abdomen shows a tuberculation, which is somewhat similar to that in the present species, while also the extreme distal part of the pleotelson is concave. The penes in Menzies' species are shorter than in *C. tuberculata* and no tuberculation of the peraeon is mentioned. It is to be regretted that Menzies did not make clear in what points his new genus can be distinguished from *Cassidinopsis*.

Limnoriidae

Phycolimnoria tristanensis new species

Norwegian Scientific Expedition

Tristan da Cunha Island; off Big Beach (Sta. 3, in roots of *Macrocystis pyrifera* (L.), more than 200 specimens).

Description. The body is rather slender. The cephalon is distinctly longer than the first peraeon somite. The fifth pleon somite shows no distinct sculpturing dorsally, there is only an indistinct median longitudinal carina, which slopes gradually down laterally. The posterior margin of the tergum of the fifth pleon somite is evenly convex.

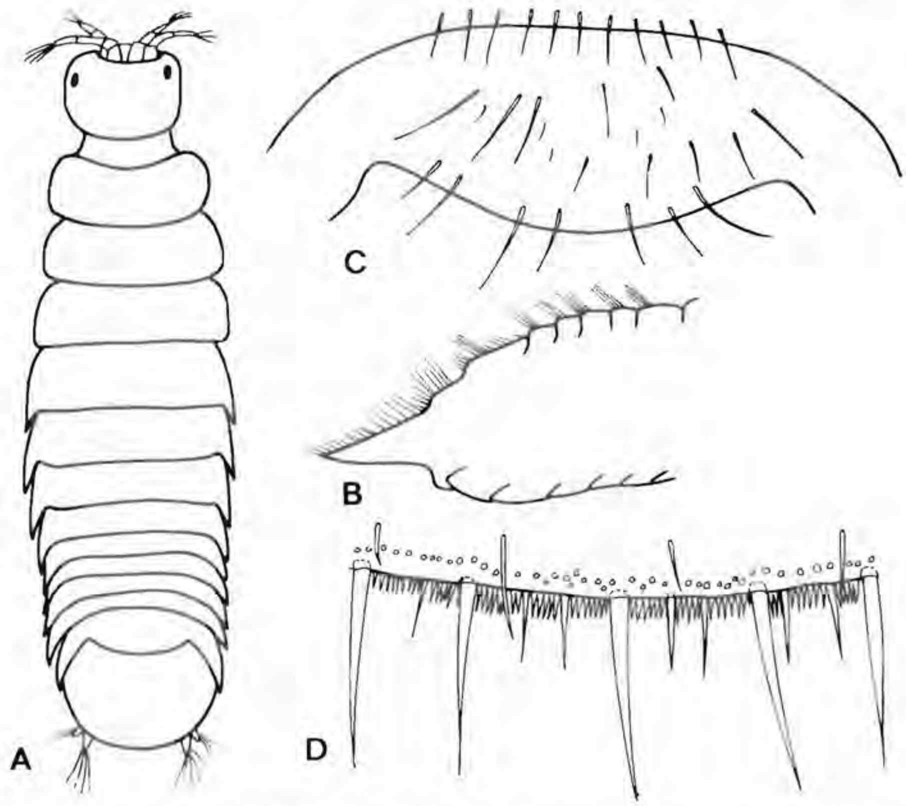

Fig. 13. *Phycolimnoria tristanensis* new species, ovigerous female paratype, Sta. 3. A, animal in dorsal view; B, outline of posterior part of the body in lateral view; C, fifth pleon somite in dorsal view; D, margin of pleotelson. A, x 19; B, x 26; C, x 70; D, x 231.

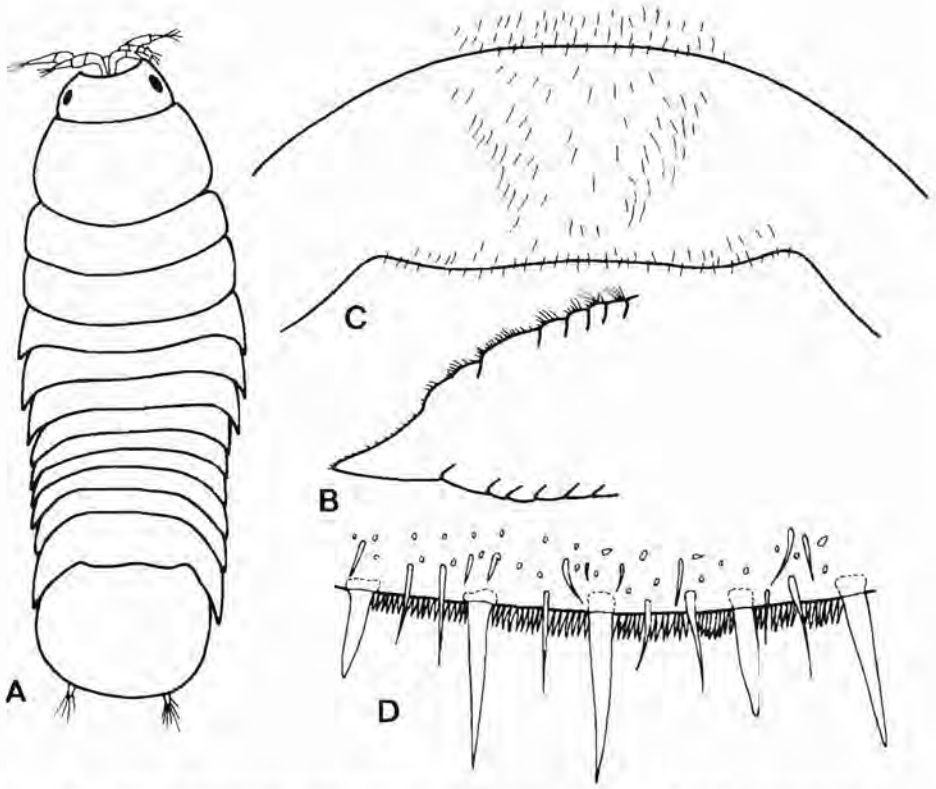

Fig. 14. *Phycolimnoria chilensis* (Menzies, 1962), female paratype. A, animal in dorsal view; B, outline of posterior part of body in lateral view; C, fifth pleon somite in dorsal view; D, margin of pleotelson. A, x 19; B, x 26; C, x 70; D, x 231.

The basal part of the pleotelson bears two submedian elevations at the anterior margin; these elevations gradually slope down posteriorly. The lateral parts of the upper surface of the pleotelson are conspicuously concave. The sculpturation of the pleotelson is not distinct. All peraeon and pleon somites bear rather long and strong hairs in the mid-dorsal region, especially along the posterior margin.

The first antenna is slightly shorter than the second and consists of 6 articles. The three basal articles, which form the peduncle, are large, being both considerably longer and wider than the distal three, which form the flagellum. Of the three flagellar articles the middle is the longest; the basal flagellar article bears two, the second one sensory filament. The peduncle of the second antenna consists of four articles. The flagellum is likewise four-articulated; the basal of

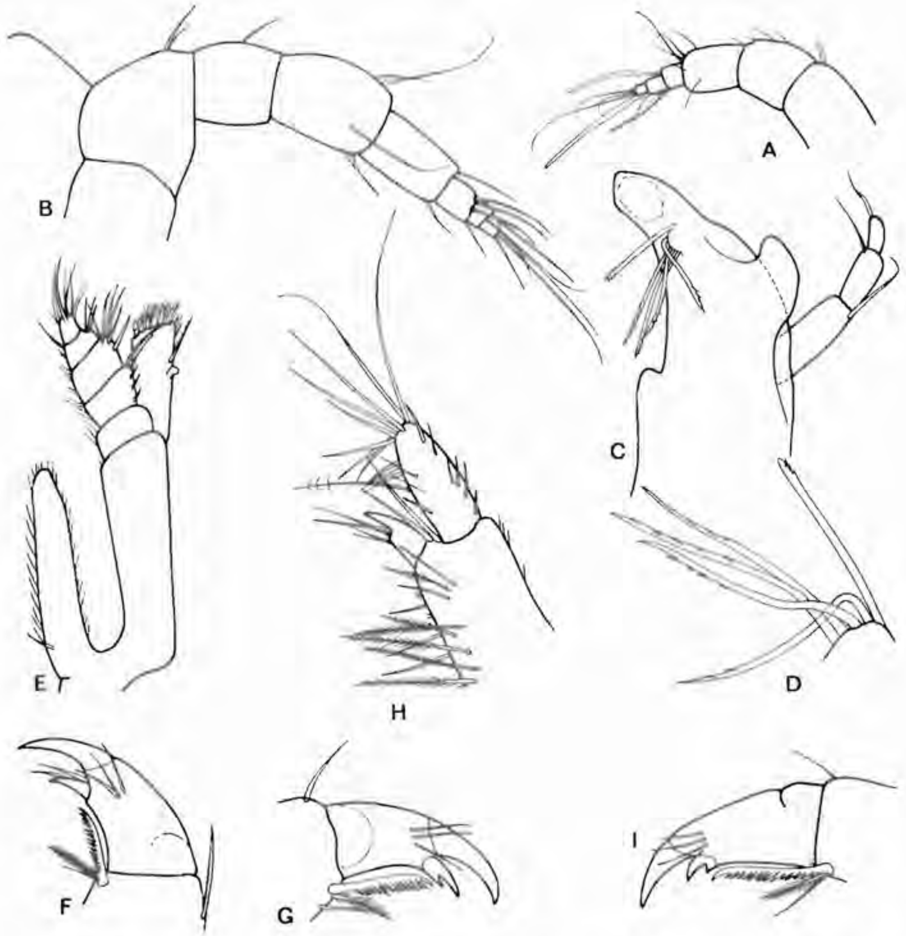

Fig. 15. *Phycolimnoria tristanensis* new species, female paratype. A, first antenna; B, second antenna; C, mandible; D, setae on right mandible; E, maxilliped; F, G, dactylus of first peraeopod; H, uropod.
Phycolimnoria chilensis (Menzies), female paratype. I, dactylus of first peraeopod. A-C, E, H, x 62; D, x 275; F, G, I, x 12.

these articles is distinctly the widest and is longer than the three distal articles combined.

The mandible is of the normal shape. The palp is three articulated, each of the articles bearing a single seta. The incisor process is rather low and blunt, the molar process bears a row of 5 setae; the lacinioid seta is serrate distally and is followed by a row of four slender, pointed setae, which bear 2 to 5 serrations in the distal half of one side. The third maxilliped shows the usual shape with a five-articulated palp, and a single coupling hook; the epipod is strap-like and is five times as long as wide; it tapers somewhat distally and reaches to the articulation of the palp with the sympod.

The dactylus of the first peraeopod has the two claws rather slender, more so than in *P. chilensis*.

The uropod is short, the exopod is oval in shape and almost twice as long as the endopod, which is suddenly narrowed in the middle and ends in a somewhat curved narrow apical point.

Size. The largest male measures 3.7 mm, the largest female 4.7 mm. The diameter of the eggs is 0.5 mm, juveniles carried in the brood pouch are 1.3 mm long.

Remarks. In many respects the present species closely resembles *P. chilensis* (Menzies) from Chile. In *P. chilensis* the body is less slender and the first peraeon somite is relatively longer. The fifth pleon somite has dorsally two submedian carinae separated by a longitudinal groove, the posterior margin of that somite is almost straight or even slightly concave in the middle. The shape of the telson is very similar in the two species. The mandibular palp in *P. chilensis* is of a different shape, having the second article longer than the basal, also the arrangement of the lacinioid and following setae is different. The dactylus of the first peraeopod in *P. chilensis* has the two ungues less slender. The most conspicuous difference, however, is found in the dorsal pubescence of the body. In *P. chilensis* this consists of many very short hairs, while in *P. tristanensis* the hairs are far fewer, much stronger and longer, as clearly shown in Figs. 13c and 14c. Through the kindness of Professor Dr. H. Brattström it was possible for the senior author (Sivertsen) to examine a paratype specimen of *Limnoria chilensis* Menzies and to verify the above mentioned differences. For comparison we provide here figures of various characters of the *P. chilensis* paratype. In his figure the hairs on the posterior margin of the telson in *P. chilensis*, Menzies (1962, p. 114, Fig. 37E) showed bundles of small setae between the longer ones. Neither in our specimens of *P. tristanensis*, nor in the paratype of *L. chilensis* are such bundles shown: the short setae form an even row in between the larger. The larger hairs on the posterior margin of the telson in *P. tristanensis* are more slender than in *P. chilensis*.

We follow Kussakin (1963, p. 281) in recognizing *Phycolimnoria* as a full genus and not as a subgenus of *Limnoria*.

Pillai (1967, pp. 1275, 1276) gave a list of 9 species of *Phycolimnoria*, to these *P. chilensis* and the present new species can now be added.

SUBORDER VALVIFERA

Idoteidae

Paridotea apposita Barnard, 1965

Paridotea ungulata (p.p.) Sheppard, 1957, Discovery Rep., vol 29, p. 151, fig. 4; Barnard, 1965, Ann. South African Mus., vol. 48, p. 198 (not *Oniscus ungulatus* Pallas, 1772).

Paridotea apposita Barnard, 1965, Ann. South African Mus., vol. 48, p. 198, fig. 1b; Kensley, 1976, Ann. South African Mus., vol. 69, p. 274.

Norwegian Scientific Expedition

Tristan da Cunha Island: off Sandy Point (Sta. 41, 1 specimen), Seal Bay (Sta. 52, 1 specimen; Sta. 54, 1 specimen; Sta. 171, 25 specimens), Julia Point (Sta. 70, 4 specimens; Sta. 71, 1 specimen; Sta. 78, 1 specimen), near potato patch (Sta. 167b, 3 specimens).

Nightingale Island: Middle Island (Sta. 86, 1 specimen), landing place (Sta. 107, 25 specimens; Sta. 117, 17 specimens), south side of island (Sta. 109, 17 specimens), in sound between Nightingale and Middle Islands (Sta. 118, 1 specimen).

Inaccessible Island: Blenden Hall (Sta. 125e, 13 specimens; Sta. 128, 120 specimens; Sta. 135, 1 specimen; Sta. 142, 6 specimens; Sta. 145c, 1 specimen; Sta. 146, 4 specimens; Sta. 150, 1 specimen), near cultivated area in northeastern part of the island (Sta. 151, 1 specimen; Sta. 160, 1 specimen; Sta. 160a, 1 specimen; Sta. 160e, 4 specimens), south of East Point (Sta. 155, 1 specimen), near South Point (Sta. 156, 3 specimens; Sta. 157, 1 specimen).

Discovery Investigations

Tristan da Cunha Island: Quest Bay (Sta. 5, several short hauls inside *Macrocystis* belt; depth 7 to 12 m; 31 January 1926, 1 specimen).

Gough Island: shore (Sta. WS. 123, under stones in rock pools, 0 m deep, 9 June 1937, 2 specimens).

University of Cape Town Ecological Survey

Tristan da Cunha Island: Sta. 12A, 33 specimens.

Description. Barnard (1965, p. 198, 199) described this species after a rather small amount of material from Gough Island. As our material is more extensive it is possible to give a supplementary description.

The body is oblong, comparatively stout and widest at the fourth to sixth peraeon somites. The dorsal surface is smooth. The head is broader than long, the anterior margin is arcuate. The eyes are bluntly triangular; they are situated dorso-laterally, slightly before the median transverse line; black pigment is present. The epimera of the second and third peraeon somites are narrow, the former is half as long as its somite, the latter has 2/3 of the length of its somite. The epimera of the fourth to sixth somites are as long as their respective somites. The posterolateral angles of the epimera of the sixth and seventh peraeon somites, and especially that of the seventh, are acute. The posterior margins of the sternites of the fourth to seventh peraeon somites are arcuate with a broad median notch. The pleotelson is somewhat longer than the four posterior peraeon somites combined, occupying nearly 1/3 of the total length of the animal. It shows one complete and two incomplete lateral sutures, and distally tapers to a rounded, shallowly excavate apex. Barnard (1965, p. 198, Fig. 1b) showed the differences in the shape of the posterior end of the telson and the thoracic epimera in this species and *P. ungulata* (his Fig. 1a).

The first antenna reaches a little beyond the end of the third article of the peduncle of the second antenna. The flagellum possesses about 11 groups of setae and sensory filaments.

The second antenna reaches backward to the middle of the third peraeon somite. The inner apex of the second article of the peduncle is produced. The flagellum consists of 18 to 21 articles in adult males, 10 to 19 in ovigerous females.

The upper lip is broader than long, the distal margin is practically rounded, being only slightly emarginate in the middle. It bears many hairs.

The lower lip has the lobes broad, rounded, strongly setose and

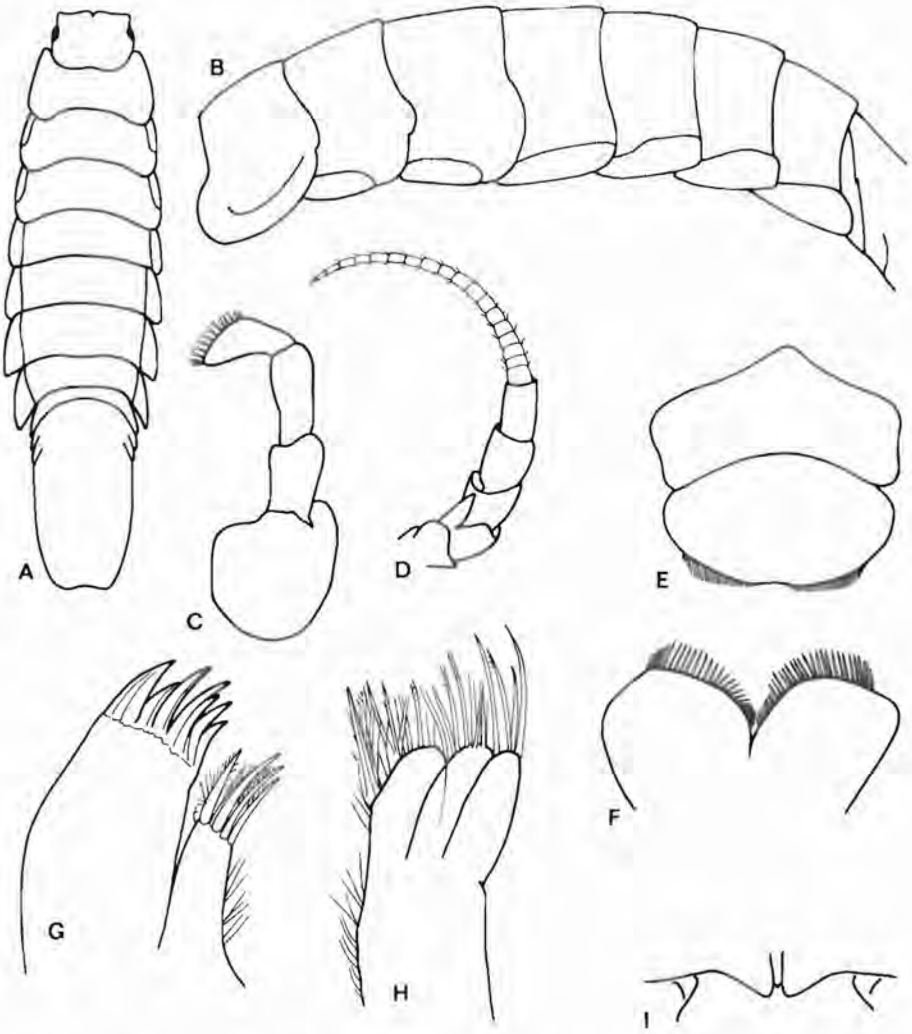

Fig. 16. *Paridotea apposita* Barnard. A, ♂ in dorsal view; B, ♀ from Sta. 125e, peraeon in lateral view; C, first antenna; D, second antenna; E, upper lip; F, lower lip; G, first maxilla; H, second maxilla; I, posterior margin of sternal plate of seventh peraeonite. A, x 1,5; B, D, I x 3; C, x 8; E, x 11; F, x 14; G, H, x 21.

fringed with golden hairs along the base.

The cutting edge of the mandible is 4-dentate, the secondary edge is 3-dentate.

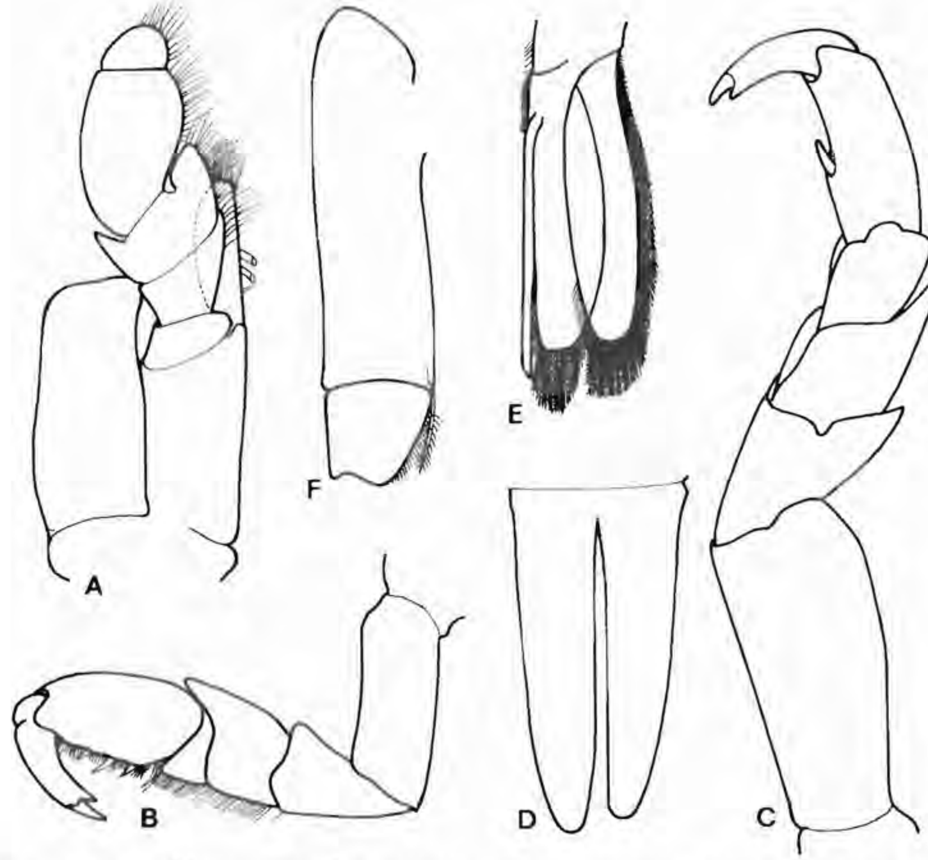

Fig. 17. *Paridotea apposita* Barnard, male. A, maxilliped; B, first peraeopod; C, seventh peraeopod; D, penes; E, second pleopod; F, uropod. A, D, x 16; B, C, x 6; E, x 4; F, x 3.

The first maxilla is as described by Barnard, only the outer plate may carry 10 to 14 spines, the inner plate 3 or 4 plumose setae.

The maxilliped is 7-articulated. The inner plate bears 2 to 4 coupling hooks. The epipod reaches a little beyond the end of the fourth article, its apex is slightly incurved.

The first peraeopod is shorter than the other legs. The inner margin of the sixth segment bears three large serrulate spines. The second to seventh peraeopods show a single spine on the sixth segment. In the males the first to sixth peraeopods are usually furnished with a thick coat of fur on the inner margin of the fourth to sixth segments, while the seventh peraeopod is without fur. In a few males, among these the largest specimen at hand (44 mm long), no fur was observed on the fourth segment of the sixth peraeopod. No fur is found in the juveniles and the females, although the latter may be more or less hairy on the just mentioned segments.

The second pleopod carries 6 or 7 hooked setae on the inner apex of the protopod. The male stylet in this pleopod is a little longer than the ramus, it is slender with an obliquely truncate apex. The uropods are narrow, they are nearly parallel-sided, with the ramus about as broad as long, the apex emarginate, and with a plumose seta at the outer distal angle of the peduncle.

Size. The average size of adult males is about 25 mm, but males of up to 44 mm were found. The largest female was 29 mm long. The 28 females that carried eggs or young in their brood pouch measured 18 to 29 mm. One of the largest females carried some 50 juveniles in the pouch; the length of these juveniles was about 3.3 mm. Another female carried 85 eggs, the largest diameter of which is 1.2 mm.

Colour. Living specimens were noted to have colours varying from light brown to dark red, or to deep green and red.

Remarks. The specimens at hand agree so well with Barnard's (1965) description of *Paridotea apposita*, based on material from Gough Island, that we have no hesitation in referring them to that species. Barnard (1965, p. 65) mentioned the occurrence of *Paridotea ungulata* (Pallas) on Tristan da Cunha and Gough Island; for this he based himself on Sheppard (1957), who reported material that she assigned to Pallas' species from these two localities. We had the opportunity to examine Sheppard's Discovery specimens from Tristan da Cunha and Gough and found them identical with *Paridotea apposita*. Thus only one species of the genus is known from the islands and seems to be endemic there. *Paridotea apposita* is indeed closely related to *P. ungulata*, but differs from that species by the blunt posterolateral angles of the telson, as well as by the different number of articles in the flagellum of the antennae. All three adult males of *Paridotea ungulata* from New Zealand that we have examined had 30 or 31 articles in this flagellum, while in adult males of *P. apposita* we found only 18 to 21 articles.

Paridotea apposita also shows a close resemblance to *P. nitida* (Heller, 1861) from St. Paul and Amsterdam Islands in the Indian Ocean; several authors synonymized Heller's species with *P. ungulata*. Kensley (1976, p. 273, 274, fig. 2) made clear that *P. nitida* is a valid species. Kensley also pointed to some differences between *P. nitida* and *P. apposita*, which are very slight. Comparison of our specimens with Kensley's figures (1976, figs. 2B, D, F) showed that in *P. apposita* the coxal plates of the last peraeon somites are higher, the uropod is more deeply emarginate distally, and the posterior angles of the telson are more broadly rounded.

Distribution. So far *Paridotea apposita* is known only from the Tristan da Cunha Archipelago and Gough Island. The records in the literature are: Quest Bay, Tristan da Cunha (Sheppard, 1957), Gough Island (Sheppard, 1957; Barnard, 1965; Kensley, 1976), Glen mouth, Gough Island (Barnard, 1965), off Archway, Gough Island (Barnard, 1965). The present material was found at the three main islands of the Tristan da Cunha Archipelago (Tristan da Cunha, Nightingale and Inaccessible), and proved to be common at all three. The specimens were mostly found among algae, also among and under stones, usually in the tidal zone, but in many instances also at depths down to 10 or 12 m (once at a depth of 13 to 20 m). Sheppard's (1957) Tristan da Cunha specimens were taken inside the *Macrocystis* belt at a depth of 7 to 12 m, her Gough Island material was found under stones in rock pools. Barnard's (1965) material from Gough came from beach debris, while some specimens were found in the stomach contents of Soldier fishes (*Sebastichthys capensis* (Gmelin)).

Arcturidae

Neastacilla tristanica new species

Norwegian Scientific Expedition

Nightingale Island: near landing place (Sta. 112, 1 specimen), sound between Nightingale and Middle Islands (Sta. 118, 1 specimen).

Stoltenhoff Island: landing place on north coast (Sta. 113, 1 specimen).

Inaccessible Island: Blenden Hall (Sta. 140, 5 specimens; Sta. 150, 21 specimens), south of East Point (Sta. 155, 3 specimens), off South Point (Sta. 156, 22 specimens, among which the holotype).

Description. The body of this species is fairly slender. The anterior margin of the head is deeply concave with a faintly indicated median point. The eyes are well developed and provided with black pigment. A shallow groove indicates the line between the head and the

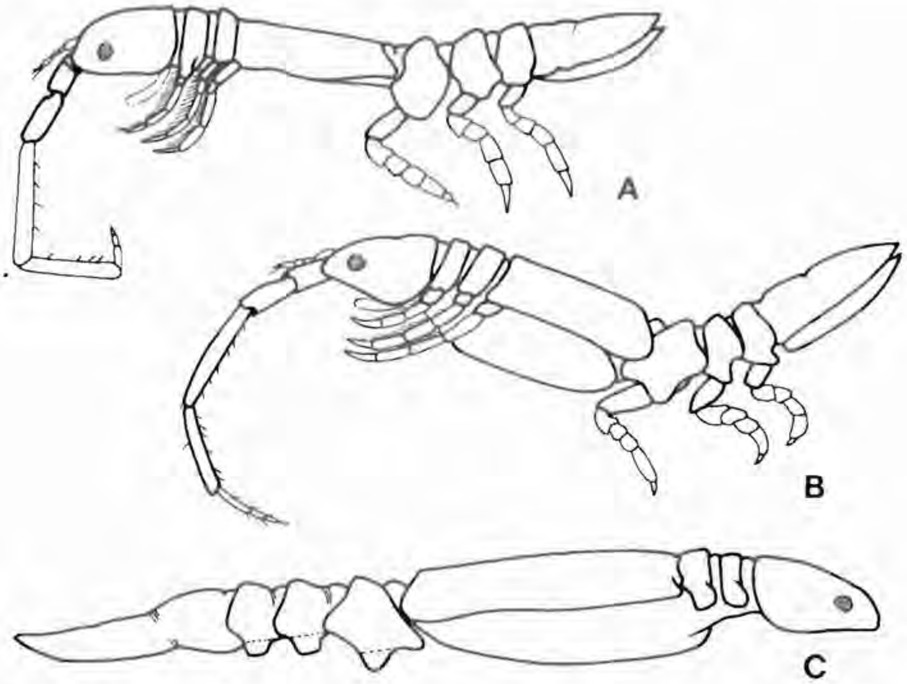

Fig. 18. *Neastacilla tristanica* new species. A, male from Sta. 150, lateral view; B, female with 3 young in the brood pouch, Sta. 155, in lateral view; C, *Neastacilla falclandica* (Ohlin), ovigerous female of 5.5 mm, from Falkland Islands, det. Å. Nordenstam, Mus. Stockholm, no. 4507. A, x 12; B, x 9; C, x 14.

first peraeon somite. The second and third peraeon somites are about equal in size and somewhat shorter than the first. The fourth peraeon somite is three times as long as high. Coxal plates are not visible.

The pleotelson is 2.1 times as long as wide, it shows the division into three parts, separated by faint grooves; the groove between the second somite and the telson being the most distinct, the other groove is only visible laterally. The lateral margins of the pleotelson are practically parallel for the greater part of their length, showing only slight constrictions at the borderlines of the somites. The telson tapers gradually to a blunt top and shows no teeth or angles on the lateral margins.

The first peduncular article of the second antenna is very short. The second is much longer, but is distinctly shorter than the

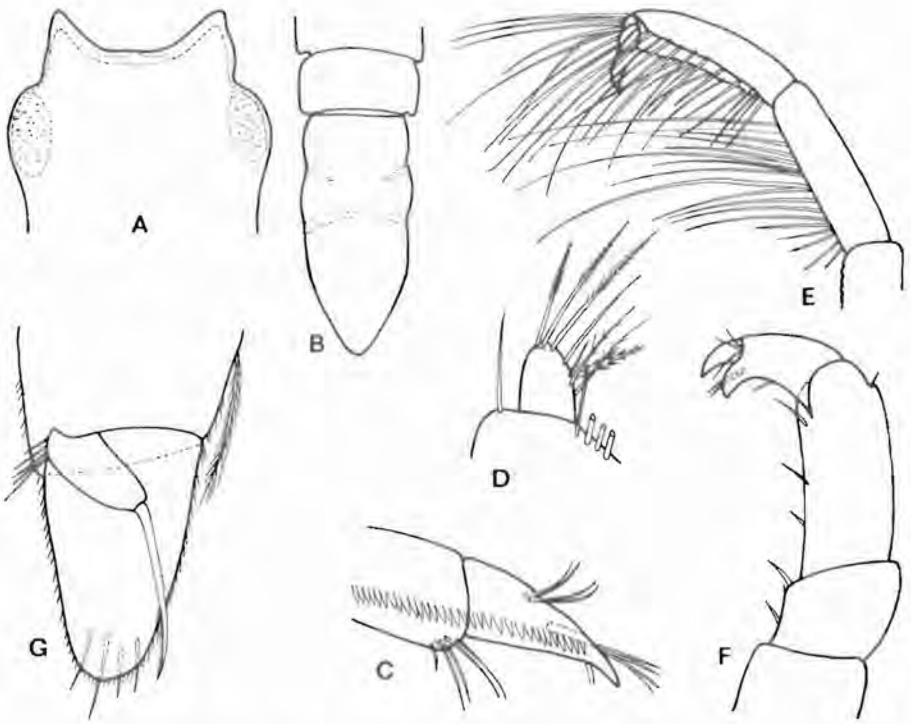

Fig. 19. *Neastacilla tristanica* new species. A, B, holotype female, Sta. 156; C-F, female, Sta. 155; G, male, Sta. 150. A, front in dorsal view; B, pleotelson in dorsal view; C, tip of second antenna; D, distal segments of first peraeopod; E, distal segments of second peraeopod; F, distal segments of last peraeopod; G, distal part of uropod. A, x 30; B, x 15; C, x 125; D, G, x 110; E, F, x 45.

third. The fourth and fifth articles are by far the longest, the fourth being 1.2 times as long as the fifth. The flagellum is very short and three-articulated. The apical articles show a row of very small closely placed teeth, and end in a claw.

The dactylus of the first peraeopod is very similar to that of *N. falclandica* (Ohlin), and has more setae (7 or 8) than in *N. magellanica* (Ohlin). The second pair of peraeopods end in a sharply pointed somewhat curved dactylus, which is partly hidden by long hairs. The last pair of peraeopods has the dactylus ending in two short ungues, the upper of which is movable. The uropod is rather similar to that of *N. falclandica*, but the distal seta of the secondary ramus is relatively shorter.

S i z e . The length of the specimens varies from 1.2 to 4.8 mm. The largest male measures 3.9 mm, the largest female 4.8 mm. This female carried some juveniles of 0.5 mm long in the brood pouch.

C o l o u r . The colour of alcohol specimens is yellow with scattered brown chromatophores.

R e m a r k s . The present new species shows much resemblance to *N. falclandica* and *N. magellanica*. *N. magellanica* is a more robust species, in it the third segment of the second antenna is shorter than the second, the fourth peraeon somite is only 2.3 times as long as high and the pleotelson is only 1.7 times as long as wide. The median point at the anterior margin of the cephalon is more distinct in *N. magellanica* than in *N. tristanica*, the lateral margins of the pleotelson are more convex and show two distinct angles at either side. In *N. falclandica* the new species finds its nearest ally, but comparison with material from the former species present in the Naturhistoriska Riksmuseet in Stockholm showed them to be different specifically. *N. falclandica* is a more slender species in which the fourth peraeon somite is more than 5 times as long as high; in it the pleotelson is less bulbous and tapers more narrowly towards the apex, while it is three times as long as wide.

D i s t r i b u t i o n . The species is only known from Nightingale, Stoltenhoff and Inaccessible Islands in the Tristan da Cunha Archipelago. A total of 54 specimens was taken, most, if not all, among algae. Two were found in the tidal zone, but all others were dredged in depths between 5 and 10 m. Other species of this genus are known from southern South America (Magellan Straits and Falkland Islands), it is possible that material from Marion Island and Kerguelen, brought to *Astacilla*, actually also belongs in the present genus. Nierstrasz (1941, p. 256) also assigned species from Ceylon and South Australia to *Neastacilla*.

T y p e . Holotype is a gravid female of 4.5 mm length from Sta. 156.

SUBORDER ASELLOTA

Munnidae

Munna aculeata new species

Norwegian Scientific Expedition

Nightingale Island: east of landing place (Sta. 111, 1 female).
Stoltenhoff Island: off north-east coast (Sta. 116, 1 female).
Inaccessible Island: south of East Point (Sta. 154, 1 male holotype).

Description. The cephalon is twice as wide as long and has the frontal margin straight with broadly rounded lateral angles. The eyes are prominent on short, thick immovable stalks. The preocular lobes are distinct, although small. The thorax is smooth, without spines. Coxal plates are visible on simites 2 to 7 inclusive. The body has the usual shape. The pleotelson is pear-shaped, narrowing posteriorly; it has the lateral margins smooth but for one spine at the end of the anterior third, and the presence of the uropod. The lateral spines are distinct and slender. The uropods are rounded without an apical spine. The posterior margin of the pleotelson is armed with 6 pronounced spines. The dorsal surface of the pleotelson is provided with a pair of spines, which are slightly shorter than the lateral spines and are placed in the submedian area of the telson; in the male these spines are situated slightly behind the lateral spines, in the female they stand on about the same line as the lateral spines. The distance between these submedian spines is about as great as that between each spine and the nearest lateral margin of the pleotelson.

The first antenna consists of 6 articles; the first two of these are broad and of about equal length; the following two articles are short and about half as wide as the first pair. The fifth article is elongate, being as wide as or slightly narrower than the previous one, and as long as the previous 3 combined. The ultimate article is very short, being the shortest of all; it is considerably narrower than the fifth and bears an aesthetasc and a seta. The fifth article is also provided with an aesthetasc. The second antenna is broken, only the wide basal articles are visible.

The mouth parts have not been dissected because of the very

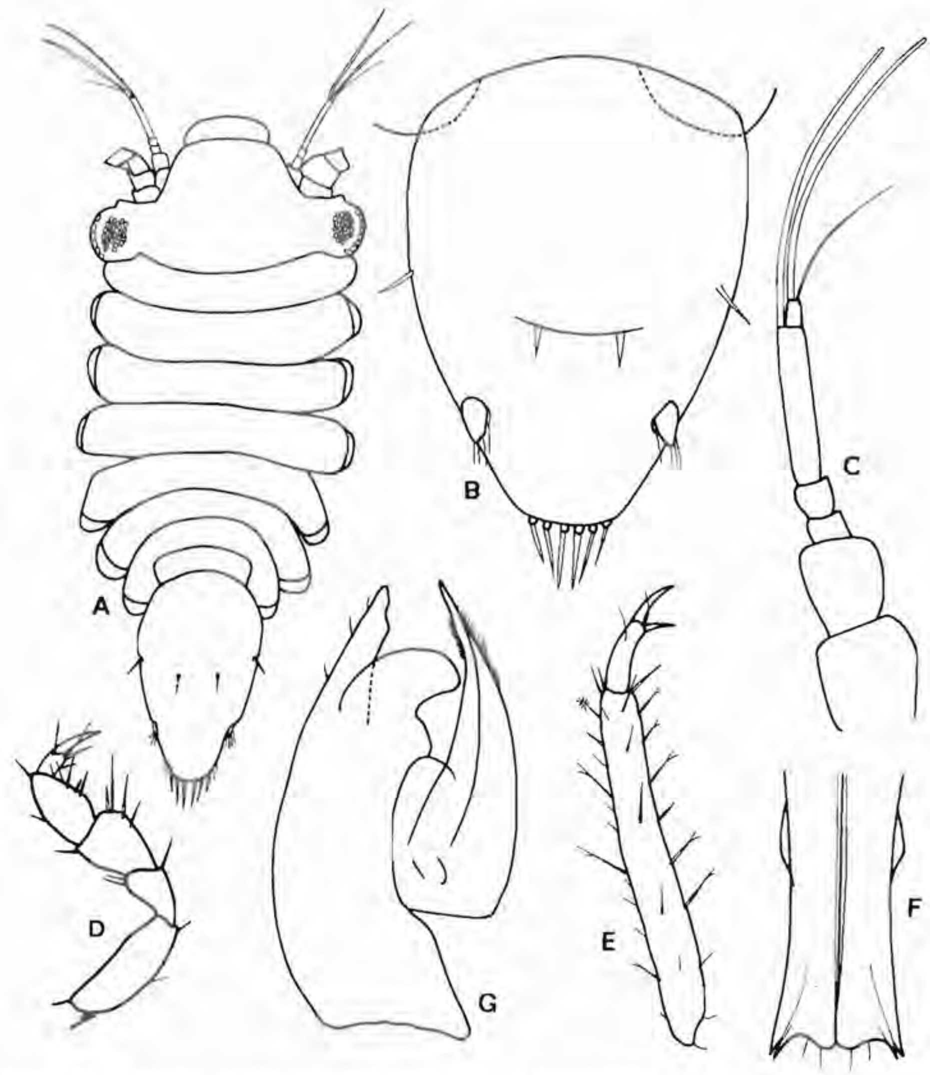

Fig. 20. *Munna aculeata* new species, ♂ holotype, Sta. 154. A, body in dorsal view; B, telson in dorsal view; C, first antenna; D, peraeopod 1; E, peraeopod 7; F, first pleopods; G, second pleopod. A, x 45; B, x 207; C, x 125; D, E, x 32; F, x 65; G, x 187.

small number of specimens at hand.

The first pereiopod of the male is subprehensile. The dactylus is about as long as the propodus; it bears a strong spine in the middle of the ventral margin, two bristles and a seta are present. The propodus is slightly less than twice as long as wide and bears some bristles on the lower margin. The carpus is triangular, being widest distally; its lower distal angle is broadly produced so that the anterior margin is wider than the propodus, a strong spine and bristles are present on this lobe. The merus is about as long as, but distinctly less wide than the carpus, it is somewhat more than half as long as the ischium. In the posterior legs (which are detached and therefore their exact situation is not known) the dactylus ends in two movable claws, the upper of which is longer and stronger than the lower. The propodus is long and slender, being about 3 times as long as the dactylus and 4 or 5 times as long as wide.

The apex of the first pleopod of the male is only slightly widened and ends there in a triangular point which at its inner side bears a movable spine which reaches about as far as the tip of the point. The posterior margin of the combined first pleopods is triangularly incised in the middle and is S-shapedly curved in each half; 4 or 5 setae are present on the posterior margin. The second pleopod of the male has the normal shape; the apex of the exopod ends in a narrow point and carries several bristles on the margin before the top.

Size. The male holotype is 0.9 mm long, the female paratypes 1.0 and 1.2 mm.

Remarks. The species belongs to the subgenus *Munna* as recognized by Menzies (1962, p. 32). It can be distinguished from all other species of the subgenus by the armament of the pleotelson, the development of the eyes and the fact that the antennulae have six articles.

Habitat. The three type specimens were taken in depths of 40-60 m, 30-45 m, and 40 m, on a hard bottom at the outside of the *Macrocystis* belt.

Munna nana Nordenstam, 1933

Munna nana Nordenstam, 1933, Further zool. Res. Swedish Antarctic Exped., vol. 3 no. 1, p. 222, text, figs. 56, 57.

Norwegian Scientific Expedition

Tristan da Cunha Island: near Little Beach (Sta. 32, 4 specimens; Sta. 77, 10 specimens), near Julia Point (Sta. 16, 5 specimens; Sta. 49, 3 specimens; Sta. 68, 2 specimens; Sta. 71, 5 specimens; Sta. 73, 1 specimen; Sta. 74, 1 specimen; Sta. 165, 4 specimens), Seal Bay (Sta. 51, 1 specimen).

Stoltenhoff Island: off north-east coast (Sta. 116, 7 specimens).

Inaccessible Island: near Blenden Hall (Sta. 160, 1 specimen; Sta. 160b, 6 specimens; Sta. 160e, 1 specimen), near South Point (Sta. 156, 1 specimen; Sta. 157, 4 specimens).

Description. The present specimens agree very well with the description of *Munna nana* provided by Nordenstam (1933). Menzies (1962, p. 36) placed this species in the subgenus *Uromunna* Menzies. Especially the shape of the first pleopod of the male, which strongly tapers towards the distal end and has three setae attached to the rear margin is characteristic, as is also the sharply pointed apex of the exopod of the second male pleopod. As in most species of the subgenus *Uromunna* the first antenna bears a single sensory filament only.

Our specimens, however, differ from Nordenstam's description of *Munna nana* in a few, probably minor points. Thus the first male pleopod has a more square-cut end and the setae at the distal margin are stronger than figured by Nordenstam. The frontal margin of the cephalon is generally somewhat incurved and in some specimens carries 4 or 5 bristles. A preocular lobe is visible in larger specimens, it is less clear in smaller ones; this latter character, however, probably is of little value as the depth of focusing greatly influences the distinctness with which the lobe is seen. The shape of the maxilliped of a female from Sta. 157, figured here (Fig. 21e), differs rather strongly from that of the male figured by Menzies (1962, p. 41, fig. 41); these differences may be due to sex.

The males are much narrower than the females and are more slender. The ratio width : length is 2:5 in the former, almost 1:2 in the latter.

Size. The length of the 9 males varies from 0.7 to 1.2 mm, that of the 48 females from 0.6 to 1.2 mm. The ovigerous or gravid females are 0.7 to 1.1 mm long. The eggs are relatively large, measuring 0.12 to 0.17 mm, being thus about one fourth of the total length of the female; the pouch young are 0.20 mm long.

Remarks. In the collections from Tristan da Cunha *Munna nana* is often found together with *M. varians*. The females of the two

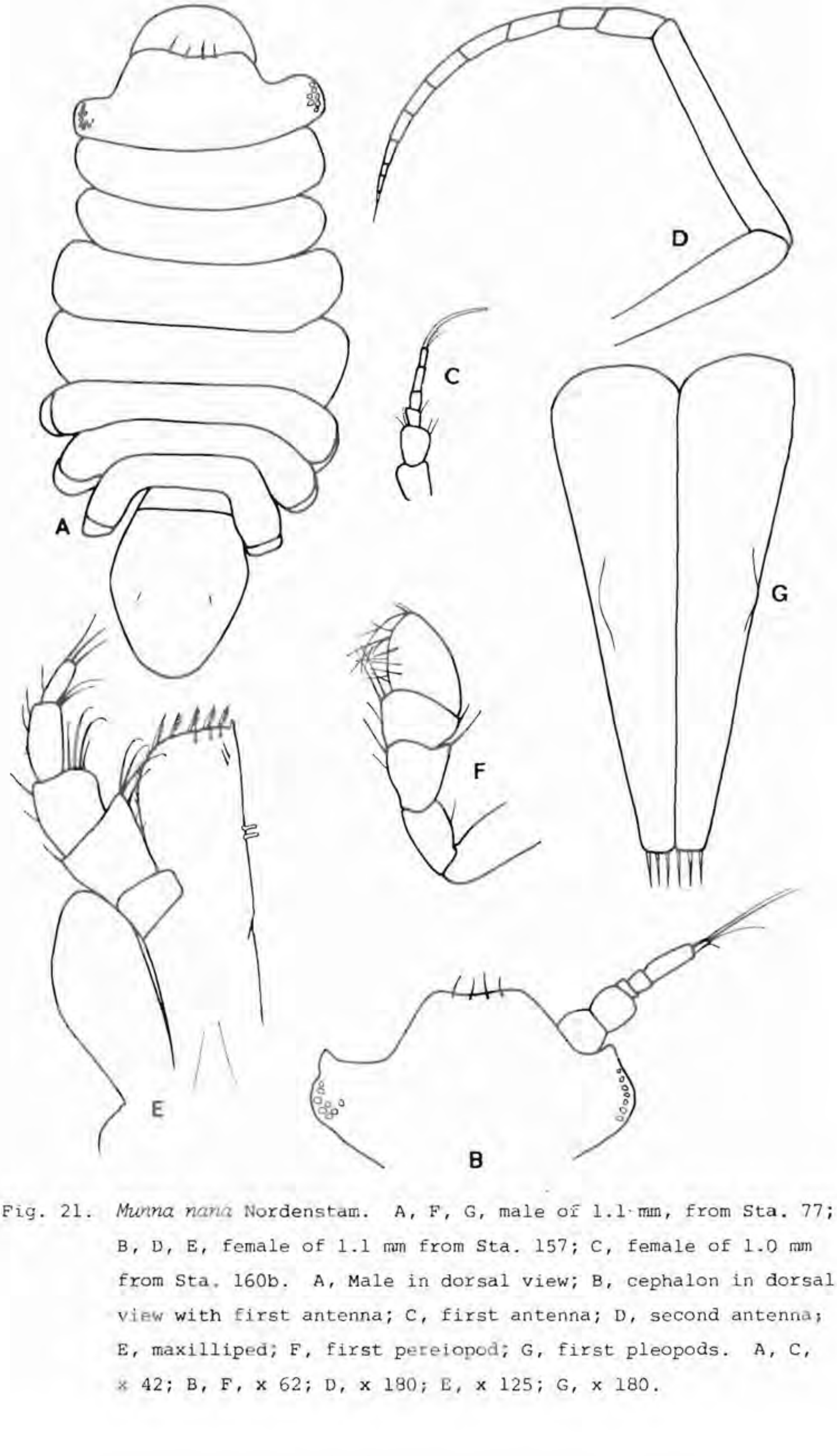

Fig. 21. *Munna nana* Nordenstam. A, F, G, male of 1.1 mm, from Sta. 77; B, D, E, female of 1.1 mm from Sta. 157; C, female of 1.0 mm from Sta. 160b. A, Male in dorsal view; B, cephalon in dorsal view with first antenna; C, first antenna; D, second antenna; E, maxilliped; F, first pereiopod; G, first pleopods. A, C, x 42; B, F, x 62; D, x 180; E, x 125; G, x 180.

species under a cursory examination may appear much alike, but they can easily be distinguished by the different size: the young in the pouch of *M. varians* may reach the same size as the ovigerous females of *M. nana*.

Habitat. Most of the present material was found among and under stones and in cracks of rocks in the outer surf zone, or among *Lithothamnion* in exposed places. The species was also found in dredge hauls in and inside the *Macrocystis* belt at depths of 5-8, 5-10, and 30-45 m on a hard bottom, or on a sandy bottom with algae. Once 4 specimens were taken in a surface plankton tow, while at other occasions 10 specimens were obtained in a spot where the water is sometimes fresh, and 4 were found in a regular tide pool.

Distribution. Nordenstam (1933) described the species from the Falkland Islands (Berkeley Sound and Port Louis) at depths of 1 and 16 m on a sand or gravel bottom with algae. Menzies (1962) reported it from southern Chile (in 100 m depth) and a "forma a" from northern, central and southern Chile (from the tidal belt and 8 m depth). Kensley (1976, p. 317) listed an extensive material from St. Paul and Amsterdam Islands (upper infralittoral and sublittoral, down to depths of 50-60 m). The species is now reported for the first time from Tristan da Cunha.

Munna varians new species

Norwegian Scientific Expedition

Tristan da Cunha Island: Big Beach (Sta. 3, 12 males, 17 females (6 ovigerous, 1 gravid)), Little Beach (Sta. 77, 2 males, 2 females), near Julia Point (Sta. 49, 2 males, 3 females; Sta. 64, 6 specimens (1 ovigerous female); Sta. 68, 4 males, 17 females (3 ovigerous); Sta. 71, 5 specimens (1 ovigerous female); Sta. 73, 2 males; Sta. 74, 18 specimens, including two males, 2 ovigerous and 1 gravid female), Seal Bay (Sta. 51, 1 male).

Nightingale Island: near landing place (Sta. 94, 3 specimens; Sta. 103, 1 specimen; Sta. 111, 2 specimens), Sea Hen Rock (Sta. 101, 1 specimen).

Stoltenhoff Island: landing place on north side (Sta. 113, 1 gravid female), off north-eastern coast (Sta. 116, 5 specimens, including 1 ovigerous and 1 gravid female).

Inaccessible Island: near Blenden Hall (Sta. 146, 2 specimens;

Sta. 160, 11 males, 5 females (1 gravid); Sta. 160e, 34 specimens including 1 gravid and 5 ovigerous females; Sta. 160f, 11 specimens including 2 ovigerous females; Sta. 160g, 16 specimens including 2 ovigerous females), south of East Point (Sta. 154, 10 specimens), near South Point (Sta. 156, 1 specimen; Sta. 157, 14 specimens including 2 ovigerous females).

University of Cape Town Ecological Survey

Tristan da Cunha Island: Sta. 115 A, 1 male and 1 female.

Description. The body is rather stout, its length measures about 2.5 times its greatest width. The dorsal surface is covered dorsally and laterally with long setae, which are especially distinct in the posterior part. The cephalon is distinctly wider than long with a broad truncated front, which has the anterior margin straight or slightly concave, and provided with some 10 long setae. The eyes are large and consist of numerous ocelli. A distinct preocular lobe is present.

The first peraeon somite is half to two thirds as long as the cephalon. It is usually shorter than, but sometimes as long as the second. The third and fourth peraeon somites are widest, but usually not very much wider than the first and second. The second and third are the longest. The last three peraeon somites are narrower than the rest and have the epimera directed backward: the seventh somite usually is the longest, but also the narrowest of the three. In dorsal view coxal plates are visible on all peraeon somites.

The pleotelson is ovate, 1.5 to 1.7 times as long as wide: it is widest in or slightly before the middle. The posterior margin is triangularly rounded. The lateral margin bears the uropod in the posterior quarter of its length, and shows no lateral spines. Neither are there dorsal spines on the surface of the pleotelson.

The first antennae are about as long as the cephalon and first peraeon somite combined, and have 7 or 8, rarely 6 articles. The first two articles are the widest, being somewhat longer than wide and about twice or more than twice as wide as the next two articles. The third and fourth articles are short, being of equal width and together they are shorter than the second; they are about equal in length or the fourth is somewhat longer than the third. In the six-articulated first antenna the next article is as wide as the third and fourth, but twice or almost three times as long as the combined length of those two articles; the

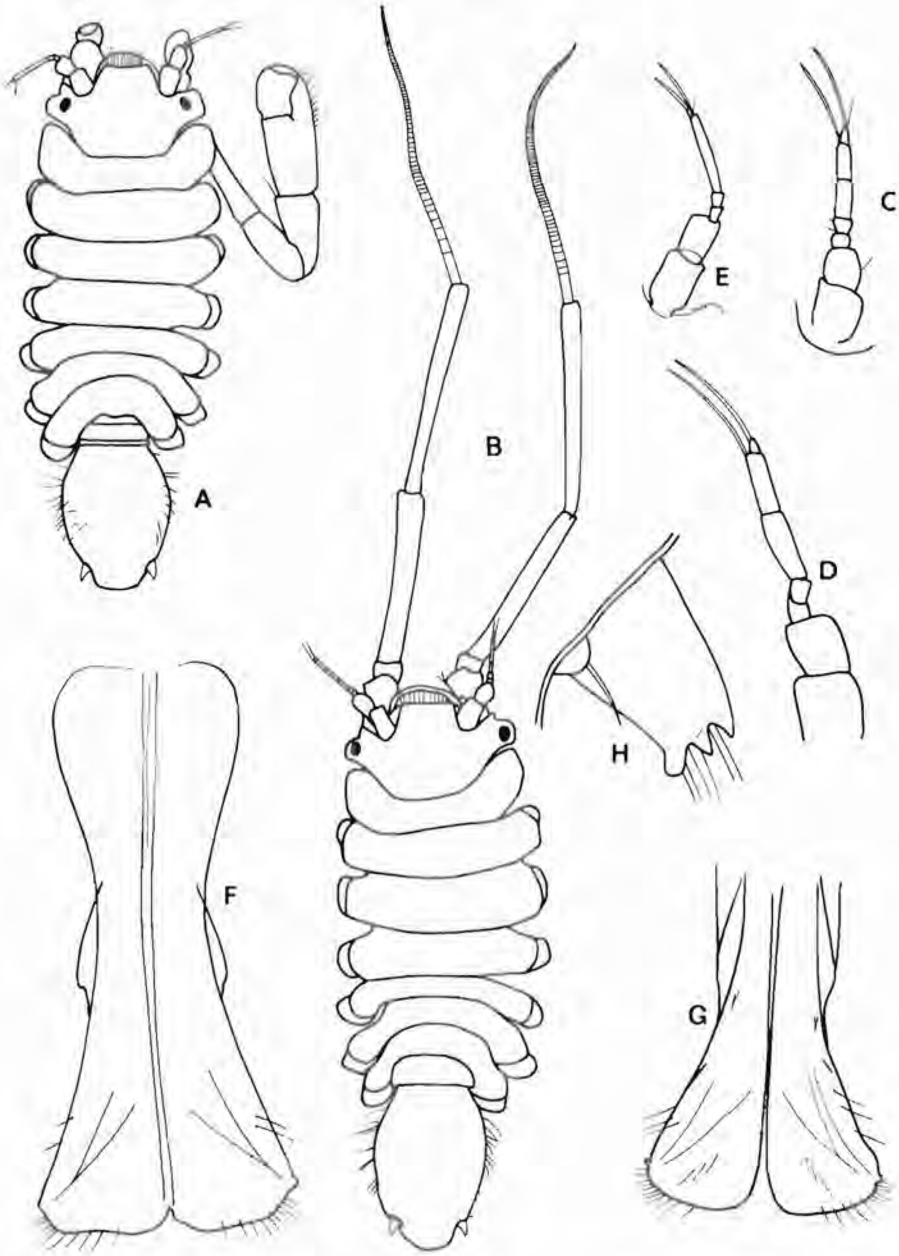

Fig. 22. *Munna varians* new species. A, male holotype of 3.5 mm from Sta. 73, in dorsal view; B, male of 5.0 mm from Sta. 74, in dorsal view; C–E, first antenna: C, male of 0.85 mm from Sta. 160; D, male of 1.6 mm from Sta. 160; E, male of 4.0 mm from Sta. 3; F, first pleopods of male of 1.6 mm from Sta. 160; G, distal part of first pleopods of male of 2.3 mm from Sta. 160; H, uropod of male of 5.0 mm, Sta. 74. A, B, x 10; C, x 45; D, F, H, x 90; E, x 20; G, x 70.

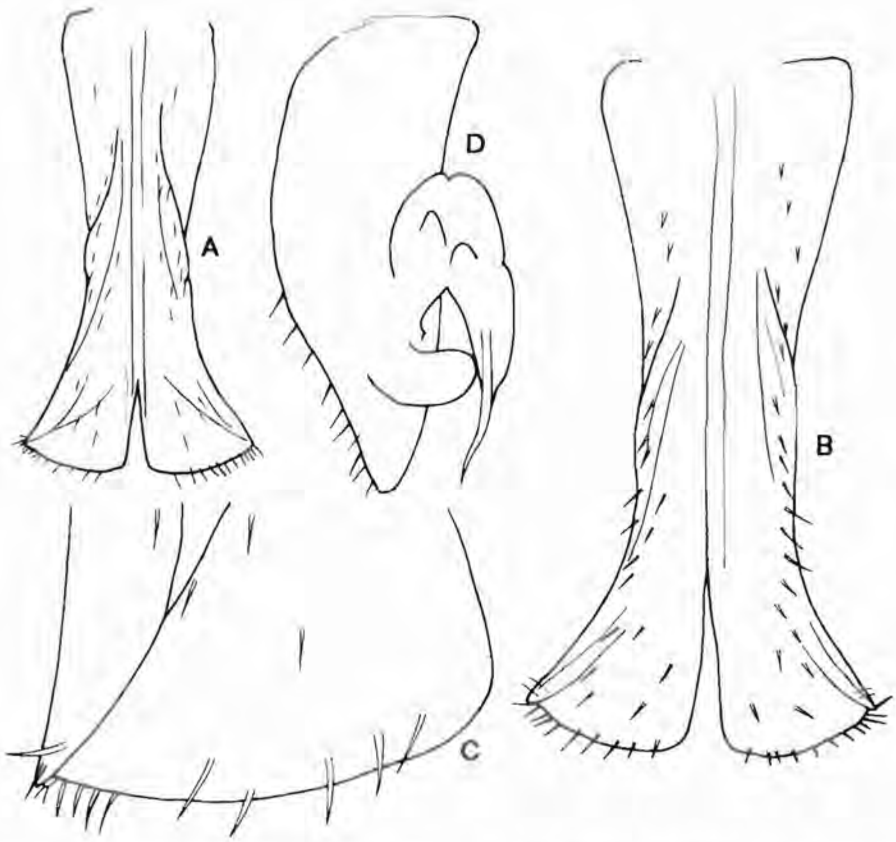

Fig. 23. *Munna varians* new species. A, B, first pleopods of male; A, male of 3.7 mm from Sta. 160e; B, male of 4.0 mm from Sta. 3; C, posterior part of first pleopod of male of 3.7 mm from Sta. 160e; D, second pleopod of male of 1.6 mm from Sta. 160. A, x 42; B, x 67; C, D, x 187.

ultimate article then is very short, being the shortest and narrowest of all, it and the previous article bear a distal sensory filament. In the 7- and 8-articulated first antennae the long penultimate article of the 6-articulated antenna is divided respectively in 2 and 3 subarticles, but otherwise the shape of the antenna is the same. It seems to us that Menzies (1962) attached too much importance to the number of articles in the first antenna as a taxonomic character. In our material this character shows to be quite variable.

The second antennae are longer than the entire body. The first three articles are short and wide. The two following are slightly narrower than the first three, and much longer. They are of almost equal

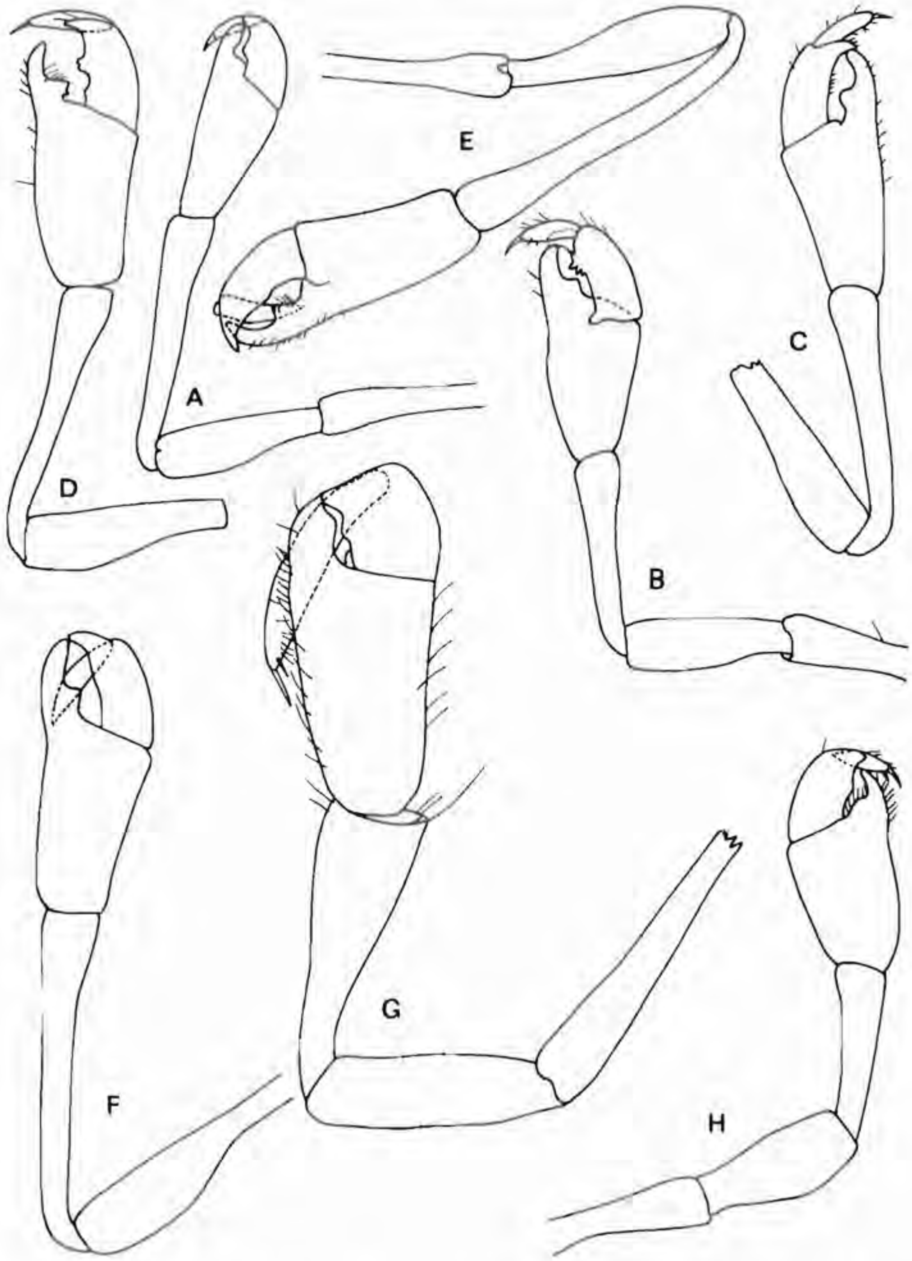

Fig. 24. *Munna varians* new species, first peraeopods of males. A-F, type I; G, H, intermediates between types I and II. A, male of 2.5 mm from Sta. 160g; B, male of 2.5 mm from Sta. 74; C, male of 2.4 mm from Sta. 160; D, male from Sta. 160e (leg found loose, therefore size of male unknown); E, male of 2.3 mm from Sta. 160; F, male of 2.2 mm from Sta. 160; G, male of 3.7 mm from Sta. 160e; H, male of 2.3 mm from Univ. Cape Town Sta. 115A. A-H, x 20.

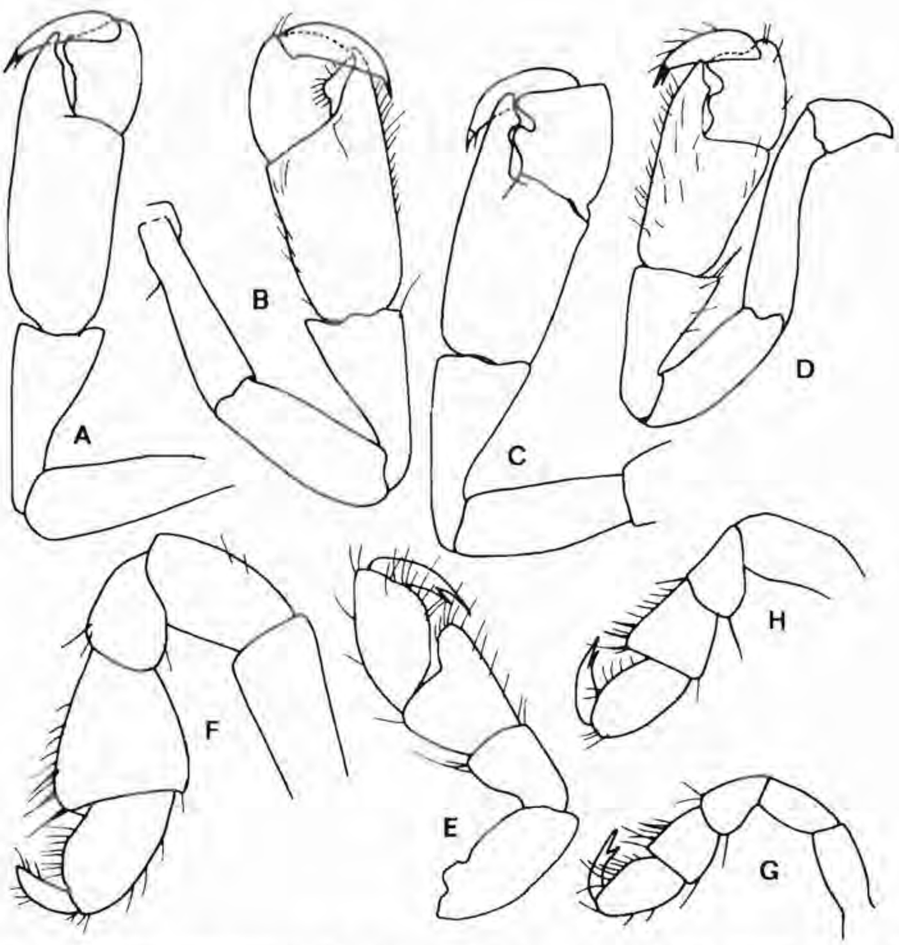

Fig. 25. *Munna varians* new species, first peraeopods of males (A-G) and female (H). A-D, type II; E-G, type III; H, female. A, male of 5.0 mm from Sta. 74; B, male of 3.7 mm from Sta. 160; C, male of 3.4 mm from Sta. 3; D, male of 3.1 mm from Sta. 73; E, male of 3.1 mm from Sta. 3; F, male of 1.6 mm from Sta. 160; G, male of 1.0 mm from Sta. 160; H, female of 3.0 mm from Sta. 160e. A-D, x 20; E, G, H, x 45; F, x 90.

length, although the distal of the two is usually slightly narrower and longer than the proximal; each is more than twice as long as the first three articles combined. The first article of the flagellum is somewhat narrower and somewhat less than half as long as the last peduncular segment. The flagellum is about as long as or slightly shorter than the two longest segments of the peduncle together; it consists of 37 to 66 articles.

The mandible has a large three-articulated palp. The incisor process ends in about 5 teeth and has a setal row of 5 setae. The molar process is almost as long as the incisor process and is more or less cylindrical. The distal article of the palp ends in several setae, while some spines are present on the outer margin of the penultimate article.

The maxilliped has three coupling hooks. The epipod reaches far beyond the basal segment of the palp. The second segment of the palp is more than twice as long as the first. The first three segments are wide, the last two much narrower, the ultimate being the narrowest of all.

The shape of the first peraeopod of the male varies so strongly in this material that at first we were inclined to recognize two or three distinct species in it. However, a careful examination of the extensive material showed intermediate forms and it is likely that the differences in the shape of the first peraeopod are only due to sex, age, and individual variation. The three main forms that we could recognize are the following:

I. The males of this type have the first peraeopods best developed and longest. The peraeopod here is much longer than the body, with the basis, ischium, and merus excessively elongated. The basis may be more than 5 times as long as wide. The ischium is then 4 to 5 times as long as wide, being narrowest in the basal part, widening in the distal half. The merus is longer than the ischium and is 4.5 to 6 times as long as wide, being narrowest at the base and widening gradually distally, the distal margin being twice as wide as the basal. The carpus is somewhat wider than the distal part of the merus and it also widens distally. The palmar portion of the carpus is about 1.5 times as long as wide; this palmar portion bears at the outer distal part a strong anterior projection, which is about as long as the width of the distal part of the palm. This projection resembles the fixed finger of a chela, ends in a blunt somewhat incurved tip and bears a blunt tooth on its inner margin. The propodus acts as the movable finger and ends in a blunt somewhat incurved tooth, which opposes the distal tooth of the fixed finger. The inner margin of the propodus (the cutting edge) bears in the middle a usually inconspicuous tooth. The propodus is about twice as long as wide and about as long as the prolongation of the carpus. The dactylus is normal and slender, it is implanted usually somewhat below the tip of the propodus. It ends in a sharp tooth below which there is

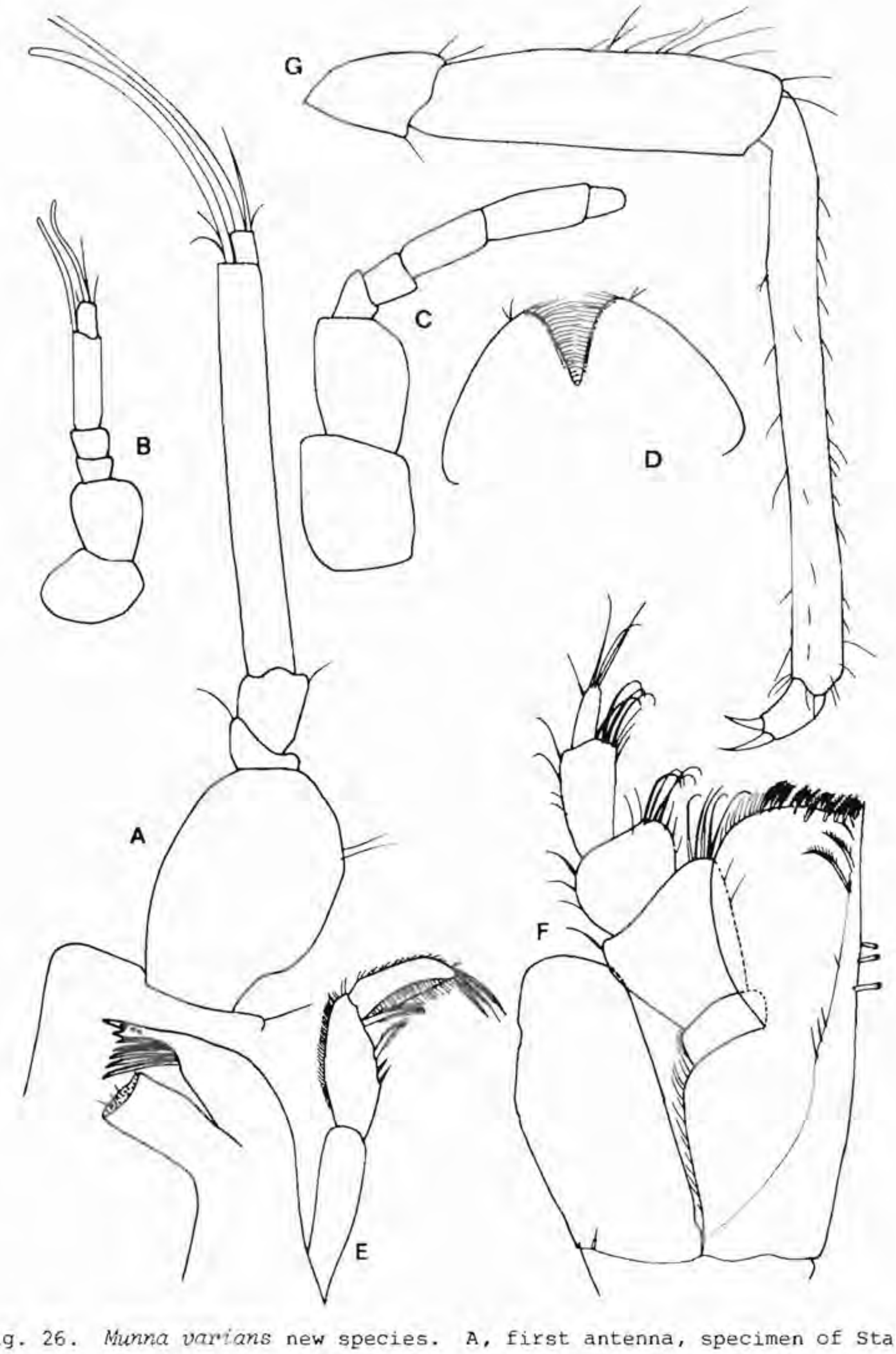

Fig. 26. *Munna varians* new species. A, first antenna, specimen of Sta. 74; B, C, first antenna of specimens from Sta. 160f; D, upper lip of male of 3.1 mm from Sta. 73; E, mandible of male of 3.1 mm from Sta. 73; F, maxilliped of same specimen; G, seventh peraeopod of male of 1.6 mm from Sta. 160. A, x 107; B, C, x 25; D, E, F, x 62; G, x 90.

a movable spine. This type of chela was found in males with a total length of 2.2 to 3 mm.

II. The second type has about the same shape of the "chela" as the first, but the entire leg is more robust. The palm is less than 1.5 times as long as wide and the propodus is twice or less than twice as long as wide. The cutting edge of the propodus usually shows a distinct blunt tooth in about the middle; in some specimens this tooth is crenulate. Like the chela the basis, ischium and merus are shorter and stouter, although having more or less the same general shape of those of the first type. The merus is 2 to 4 times as long as it is wide distally. The ischium is 2.3 to 3.6 times as long as wide. The examined males are 2.5 to 4.0 mm long, thus being as long as, and longer than those of Type I. Intermediate forms are found.

III. The third type of males are those in which the first peraeopods do not form the peculiar chela-like structure seen in types I and II. In this third form all segments are short and broad. The ischium is 1.8 to 2.3 times as long as wide, and the merus 1.1 to 1.5 times. The carpus is about as long as wide, it gradually widens distally and has the anterolateral angle not, slightly, or more distinctly produced; in the latter case it forms a blunt lobe, which by far fails to reach the middle of the propodus. The propodus is about twice as long as wide, it is oval with the dorsal margin less convex than the ventral. The dactylus is implanted on the top of the propodus. It is slender, shorter than the propodus and ends in two teeth. The males of this type measured 1.0 to 3.1 mm.

Although many of the males can be assigned to any of these three types, there are several which do not fit any or are intermediate between them. The third type is the least specialized and practically all of the smaller males belong there. However, some of the large males also show this type. Type I seems to be the most specialized of the three, but evidently this specialization is not tied to age, as of both other types specimens have been found larger than the largest of type I. This fact was the cause that we at first were inclined to suspect that two or three distinct species were involved. But the presence of intermediate forms, the fact that in one population all three types could be found, and that, apart from those in the first peraeopod, no differences between the specimens assigned to the three types could be found, not even in the first and second male pleopods, made us finally decide that we have before us a single species, the males of which show an unusual variability of the first peraeopod.

The female has the first peraeopod quite similar to that of the simplest form of the third type of the males. This peraeopod is not enlarged at all.

The following peraeopods are long and slender, they ar similar in shape. The seventh peraeopod has the merus short, being as long as or shorter than the ischium, and 1.5 to 2 times as long as it is wide distally. The carpus is about 2.5 times as long as the merus, and 3 to 4 times as long as wide. Carpus, merus and ischium are of about the same width. The propodus is narrower. It is longer than merus and ischium together, and about 10 times as long as wide. The dactylus measures about 1/5 of the length of the propodus and ends in two strong claws.

The first pleopods of the male are elongate and slender. Each pleopod is about 6 times as long as it is wide at the base. The inner margin is about straight, the outer is concave over the larger part of its length. Just above the base the pleopod widens slightly to narrow gradually from there on as far as 2/3 of the length of the pleopod, where its smallest width is reached; the width there being 3/5 of that at the base. In the distal third the pleopod widens again, being widest distally. The distal width is slightly more than the greatest width in the basal half. The distal margin of each pleopod is regularly, but slightly, convex, sometimes it is almost straight or even shows a slight concavity in the middle. The posterolateral angle is somewhat produced and rounded, it forms a distinct angle with the posterior margin. The posterior margin carries 8 to 12 setae. The lower surface of the pleopod bears an elongate oblique low lobe in the narrowest portion. Scattered hairs are visible in the lower (= exposed) surface, especially in the distal half.

The second male pleopod has the sympod oval with the distal part triangular, narrowing to a rather sharp apex with rounded tip. A number of spine-like setae (usually 10 to 12, sometimes up to 14) are implanted in the distal part of the outer margin on the sympod. The copulatory organ tapers regularly in the distal part and reaches to the end of the sympod. The exopod is small and oval.

The uropods are small and placed in the distal quarter of the lateral margin of the pleotelson. The superior ramus is very small and hardly visible, it bears a distal seta. The inferior ramus, although small is much larger than the superior, and usually is the only part seen. It is oval but ends in a narrowly truncated tip; the short distal margin is provided at either side by a small blunt tooth between which a still smaller tooth is present, the latter often is obscure.

Size. The total length of the examined males lies between 1.0 and 5.0 mm, that of the females between 0.9 and 3.7 mm, ovigerous and gravid females of 1.8 to 3.6 mm have been examined. Pouch young reach a length of 1 mm.

Habitat. The species was found in the tidal zone both in rock pools that are rarely reached by the tides and far out in the surf zone; furthermore it was taken by dredge in- and outside the *Macrocystis* belt in depths of up to 40-60 m. It was found under stones, in the *Lithothamnion* zone, among algae, and even on floating *Macrocystis*.

Paramunna antarctica (Richardson)

Austrimunna antarctica Richardson, 1906a, Documents sci. Sci. nat. Expéd. Antarctique Française, Crustacés (Isopodes), p. 20, text-figs. 24-26, pl. 1, fig. 7.

Norwegian Scientific Expedition

Stoltenhoff Island: off north-eastern coast (Sta. 116, 1 male).

Remarks. The single specimen at hand is referred with some hesitation to *Paramunna antarctica*, partly because the specimen is very small and incomplete and partly because it shows some, although small, differences from Richardson's (1906) original description. So the front is more truncate and the first and second antennae are longer.

Nordenstam (1933), who examined some of the type material, gave additional details of the species, most of which agree well with those shown by our specimen, except that in our specimen, a male of 1.1 mm, the pleotelson does not have the denticles on the lateral margin in front of the uropods as does Nordenstam's male of 1 mm.

Our specimen also agrees well with Hale's (1937, p. 38) male, although the pleotelson in the present specimen is relatively wider. The indistinct coxal plates of the peraeon described by Hale are also visible in the male from Tristan da Cunha. In our specimen, however, the flagellum of the second antenna consists of 7 articles, not 11 as found by Hale,

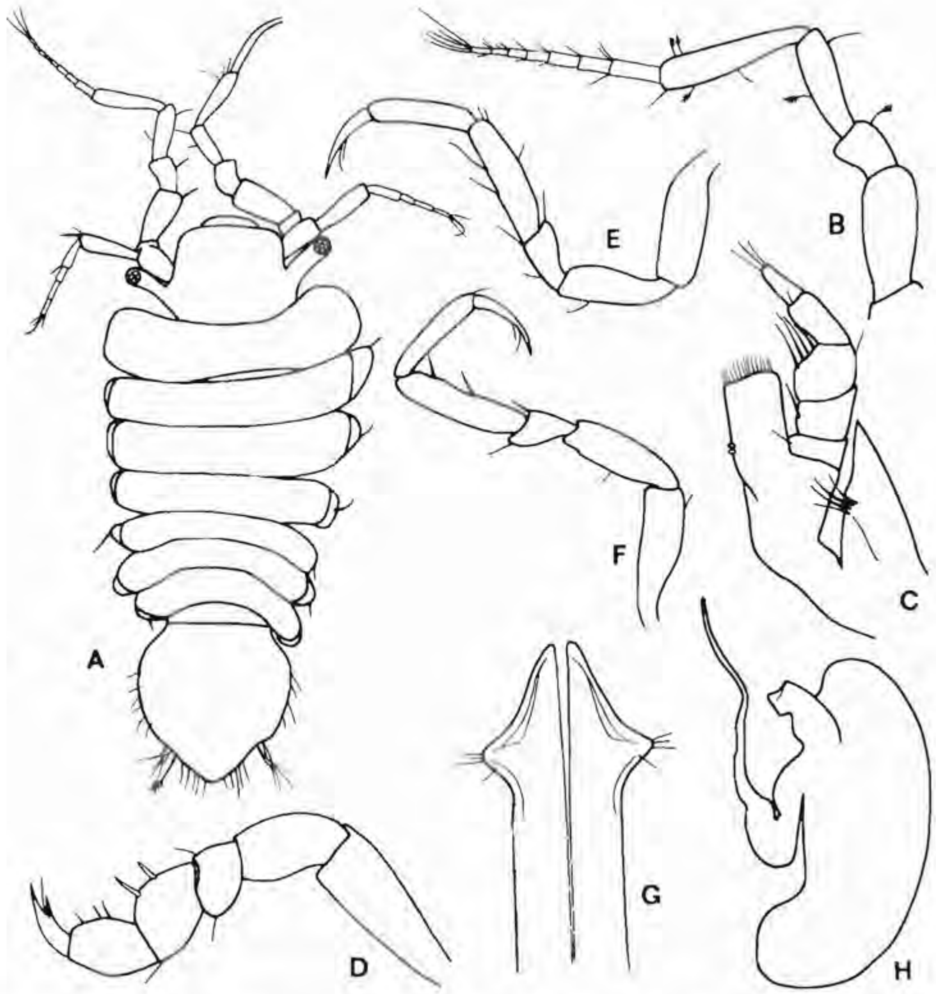

Fig. 27. *Paramunna antarctica* (Richardson), male from Sta. 116. A, animal in dorsal view; B, second antenna; C, maxilliped; D, first peraeopod; E, fifth peraeopod; F, seventh peraeopod; G, first pleopods; H, second pleopod. A, x 32; B, D, E, F, G, x 75; C, H, x 125.

nor 6 as described by Richardson.

The variability of the various characters should be better known before the status of the various specimens assigned to the present species can be satisfactorily decided.

The generic position of the present species is open to some doubt; many of the genera of Munninae are not yet well defined. According to the key to the genera provided by Nordenstam (1933, p. 199, 200) the present specimen undoubtedly is an *Austrosignum*. However, Nordenstam's

(1933, p. 241) diagnosis of that genus does not entirely fit: the distinction between the anterior 4 and the posterior 3 segments of the peraeon is not clear, and there certainly is no "waist" in the present specimen; the pleotelson is not pointed posteriorly; coxae are visible at some of the anterior thoracic segments, be it that they are not very clearly indicated. However, some of the species that Nordenstam himself assigns to *Austrosignum* do not agree with his diagnosis of that genus either: his *Austrosignum falklandicum* does not have the eyes on slender eye peduncles. Menzies (1962, p. 50) accepted as only good criterion to distinguish *Austrosignum* from *Paramunna*, the absence in *Austrosignum* of coxal plates from peraeon segments 1 to 4, and their presence on peraeon segments 5 to 7. Several of the species that Menzies brought to *Austrosignum* are not oblong, with a distinct "waist", nor are the eyes placed on slender peduncles, nor is the pleotelson pointed. As in some of Menzies' *Austrosignum* species coxal plates are indistinctly indicated on the anterior peraeon segments, none of the characters used to distinguish *Austrosignum* from *Paramunna* seem to be clear cut, and for the time being at least, it seems best to synonymize the two genera.

Size. The present male specimen has a total length of 1.1 mm.

Habitat. The present specimen was dredged at a depth of 30 to 45 m on a hard bottom with sponges, in and just outside the *Macrocystis* belt. Richardson (1906) reported the species from a depth of 20 m in mud, Nordenstam (1933) from 12 to 15 m on a bottom of sand and algae, while Hale's (1937) material came from a depth between 2 and 4 fathoms (= 3.7 to 7.3 m).

Distribution. The type locality is Wiencke Island, Graham Land, at 64°50'S 63°25'W (Richardson, 1906). Nordenstam reported the species from South Georgia and Hale from Adélie Land.

Pleurogoniidae Nordenstam, 1933

Nordenstam (1933, pp. 199, 200, 245) founded the "sub-group Pleurogoniini", which Menzies (1962, p. 28, 55) elevated to the rank of a family. Menzies' spelling Pleurogonidae should be corrected to Pleurogoniidae.

Pleurogonium minutum Beddard

Pleurogonium minutum Beddard, 1886, Proc. zool. Soc. London, 1886, p. 102; Beddard, 1886a, Rep. sci. Res. Voy. Challenger, (Zool.), vol. 17 pt. 1, p. 32, pl. 11, fig. 13.

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 16, 10 specimens; Sta. 64, 5 specimens; Sta. 68, 6 specimens; Sta. 73, 1 specimen; Sta. 74, 4 specimens).

Nightingale Island: near landing place (Sta. 94, 9 specimens).

Stoltenhoff Island: off north-east coast (Sta. 116, 18 specimens).

Inaccessible Island: South Point (Sta. 156, 1 specimen; Sta. 157, 2 specimens), Blenden Hall (Sta. 160b, 2 specimens).

Size. The length of the specimens varies between 0.5 and 1.5 mm. Two ovigerous females from Sta. 116 are both 0.8 mm long. The type specimen was said by Beddard to be 1 mm long.

Habitat. The Norwegian expedition collected the species mostly in the littoral zone in rock pools, under stones that are covered at high tide, and also far out in the surf zone among *Lithothamnion* and rocks. But the species was also obtained by dredging in 5 to 8 m and in 30 to 45 m, usually on a hard bottom. The type specimen was obtained near Tristan da Cunha in a depth between 100 and 150 fathoms (= 183 and 274 m).

Remarks. The species was originally described by Beddard from Tristan da Cunha and so far as we know it is endemic to the archipelago. The present material shows that the species is not strictly a deep sea species as was often thought, but that it commonly occurs in the littoral zone.

Pleurosignum chilense Menzies

Pleurosignum chilense Menzies, 1962, Lunds Univ. Årsskr., n.ser. sect. 2 vol. 57 no. 11, p. 56, fig. 13.

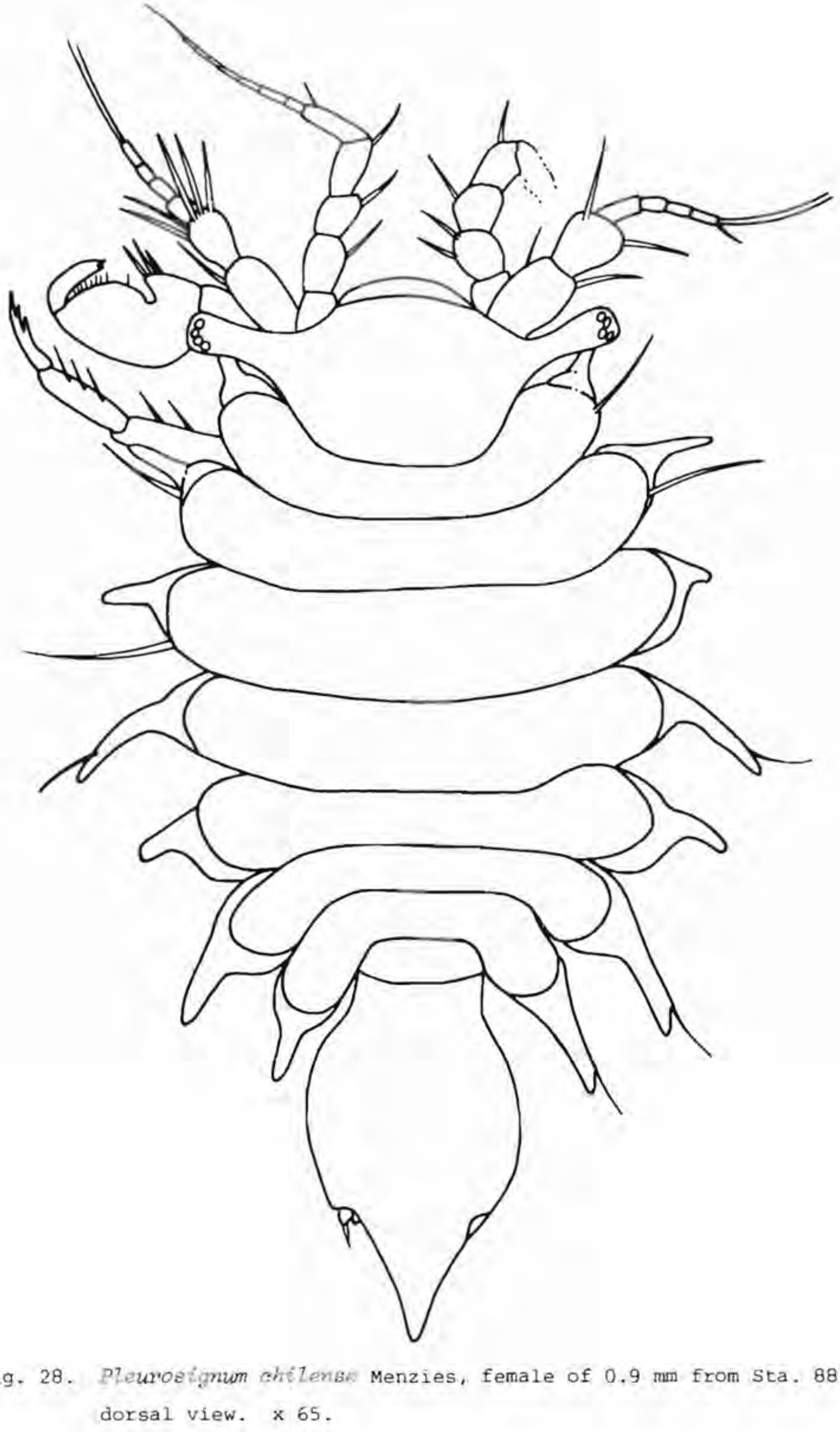

Fig. 28. *Pleurosignum chilense* Menzies, female of 0.9 mm from Sta. 88, dorsal view. x 65.

Norwegian Scientific Expedition

Nightingale Island: Middle Island (Sta. 85, 1 female).

Remarks. The single specimen at our disposal agrees in almost all details with the description and figures published by Menzies (1962) of *Pleurosignum chilense*. There are, however, a few differences which may be due to individual variation: The front of the present specimen is less protruding. A strong seta is placed behind the coxal plates of at least the first three peraeon somites. The last three peraeomeres in the present specimen are less wide and thereby relatively longer than in Menzies' specimen. The pleotelson is somewhat narrower and more narrowly pointed in our specimen, and the uropods are much smaller, being hardly visible in dorsal view.

As the specimen figured by Menzies is a male and ours a female, part of the differences may be due to sex.

For the time being it seems best to assign the present specimen to Menzies' species.

Size. The present female specimen is 0.9 mm long and 0.5 mm wide. The length of the male holotype was 0.87 mm, its width 0.37 mm (Menzies, 1962).

Habitat. The Tristan da Cunha specimen was taken among algae in the tidal zone, in an exposed place. Menzies (1962) reported his material from the tidal belt among kelp at a bottom of gravel and clay mixed with mud, and from a depth of about 50 m on a hard bottom with algae and sponges.

Distribution. So far the species has been reported only from southern Chile: Strait Magellan near the estuary of Rio los Ciervos, 53°11'S 70°55'W, and Golfo de Ancud, south of Punta Tenaum, 42°20'50"S 73°22'W.

Abyssianiridae Menzies, 1956

Antiasini Nordenstam, 1933, Further zool. Res. Swedish Antarctic. Exped., vol. 3 no. 1, pp. 198, 199, 200 (as "sub-group").

Abyssianiridae Menzies, 1956, American Mus. Novitates, no. 1798, p. 12.

Antiasidae Menzies, 1962, Lunds Univ. Årsskr., n.ser. sect. 2 vol. 57 no. 11, pp. 28, 59.

As shown below, the name *Antias* Richardson, 1906, is a junior homonym of *Antias* Distant, 1884, and thus cannot be used. Also the family name Antiadidae based on the generic name *Antias* Richardson, is invalid, and therefore the next oldest family name Abyssianiridae Menzies, 1956, which Wolff (1962, p. 69) showed to be a synonym of Antiadidae, must be used for the present family.

The family name Antiadidae has often been spelled Antiasidae. However, as the genitive of Antias is Antiadis and its stem thus is Antiad-; a family name based on this name should be spelled Antiadidae.

Santia new name

Antias Richardson, 1906, Bull. Mus. Hist. nat. Paris, vol. 12, p. 188.
Type species, by original designation and monotypy: *Antias charcoti* Richardson, 1906, Bull. Mus. Hist. nat. Paris, vol. 12, p. 188. Gender: feminine. Invalid because a junior homonym of *Antias* Distant, 1884, Biologia Centr. Amer., (Zool.) (Hemipt. Heter.) vol. 1, p. 298 (Insecta Hemiptera).

The name *Antias*, which until now was regularly used for the present genus proves to be preoccupied, and thus invalid. As no synonyms of *Antias* Richardson are known to us, we are obliged to propose a new name for the genus. As a replacement name for *Antias* Richardson, 1906, we now propose *Santia* new name, an anagram of *Antias*, which should be treated as a feminine name. Although Antias (= tonsil) is likewise a feminine word, it has generally been incorrectly treated as masculine.

Type species: *Antias charcoti* Richardson, 1906.

Santia hispida (Vanhöffen)

Antias hispidus Vanhöffen, 1914, Deutsche Südpolar-Exped., vol. 15, p. 533, fig. 60.

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 16, about 100 specimens; Sta. 46, 4 specimens; Sta. 47, 41 specimens; Sta. 49, 8 specimens; Sta. 64, 9 specimens; Sta. 65, 1 specimen; Sta. 68, 1 specimen; Sta. 71, 23 specimens; Sta. 73, 15 specimens; Sta. 74, 7 specimens), Seal Bay (Sta. 51, 7 specimens; Sta. 169, 20 specimens).

Nightingale Island: near landing place (Sta. 94, 21 specimens; Sta. 103, 1 specimen), Sea Hen Rock (Sta. 101, 3 specimens), east of landing place (Sta. 108, 1 specimen; Sta. 111, 2 specimens).

Stoltenhoff Island: landing place at north side of island (Sta. 113, 56 specimens), north-east coast (Sta. 116, 8 specimens).

Inaccessible Island: near Blenden Hall (Sta. 146, 7 specimens; Sta. 160, 4 specimens; Sta. 160b, 3 specimens; Sta. 160f, 1 specimen; Sta. 160g, 6 specimens), south of East Point (Sta. 154, 10 specimens), South Point (Sta. 157, 57 specimens).

Description. The species, which is represented here by a large material, in our opinion should be assigned to *Santia hispida* (Vanhöffen). However, Vanhöffen's description is not very detailed and the additional descriptions published later are not based on topotypical material. Of the ten species of *Santia* listed by Menzies (1962, p. 59-63, as *Antias*), it is with *S. hispida* that our specimens shows the greatest resemblance (keys to *Santia* (as *Antias*) species are provided by Menzies & Miller (1955) and Wolff (1962)). It seems possible, however, that a more thorough study of the specimens assigned by various authors to the present species will prove that more than one species has been misplaced under the name *Antias hispidus*.

The dense dorsal and lateral spination of the body of our specimens is much like that described in *S. hispida*, while the body also has the same ovoid outline. The front in our specimens is truncated or even slightly concave in the middle, while Nordenstam (1933, p. 201) described this feature in his "*Antias hispidus*" as "rostral margin strongly convex", Menzies & Miller (1955, p. 385) stated "Frontal border of head evenly convex", and Wolff (1962, p. 70) "Frontal margin forming an even convex arch". The possibility cannot be entirely excluded that what these authors considered to be the front was not the true front but the anterior margin of the projecting lower lip, which indeed is evenly convex.

In our specimens the preocular lobes are well developed and distinct. Vanhöffen (1914) in the original description of *S. hispida* did not mention these preocular lobes and they are not shown in his figure, which, of course, is no proof that they were absent in his material. Nordenstam (1933, p. 201) in his supplementary description of the

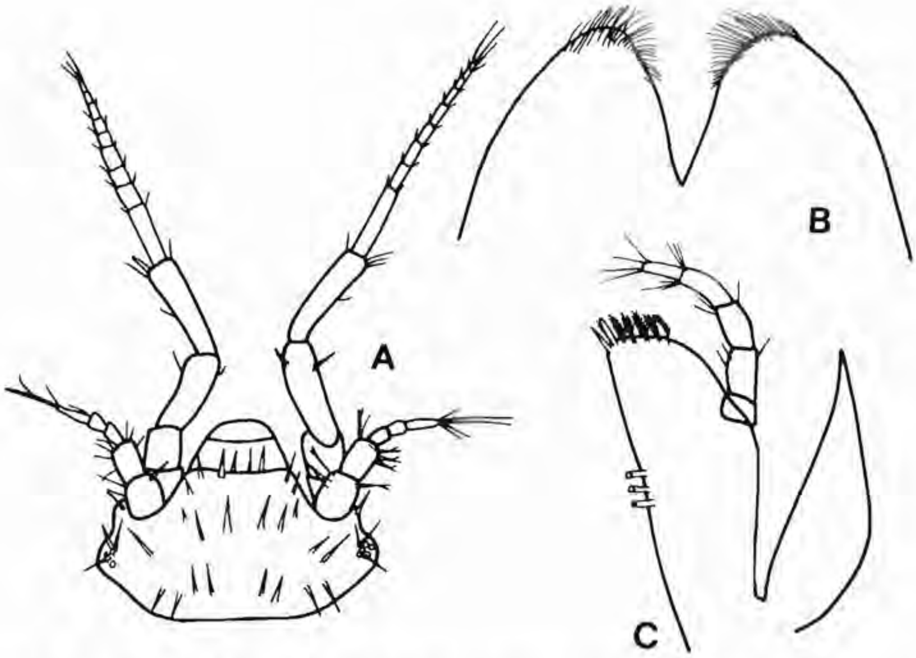

Fig. 29. *Santia hispida* (Vanhöffen), female of 17 mm from Sta. 111. A, cephalon and antennae in dorsal view; B, lower lip; C, maxilliped. A, x 59; B, x 210; C, x 105.

species (based on material from the Falkland Islands and from Graham Land) stated "there is a forward-directed tooth-like projection in front of the eyes". Wolff (1962, p. 70), however, in his key said of *S. hispida*: "No projection in front of the eyes". There is thus a great deal of contradictory information on this point.

The specimens from the Auckland Islands identified by Stephensen (1927) have fewer spines than our specimens and are less slender; we are far from convinced that they belong to the same species.

Like in so many other Asellota, a thorough revision of the present genus is much needed, with a detailed redescription of the types or of topotypic material. Although we are not convinced that our present material does not belong to an undescribed species, we think it better, for the time being at least, to assign it to Vanhöffen's *S. hispida*, to which it at least is closely related.

S i z e . The length of the examined specimens varies from 0.6 to 1.8 mm. The 17 ovigerous or gravid females measure 1.0 to 1.8 mm; they carried from 7 to 17 eggs or young. The diameter of the eggs is about 0.2 mm.

Habitat. Our material has been found in a great variety of habitats. In the tidal zone it occurred as well in tide pools that were rarely reached by the high tide, as in the very exposed extreme outer part of the surf zone. It was found here under and among rocks, among *Lithothamnion* and other algae. Farther out it was dredged in depths of 5-10, 30-45, 40, and 40-60 meters, both in- and outside the *Macrocystis* belt, usually on hard bottom with rocks, sponges and algae, but also on a sandy bottom with algae.

Distribution. The type locality is St. Paul Island, southern Indian Ocean (Vanhöffen,1914), from where it also has been reported by Kensley (1976, p. 293, fig. 12), who also had material from nearby Amsterdam Island. Furthermore the species has been reported from the Falkland Islands and Graham Land (Nordenstam,1933) and the Auckland Islands (Stephensen,1927).

Santia compacta new species

Norwegian Scientific Expedition

Nightingale Island: off north-east coast (Sta. 88, 3 males, 7 females).

Description. The body is shorter and broader than in *S. hispida*; the present species is much more robust than the previous. The number of spines is also decidedly less than in *S. hispida*: there are two pairs of submedian spines on the cephalon and one on each of the following peraeon somites. In the second, third and fourth somites a second pair is placed outside the submedian pair; the spines thereby form a transverse row of four on each somite. The thoracic epimera 1 to 6 bear one spine just inside the middle of the lateral margin, and sometimes are also provided with an anterolateral spine. The cephalon is about twice as wide as long. The front is truncate and evenly concave in the middle. Distinct triangular preocular lobes are placed before the well developed eyes. Coxal plates are visible in the second to seventh peraeon somites; they bear one or a few spines. The pleotelson is ovate and ends in a median rounded apex. Its lateral margin shows a tooth just in front of the uropods. The upper surface of the pleotelson bears two submedian pairs of spines and a few spines places more laterally.

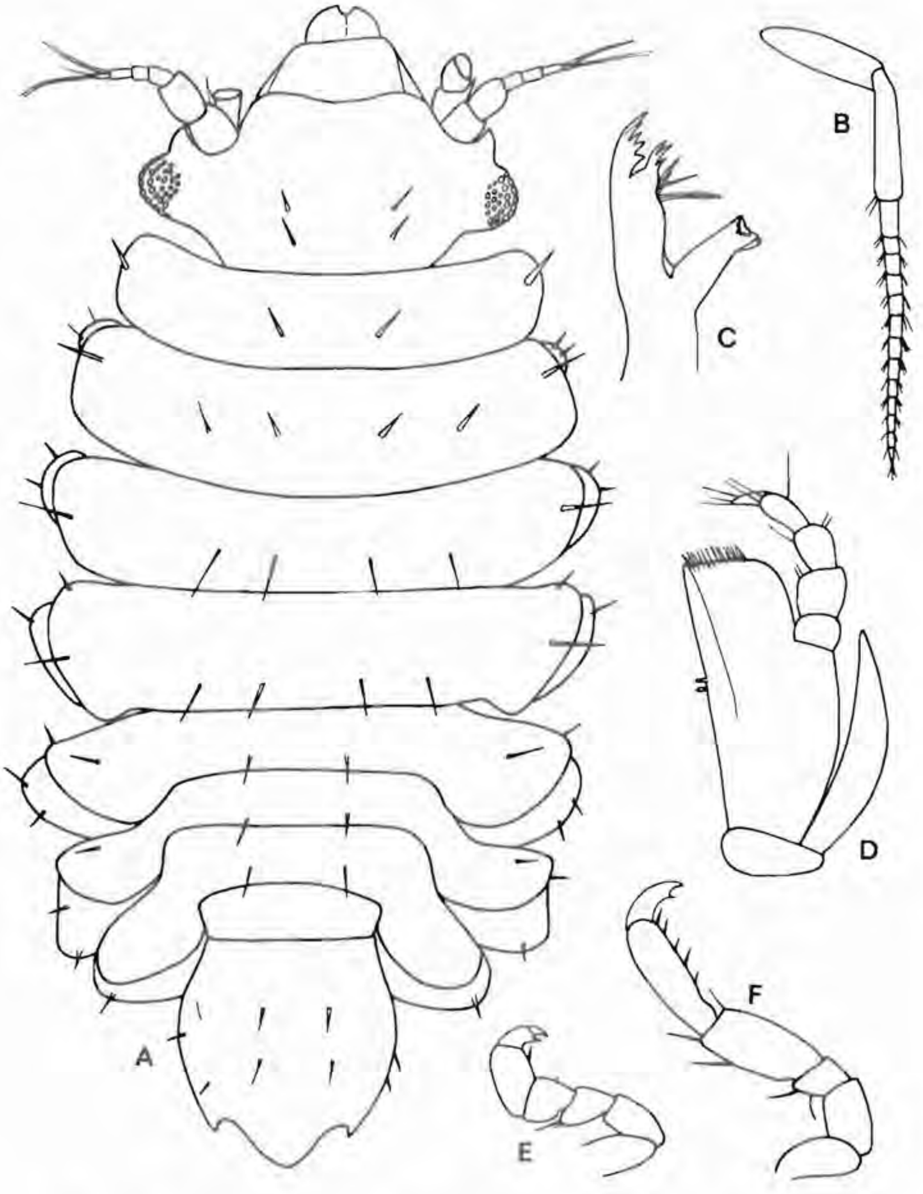

Fig. 30. *Santia compacta* new species, specimens from Sta. 88. A, specimen of 1.9 mm in dorsal view; B, antenna; C, mandible; D, maxilliped; E, first peraeopod of female; F, second peraeopod of female. A, B, x 36; C, x 110; D, x 62; E, F, x 32.

The eyes are well developed, and consist of 12 to 20 ocelli; there are no hairs.

The second antenna is slender. The last two articles of the peduncle are elongate being the longest of the articles. The flagellum consists of 8 to 13 articles.

The first antenna consists of six articles in the larger specimens, of five in the smaller. The two basal articles of the peduncle are longer and much wider than the others. The third peduncular article is small and resembles the basal article of the flagellum. The last article of the flagellum is small. A sensory filament is present on the last two articles of the flagellum.

The mandible is peculiar in that the palp is totally lacking. The incisor part ends in several teeth and bears a lacinia mobilis. The molar process narrows distally to widen again just before the end.

Of the two laciniae of the maxillula of the outer is longer and almost twice as broad as the inner, it bears distally some strong short spines and some setae. The inner lacinia ends in a group of setae. Of the three lobes of the maxilla the inner is widest and all three end in setae.

The maxilliped has the palp narrow and 5-articulated; the basal article is widest and shortest, the following three articles become gradually narrower and longer. The fourth article is the longest, the fifth is short and narrow. There are two coupling hooks. The epipod is distally pointed and reaches about to the base of the palp or somewhat beyond; its inner margin is about straight, the outer convex.

The first peraeopod is the shortest, the fourth the longest. The dactylus of the legs ends in two teeth. In the first peraeopod the propodus, carpus and merus are short and robust, in the fourth both the propodus and the carpus are elongate. The propodus of the first leg bears a strong distal spine on the posterior margin; there are no spines on the carpus, but the merus shows a strong anterodorsal spine. In the second to seventh legs the propodus has five distinct posterior spines.

The operculum of the female is pyriform and slightly emarginate at the top. The first pleopod of the male is elongate and narrow, it narrows distally and is slightly curved outwards there; the distal margin bears a few hairs. As far as could be made out the second pleopod of the male is of the usual type also found in *S. hispida*, but our preparation was not too good.

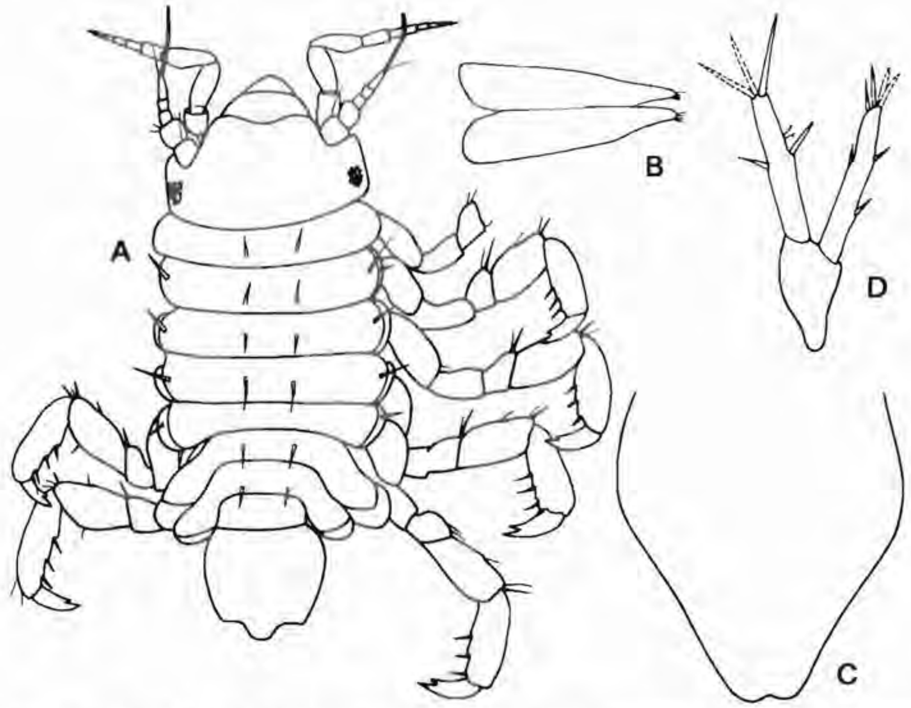

Fig. 31. *Santia compacta* new species, specimens from Sta. 88. A, specimen of 0.8 mm in dorsal view; B, first pleopods of male; C, operculum of female; D, uropod. A, D, x 52; B, C, x 86.

The uropod is about as long as the pleotelson. The exo- and endopod are elongate and of about equal length; they are longer than the protopod, have one ore two spines on the lateral margins and also end in a few spines.

Size. Males are up to 2.0 mm long, females up to 1.9 mm (the largest female is ovigerous). The smaller specimens are 0.9 mm long.

Habitat. The species was taken at a depth of 20 to 40 m on a hard bottom with stones that were heavily overgrown with sponges, etc.

Distribution. *Santia compacta* is only known from the type locality, N.E. of Nightingale Island.

Remarks. This new species resembles *Santia hispida*, the only other species of the genus known from Tristan da Cunha, but it may immediately be distinguished by the relatively broader body, the more robust legs, and the presence of fewer spines on the body. In *S. hispida* the first peraeopod has one larger and several smaller bifid spiniferous hairs on the posterior margin of the propodus, the carpus has three fairly large bifid setae there. The second to seventh legs of *S. hispida* are longer and more slender than in *A. compacta*. The propodus of the second to fifth legs in *S. hispida* bears three strong bifid setae on the posterior margin, in the sixth and seventh legs there are four such spines there.

The absence of the mandibular palp was checked in two specimens of *S. compacta*, of which both mandibles were examined. Most other species of *Santia* do have a mandibular palp (this palp has been described for *Santia uniramea* (Menzies & Miller, 1955), *S. mawsoni* (Hale, 1937), *S. marmorata* (Vanhöffen, 1914), *S. hispida* (Vanhöffen, 1914), *S. hofsteni* (Nordenstam, 1933), *S. charcoti* (Richardson, 1906), *S. laevifrons* (Menzies, 1962), and *S. dimorpha* (Menzies, 1962). We also found it in *S. hispida*. The only species of *Santia* which is described as lacking the mandibular palp is *Santia hirsuta* (Menzies, 1951) from California. *Santia compacta* may be distinguished from *S. hirsuta* by having far fewer dorsal spines, by the shape of the cephalon and the preocular processes, by the more elongate pleotelson, which has distinct teeth before the implantation of the uropods, by the more slender antennae, the different shape of the female operculum, and the more slender and less spiniferous uropods.

In Wolff's (1962, p. 70-71) key to the species of the present genus, *S. compacta* would key out close to *S. hirsuta* and *S. uncinata*. If the absence of a mandibular palp be considered of generic importance, *S. compacta* and *S. hirsuta* should form a distinct genus.

Joeropsididae Nordenstam, 1933

Jaeropsini Nordenstam, 1933, Further Res. Swedish Antarctic Exped., vol. 3 no. 1, p. 190

Iaeropsini Nierstrasz, 1941, Siboga Exped. Monogr., vol. 32 pt.d, p. 288.

Jaeropsidae Menzies, 1962, Lunds Univ. Årsskr., n.ser. sect. 2, vol. 57 no. 11, pp. 28, 63.

The spelling of the present family name has, to our knowledge, never been correctly used. It is based on a genus, the name of which in the original publication (Koehler 1885, p. 1-7) was consistently spelled *Joeropsis*. In a later publication, issued in the same year, Koehler (1885a) used both the spelling *Joeropsis* (p. 54) and *Jaeropsis* (p. 61) for this generic name. Most later authors adopted the spelling *Jaeropsis* (e.g., Menzies, 1962; Wolff, 1962), although that of *Iaeropsis* was also used (e.g., by Nierstrasz, 1941, p. 288). The only correct spelling, however, is *Joeropsis*, and this is also the only spelling mentioned in Neaves' Nomenclator Zoologicus. There is no good reason not to use the correct spelling *Joeropsis* for the genus. A consequence of this is that also the family name has to be corrected. In most modern papers the spelling Jaeropsidae is used, but this spelling is incorrect for two reasons. The first, as pointed out above is that the name of its type genus is *Joeropsis*. The second is that the genitive of Joeropsis is Joeropsidis; the stem of the name thus is Joeropsid-, so that the correct spelling of the family name is Joeropsididae, not Joeropsidae (or Jaeropsidae as suggested by Menzies, 1962).

Joeropsis paulensis Vanhöffen

Jaeropsis paulensis Vanhöffen, 1914, Deutsche Südpolar-Exped., vol. 15, p. 531, fig. 59; Barnard, 1965, Ann. South African Mus., vol. 48, p. 201, fig. 2b; Kensley, 1975, Ann. South African Mus. vol. 67, p. 371.

Norwegian Scientific Expedition

Tristan da Cunha Island: Big Beach (Sta. 3, 45 specimens), Julia Point (Sta. 13, 1 specimen; Sta. 47, 24 specimens; Sta. 49, 12 specimens; Sta. 64, 2 specimens; Sta. 65, 6 specimens; Sta. 67, 8 specimens; Sta. 68, 8 specimens; Sta. 70, 1 specimen; Sta. 71, 7 specimens; Sta. 73, 2 specimens; Sta. 74, 2 specimens), Sandy Point (Sta. 39b, 1 specimen; Sta. 41, 1 specimen), Seal Bay (Sta. 51, 1 specimen; Sta. 169, 10 specimens).

Nightingale Island: Middle Island (Sta. 83, 4 specimens), near landing place (Sta. 90, 3 specimens; Sta. 92, 2 specimens; Sta. 94, 38 specimens; Sta. 96, 2 specimens; Sta. 112, 11 specimens), east of landing place (Sta. 106a, 1 specimen; Sta. 107, 5 specimens; Sta. 111, 7 specimens; Sta. 117, 12 specimens).

Stoltenhoff Island: north coast (Sta. 113, 72 specimens), east of landing place (Sta. 114, 6 specimens).

Inaccessible Island: near Blenden Hall (Sta. 128, 1 specimen; Sta. 146, 6 specimens; Sta. 160, 1 specimen; Sta. 160b, 2 specimens; Sta. 160f, 4 specimens), north-north-west of Blenden Hall (Sta. 149, 1 specimen), south of East Point (Sta. 154, 6 specimens), South Point (Sta. 157, 5 specimens).

Description. The present specimens from Tristan da Cunha agree well with the description that Vanhöffen (1914) gave of *Joeropsis paulensis*. However, as indicated by Barnard (1965, p. 201) the second segment of the palp of the maxilliped is distinctly lobed, and not linear as shown in Vanhöffen's fig. 59f. Also, the maxilliped is provided with three coupling hooks instead of one.

Colour. In specimens preserved in alcohol the colour gradually disappears, and small juvenile specimens are evenly yellowish. The eyes are black, but in a few cases they were light brown or yellow.

Size. The largest male in our material measures 5 mm, the largest female 4.4 mm. The length of the 15 ovigerous females varies from 2.4 to 4.4 mm; the number of eggs carried by a single individual is up to 20. The diameter of the eggs is 0.27 mm. There are 5 gravid females, each carrying about 7 juveniles in their pouch; the length of the juveniles is about 0.8 mm.

Habitat. In the Tristan da Cunha Archipelago the species was mainly collected in the littoral zone, in rock pools and under rocks, sometimes far out in the surf zone; it was dredged at depths of 3-12, 5-10 (twice), 40, 40-60 and 50-60 meters, usually on a hard bottom with algae etc., sometimes on a sandy bottom with algae. It was found under and among stones, among algae (also among *Lithothamnion*), and once in rhizomes of floating *Macrocystis*. Barnard (1965, p. 201) reported the Gough Island specimens from "Dell Rocks; West Point Reef (A 40.M 33; A 47.M 60; B 1.M 69; 1541)". In the mimeographed station list of the expedition these stations are explained as follows: A 40: "12.2.56. Dell Rocks. Area of rock pools about low tide level". A 47: "6.4.56. Marine collecting, Dell Rocks. From large pool north of small archway rock. This lies at lower tide level and is cut off for an hour or so per day if the sea is calm. Owing to the small tide range the waves lap into the pool if the sea is at all rough". B 1: "7.4.56. Marine collections near Dell Rocks. From tidal pools 20 yards S. of Painted Rock. Pools are 1-2 yards across and up to 18" deep. Rocks around of all sizes from big boulders to small stones". The M numbers indicate vial numbers and 1541 evidently stands for West Point Reef, of which no more information is available to us. Kensley (1976) when dealing with material from St.

Paul and Amsterdam Islands, Indian Ocean, mentioned the present species from the upper infralittoral to the midlittoral, where the specimens were found among and under stones and among algae, thus about the same habitat as that in which the Tristan da Cunha specimens are found.

Distribution. The type locality of the species is St. Paul Island, Indian Ocean (Vanhöffen, 1914). Kensley (1975, 1976) mentioned material from the type locality and from nearby Amsterdam Island. Barnard (1965) reported the species from Dell Rocks and from West Point Reef, both localities on Gough Island. Kensley (1975, p. 374) listed the same Gough Island specimens.

Janiridae

Iathrippa tristani (Beddard)

Janira tristani Beddard, 1886, Proc. zool. Soc. London, 1886, p. 105; Beddard, 1886a, Rep. sci. Res. Voy. Challenger (Zool.), vol. 17 pt. 1, p. 6, pl. 2, figs. 2-5; Wolff, 1962, Galathea Rep., vol. 6, p. 42 (in key).

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 68, 23 specimens; Sta. 74, 8 specimens).

Nightingale Island: off north-eastern coast (Sta. 88, 1 specimen).

Inaccessible Island: near Blenden Hall (Sta. 160e, 5 specimens; Sta. 160g, 2 specimens).

University of Cape Town Ecological Survey

Tristan da Cunha Island: Sta. 115 A, 7 specimens.

Description. The body is elongate, about 3.5 times as long as broad. The cephalon is distinctly wider than long; the anterior margin ends in a distinct rostrum, which is almost twice as long as wide at the top. The margins of the rostrum are entire, its top is truncated. The anterolateral margins of the cephalon are rounded. The eyes are distinct and composed of numerous ocelli.

The seven peraeon somites are of about equal width, the first

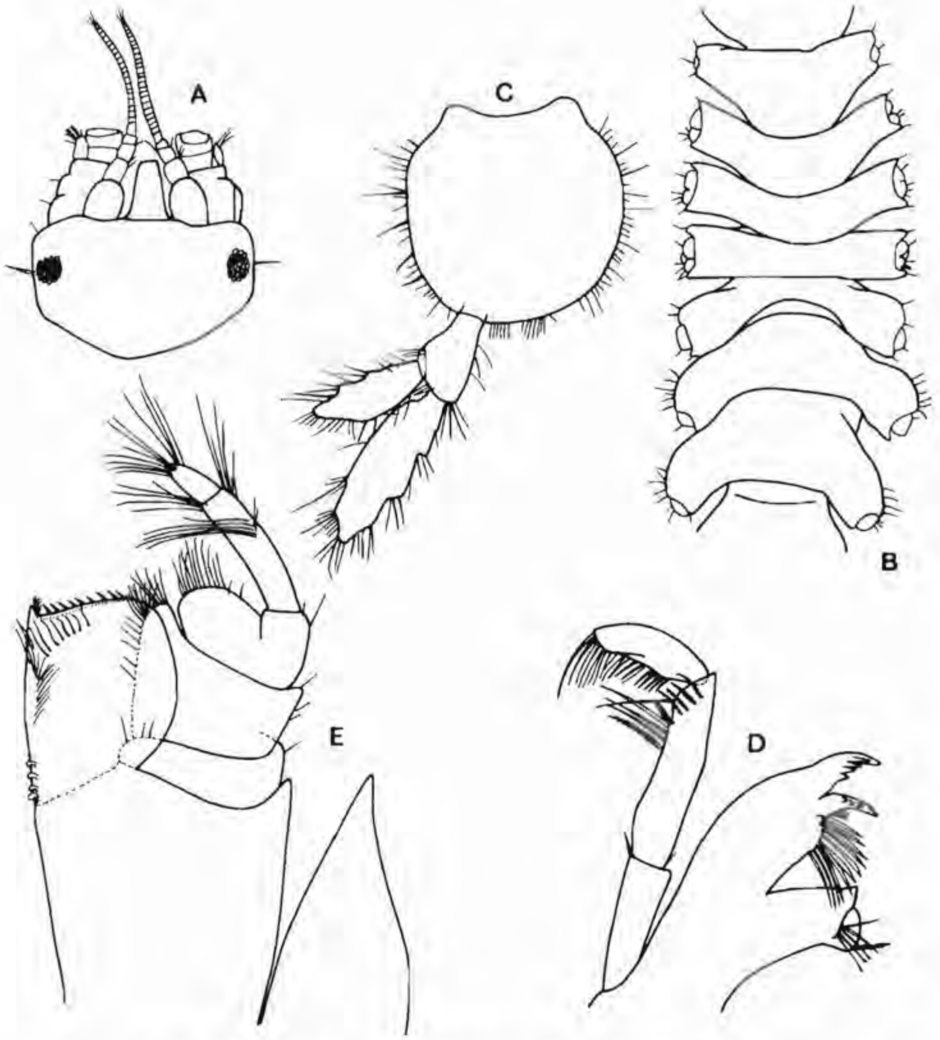

Fig. 32. *Iathrippa tristani* (Beddard). A-C, male from Sta. 88; D, E, specimen from Sta. 48. A, head in dorsal view; B, peraeon in dorsal view; C, telson and left uropod in dorsal view; D, mandible; E, maxilliped. A, C, x 10; B, x 6; D, E, x 32.

and the last are longest. In all somites coxal plates are visible. The plates of the first, fifth, sixth and seventh somites are single, those of the second, third and fourth double or treble. The anterolateral angle of somites I to IV bears a single small spine, in the following somites there are more spines there. The single coxal plates also are provided with one or more spinules. In the double plates the posterior half always carries three spines, the anterior one or none. The pleura

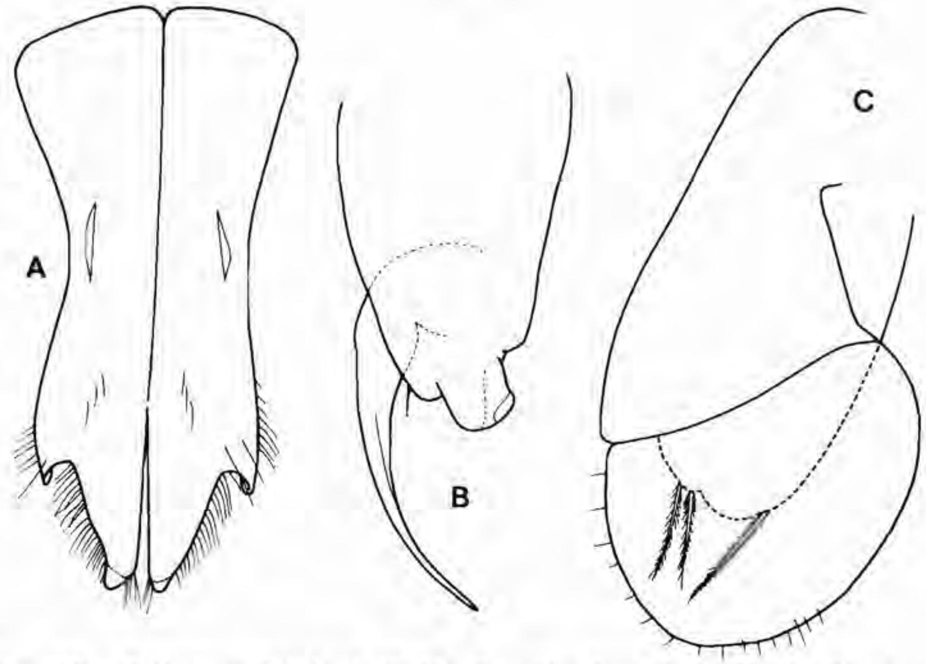

Fig. 33. *Iathrippa tristani* (Beddard), male from Sta. 68. A, first pleopods; B, second pleopod; C, third pleopod. A-C, x 39.

of somites I to III are directed forward, those of somites V to VII backward.

The pleotelson is almost circular, being about as long as wide. The margin shows only a slight emargination at the implantation of the uropods. The margin itself is entire, being only slightly crenulated by the implantation of longer and shorter setae. The lower posterior margin of the pleotelson between the uropods shows a row of softer hairs.

The first antennae have the first article of the peduncle largest, being distinctly longer and wider than the second, which again is somewhat longer and wider than the third. The flagellum consists of about 22 articles. The first antenna is somewhat longer than the cephalon (the rostrum included). The articles of the peduncle of the second antenna are short and wide, an antennal scale is present.

The mandible has a large three-articulated palp; a lacinia mobilis is present; the processus incisivus is of about the same width throughout. The maxilliped bears four coupling hooks; the epipod ends in a narrow point; of the palp the three basal articles are very broad, the two distal are much narrower and more slender.

The first pleopods of the male have the laterodistal angle distinct and placed at about 3/4 of the length of the pleopod; before this angle the outer margin of the pleopod is somewhat concave. The tips of the pleopods are elongate triangular with a blunt top, they are separated from each other by a narrow fissure. The pleopod is about five times as long as wide and only slightly narrower at the latero-distal angle than at the base. The second pleopod has the endopod ending in a curved narrow, but not whip-like point. The third pleopod is typical for the genus; the endopod is shorter than the much wider exopod and carries three plumose setae on the distal margin.

The uropods are broad and flattened. They are somewhat longer than the telson. The exopod is shorter than the endopod, but longer than the protopod; it bears two blunt teeth on the outer margin and spiniform setae along the edge; the setae that are implanted on the teeth are the most distinct. The exopod is 1.5 times as long as the endopod and slightly wider; it has two or three blunt teeth on the inner margin.

Size. The examined specimens are 3 to 7 mm long. The 5 ovigerous females measured between 5 and 7 mm; they carried from 11 to 17 eggs in the brood pouch; the diameter of the eggs was 0.4 mm. There was one gravid female, which carried 10 juveniles of about 1 mm long.

Remarks. No material of the present species has been recorded since the two females obtained by the "Challenger" on 17 October 1873 off Nightingale Island in 100 to 150 fathoms of water (= 183 to 274 m) (Beddard, 1886, 1886a). Beddard placed the species in the genus *Janira* and as late as 1962, Wolff maintained the species in that genus, probably because of the incomplete original description. As shown by the present material the species is a true *Iathrippa*.

The Tristan species shows a strong resemblance to *Iathrippa menziesi* nom.nov.[1], but differs in having neither the rostrum nor the pleotelson serrate, and by the relatively wider articles of the uropods. The male pleopods of the two species show a remarkable resemblance.

Habitat. The species has been taken by the Norwegian Expedition either far out in the surf zone among stones, or by dredge in

[1] *Jorina chilensis* Nierstrasz, 1918, and *Iathrippa chilensis* Menzies, 1962, are currently considered to belong to the same genus: *Jorina chilensis* Nierstrasz is usually treated as a synonym of *Iathrippa longicauda* (Chilton, 1884). Therefore the epithet *chilensis* Menzies, 1962, is a junior homonym of *chilensis* Nierstrasz, 1918, and has to be replaced. We now suggest *Iathrippa menziesi* nom.nov. as a replacement name. Wolff (1962, p. 39, footnote) already pointed to this homonymy, but did not propose a new name.

20 to 40 m depth outside the *Macrocystis* belt on a rocky bottom. The types, as mentioned above, were taken at a depth between 183 and 274 m.

Iais pubescens (Dana)

Jaera pubescens Dana, 1853, U.S. Exploring Expedition, vol. 13, p. 744.
Iais pubescens - Barnard, 1914, Ann. South African Mus., vol. 10, p. 436; Barnard, 1965, Ann. South African Mus., vol. 48, p. 199.

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 68, 1 specimen), below potato patches (Sta. 164, 1 specimen).

Nightingale Island: near landing place (Sta. 90, 1 specimen), east of landing place (Sta. 107, 99 specimens).

Inaccessible Island: near Blenden Hall (Sta. 125e, 10 specimens; Sta. 128, 44 specimens; Sta. 160, 12 specimens; Sta. 160a, 16 specimens).

Description. The specimens at hand agree well with the description of the species given by Menzies & Barnard (1951, p. 138, 139), except for the shape of the second antenna. Menzies & Barnard state the second antenna to be "more than two thirds as long as body; flagellum with twenty-six articles". In our specimens the second antenna is generally somewhat shorter, even in adult specimens: it is about half as long as the body; furthermore the number of articles in the flagellum is smaller than that cited by Menzies & Barnard. The senior author (Sivertsen) had the opportunity to examine material of the present species from Auckland, New Zealand (in the Museum at Copenhagen) and from Cape Town (in the British Museum), and found them to differ from Menzies & Barnard's description in the same points as the present Tristan da Cunha specimens. The following numbers of flagellar articles were found in this material (of each couple of figures the first stands for the number of articles in the left, the second that of the right antenna): Cape Town, 2 specimens: 16-16, 19-21; Auckland, 3 specimens: 21-21, --24, --26; Tristan da Cunha, 6 specimens: 18-19, --18, 19-19, --20, 21-22, 23-23.

Size. Of the 184 specimens examined the length varied from 0.6 to 2.0 mm. There are 9 ovigerous females, which vary in length between 1.5 and 2.0 mm; they carry 3 to 6 eggs each. The diameter of the eggs is 0.2 mm. The three gravid females carry up to 5 young in their pouch; the length of these young is about 0.6 mm.

Habitat. The specimens all were found in the littoral zone, mostly among gravel and rocks, often in rock pools, but also far out in the surf zone. The specimens from Sta. 90, 107, 125, 128 and 160 were found together with *Isocladus tristensis*, an association already reported upon by Barnard (1914, p. 436), and Barnard (1965, p. 200). Some of the specimens were found in association with *Paridotea apposita*.

Distribution. The species has a subantarctic circumpolar distribution. It has been reported from Nassau, Tierra del Fuego (type locality); the coast of southern Chile from 41°51'35" to 53°22'S; South Georgia; the Falkland Islands; Tristan da Cunha; South Africa; Kerguelen; Tasmania; New Zealand; Auckland and Campbell Islands. It was first reported from Tristan da Cunha by Barnard (1914, p. 436). The same author later (Barnard, 1965, p. 200) reported it from three stations at Gough Island. The data in the mimeographed station list of the 1955-1956 Gough Island Expedition concerning these stations are the following: A 11: "7.12.55. Pool and backwater in Glen Stream above Penguin Rookery. Altitude 150 ft. Broad pool with little current, although still torrential in flood times. In the shallows at side there is some gravel and the stones are mossy. Fauna noticeably richer than elsewhere". A 27: "10.1.56. Beach debris Glen mouth. Litter of dead branches and tree fern stumps, with few plants". B 10: "22.4.56. Stomach contents of 2 soldier fish taken off Archway". At stations A 27 and B 10 the species was taken in association with *Isocladus*, while Barnard stated the one from Sta. A 11 to be "free living", and commented on the peculiar habitat of these specimens.

Jaiz elongata new species

Norwegian Scientific Expedition

Inaccessible Island: North Point (Sta. 136, one male holotype and one male and one female paratypes).

Description. The body is long and fairly narrow, being four times as long as wide. It gradually, but slightly, widens from the first to the seventh peraeon somite. The upper surface is beset with short, widely spaced hairs. The cephalon is wider than long with the anterior

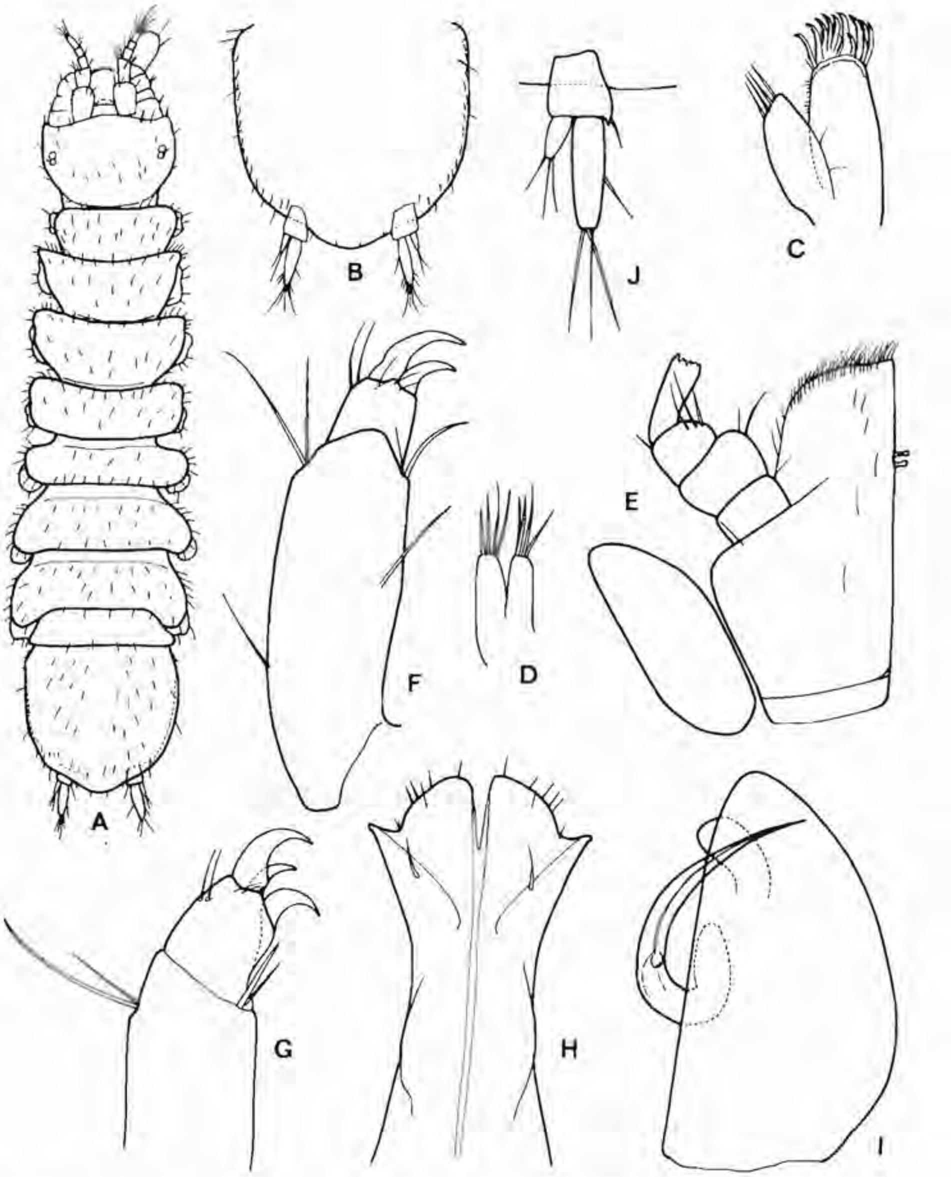

Fig. 34. *Iais elongata* new species. A, male of 1.2 mm from Sta. 136, in dorsal view; B, pleotelson of male in ventral view; C, first maxilla; D, second maxilla; E, maxilliped; F, propodus and dactylus of first peraeopod of female from Sta. 136; G, dactylus and propodus of 6th peraeopod of male; H, first pleopods of male from Sta. 136; I, second pleopod of male from Sta. 136; J, uropod of female. A, x 40; B, x 112; C-E, H-J, x 125; F, G, x 285.

margin rather evenly convex. The eyes consist of two ocelli each. The first antennae have 5 or 6 articles; they reach to the end of the fifth article of the second antenna. The length of the first antenna is slightly less that that of the cephalon. The second antenna is 4.5 times as long as the first. Its flagellum consists of 11 to 13 articles.

The right mandible shows a row of 4 setae; the lacinia mobilis is absent. The first maxilla bears 12 denticulate setae at the apex of the outer lobe, the inner lobe has 4 setae. The maxilliped has two coupling hooks; the epipod is oval; the basal articles of the palp are distinctly broader than the distals.

The peraeon has the seventh somite widest and the second and third somites longest. In dorsal view coxal plates are visible on all peraeon somites.

The dactylus of the first peraeopod has two claws, that of the following legs has three claws.

The pleotelson is as long as wide. The lower surface near each lateral margin shows a row of about 16 short stout setae, which are implanted some distance from the margins and do not reach beyond these margins; they are clearly visible in transmitted light. The lateral margin is regularly curved and shows neither teeth nor serrations. The top of the pleotelson is broadly rounded. The uropods are about 1/4 as long as the telson. The exopod is less than half as long as the endopod and also distinctly narrower. Both endo- and exopod end in a few spines.

S i z e . The male holotype is 1.2 mm long, the female paratype 1.3 mm.

H a b i t a t . The specimens were found in a very peculiar habitat, viz., a small pool of brackish water in a cave about 2 m above the beach. This habitat is somewhat reminiscent of the locality on Gough Island where Barnard (1965, p. 200) reported *Iais pubescens*, viz., a freshwater pool at an altitude of 46 m, and one wonders whether Barnard's specimens might not belong to the present species. Barnard reported his specimen as free-living; at the type locality of *Iais elongata* no other isopods were collected, and it is well possible that it also is free living. Also it would be interesting to compare the present species with the specimens which Chilton (1909, p. 650) reported from New Zealand under the name *Iais pubescens* and which were found free-living at the mouth of fresh water streams in the sounds on the west coast of New Zealand, often out of range of ordinary high tides.

Neojaera hirsuta new species

Norwegian Scientific Expedition

Tristan da Cunha Island: Julia Point (Sta. 68, 16 specimens; Sta. 70, 1 specimen; Sta. 71, 3 specimens; Sta. 72, 1 specimen; Sta. 74, 9 specimens).

Nightingale Island: north-east coast (Sta. 88, 1 specimen), near landing place (Sta. 94, 1 specimen), near Middle Island (Sta. 118, 1 specimen).

Stoltenhoff Island: north coast (Sta. 113, 7 specimens), north-east coast (Sta. 116, 2 specimens).

Inaccessible Island: south of East Point (Sta. 154, 1 specimen).

Description. The body is five to six times as long as wide. It bears scattered, slender setae both on the dorsal surface and along the margins. The anterior margin of the cephalon is slightly produced in the middle, the anterolateral angle is narrower and sharper. The eyes are black or dark brown, small, consisting of about seven ocelli. The peraeon somites are of about the same width, the first three are longer than the last four. Small coxal plates are visible on somites II to VII. The pleotelson is about 4/5 as wide as long, it is of about the same width over its entire length and abruptly narrows posteriorly; it does not show any teeth or spines.

The first antenna exceeds the fifth article of the peduncle of the second antenna; itself consists of five articles, the first of which is longest and by far widest of all. The second antenna is much longer than the first; its flagellum consists of 16 articles in the adult males and 14 in the adult females.

The mandible has a three-articulated palp (the last article is missing in the slide made, but it probably is broken off); the incisor process is pointed and has five teeth; a lacinia mobilis and a row of 1 spiny and 5 plumose setae are present. The maxilliped is of the usual shape and has two coupling hooks; the epipod reaches nearly the end of the third article of the palp and has the outer border rounded.

The first pleopods of the male are fused at the base, together they are less than twice as long as broad; they widen slightly at the end of the basal third and then become slightly narrower again; the endopod of each pleopod is bluntly triangular with a broadly rounded top; the exopod is very narrow and whip-like, it reaches far beyond the

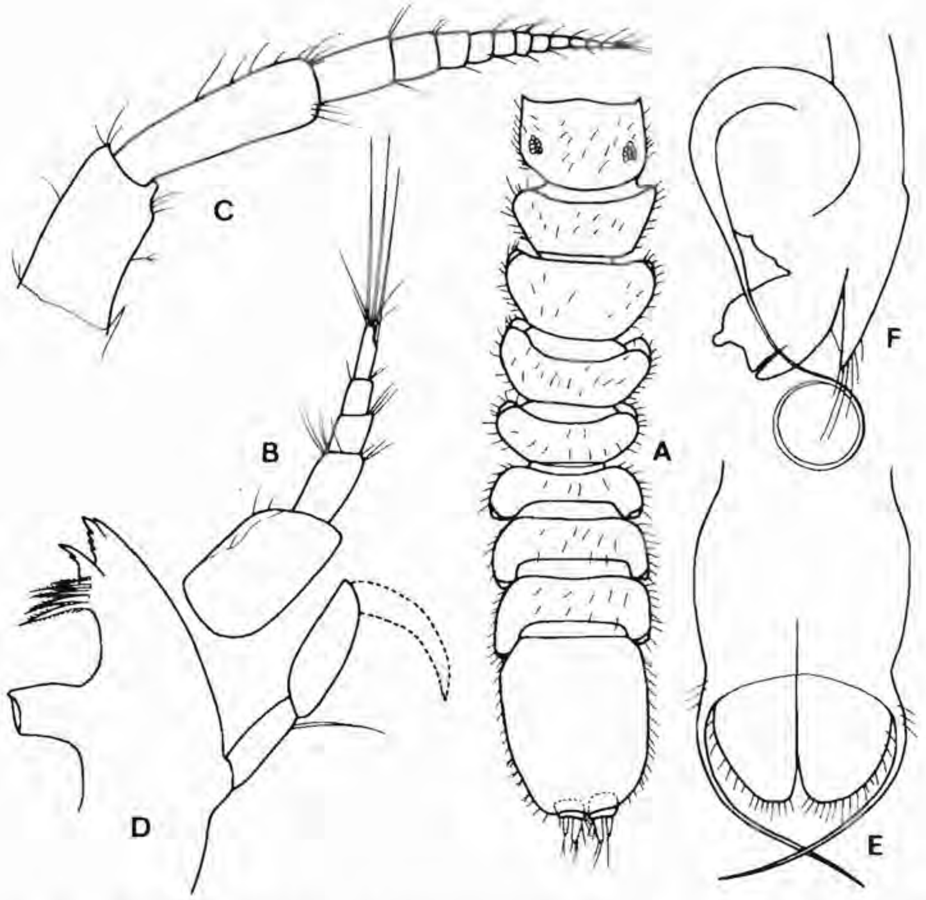

Fig. 35. *Neojaera hirsuta* new species, male from Sta. 68. A, animal in dorsal view; B, first antenna; C, second antenna; D, mandible; E, first pleopods; F, second pleopod. A, x 26; B, C, x 110; D, x 135; E, x 45; F, x 62.

endopods and is only a little shorter than the entire pleopod. The second pleopod of the male has the sympod ending in an acute point with six setae on the distal margin; the copulatory organ ends in a long and narrow whip-like apex, which is more than twice as long as the pleopod itself, and which is strongly coiled at the apex. The uropods are short, with a stout peduncle and lanceolate rami, the inner of which is one fourth longer than the outer.

Size. The largest male measures 1.7 mm, the largest female 2.2 mm. The length of a pouch young is 0.35 mm.

Habitat. The species was mostly found in the surf zone, usually in the extreme outer part of it; here it lived among stones, in cracks in rocks, and among algae, e.g., *Lithothamnion*. It has also been dredged, viz., in 5-10, 20-40, 30-45, and 40 m, both inside and outside the *Macrocystis* belt; it was found there on a hard bottom with stones, and often a good growth of algae, sponges etc.

Remarks. The present new species may be easily distinguished from the seven known species of *Neojaera* by the lack of spines or stout setae on the lateral margins of both the cephalon and the pleotelson, and also by the shape of the first male pleopods. The latter shows some resemblance to that of *N. antarctica* (Pfeffer) as illustrated by Nordenstam (1930, p. 550, fig. 12); the two hollows figured by Nordenstam in the endopod and considered by him to be receptacula seminis, could well be the coiled distal part of the copulatory organ of the second pleopod shining through.

Ianiropsis longipes new species

Norwegian Scientific Expedition

Tristan da Cunha Island: Big Beach (Sta. 3, 17 specimens), Julia Point (Sta. 47, 2 specimens; Sta. 49, 8 specimens; Sta. 65, 3 specimens; Sta. 68, 160 specimens; Sta. 70, 1 specimen; Sta. 71, 4 specimens; Sta. 74, 4 specimens), Seal Bay (Sta. 51, 2 specimens).

Nightingale Island: off north-east coast (Sta. 88, 27 specimens), near landing place (Sta. 94, 3 specimens; Sta. 111, 16 specimens; Sta. 112, 2 specimens), south coast (Sta. 110, 5 specimens), near Middle Island (Sta. 118, 1 specimen).

Stoltenhoff Island: north coast (Sta. 113, 7 specimens), east of landing place on north coast (Sta. 114, 2 specimens), north-east coast (Sta. 115, 14 specimens; Sta. 116, 54 specimens).

Inaccessible Island: near Blenden Hall (Sta. 133, 2 specimens; Sta. 145, 6 specimens; Sta. 149, 1 specimen; Sta. 160e, 24 specimens; Sta. 160f, 11 specimens; Sta. 160g, 21 specimens), south of East Point (Sta. 154, 4 specimens).

Description. The cephalon has the frontal margin slightly convex in the middle, there is no distinct rostrum. The eyes are distinct and consist of numerous ocelli. The body is about three times as long as wide, and is of about the same width throughout. Coxal plates are present on all the peraeon somites.

The pleotelson is distinctly wider than long. It bears

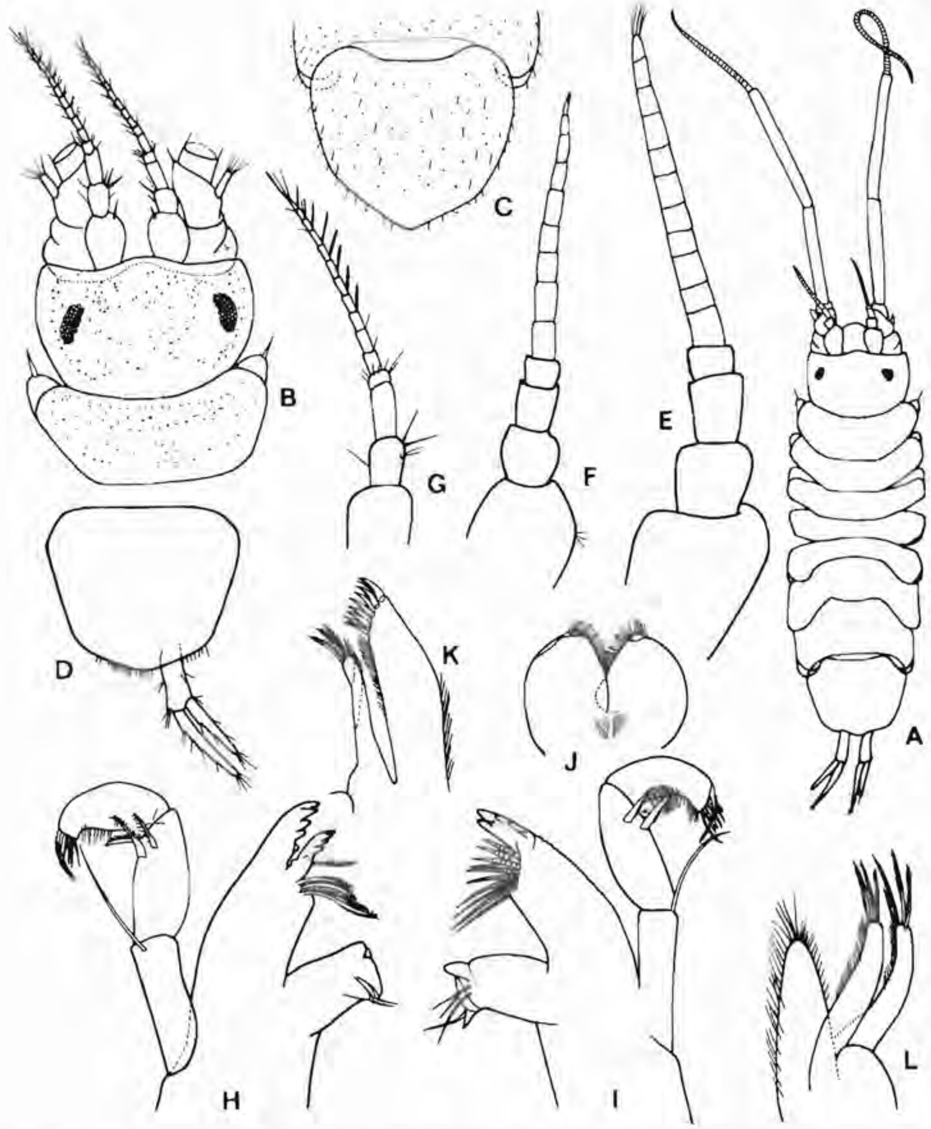

Fig. 36. *Ianiropsis longipes* new species. A, E, male from Sta. 71; B, C, G-L, male holotype of 4 mm from Sta. 68; D, male of 3.2 mm from Sta. 113; F, male from Sta. 68. A, animal in dorsal view; B, head in dorsal view; C, pleon in dorsal view; D, pleon and right uropod in dorsal view; E-G, first antenna; H, left mandible; I, right mandible; J, lower lip; K, first maxilla; L, second maxilla. A, x 7; B, C, x 12; D, x 15; E, F, H, I, K, L, x 45; G, J, x 25.

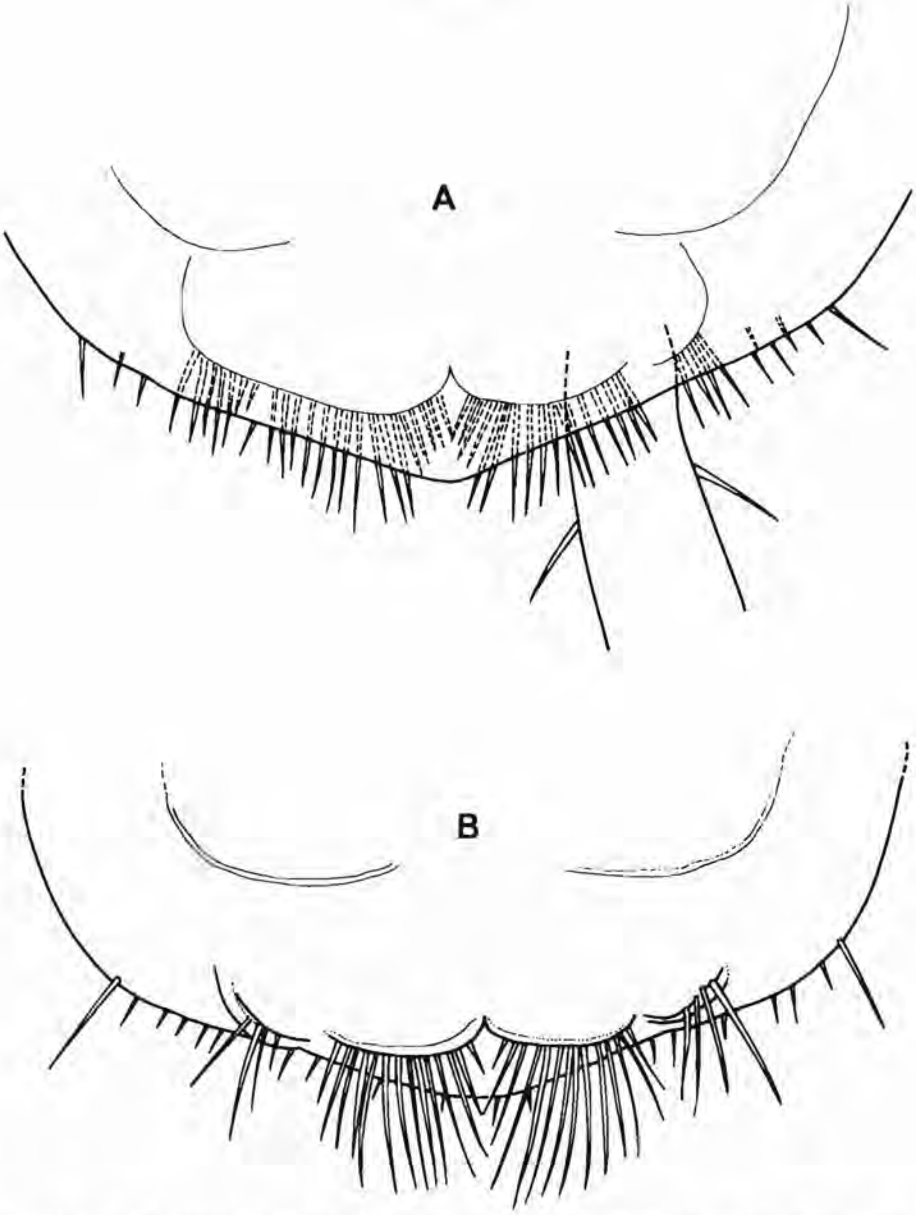

Fig. 37. *Ianiropsis longipes* new species. A, male of 5.7 mm from Sta. 113, posterior part of pleotelson and base of right uropod, in dorsal view; B, male of 3.2 mm from Sta. 113, posterior part of pleotelson in ventral view. A, B, x 85.

scattered short setae on the dorsal surface and along the lateral margins; a row of longer setae is implanted on the lower surface just before the posterior margin, which they overreach, and thus are partly visible in dorsal view. The apex of the pleotelson is evenly rounded or slightly

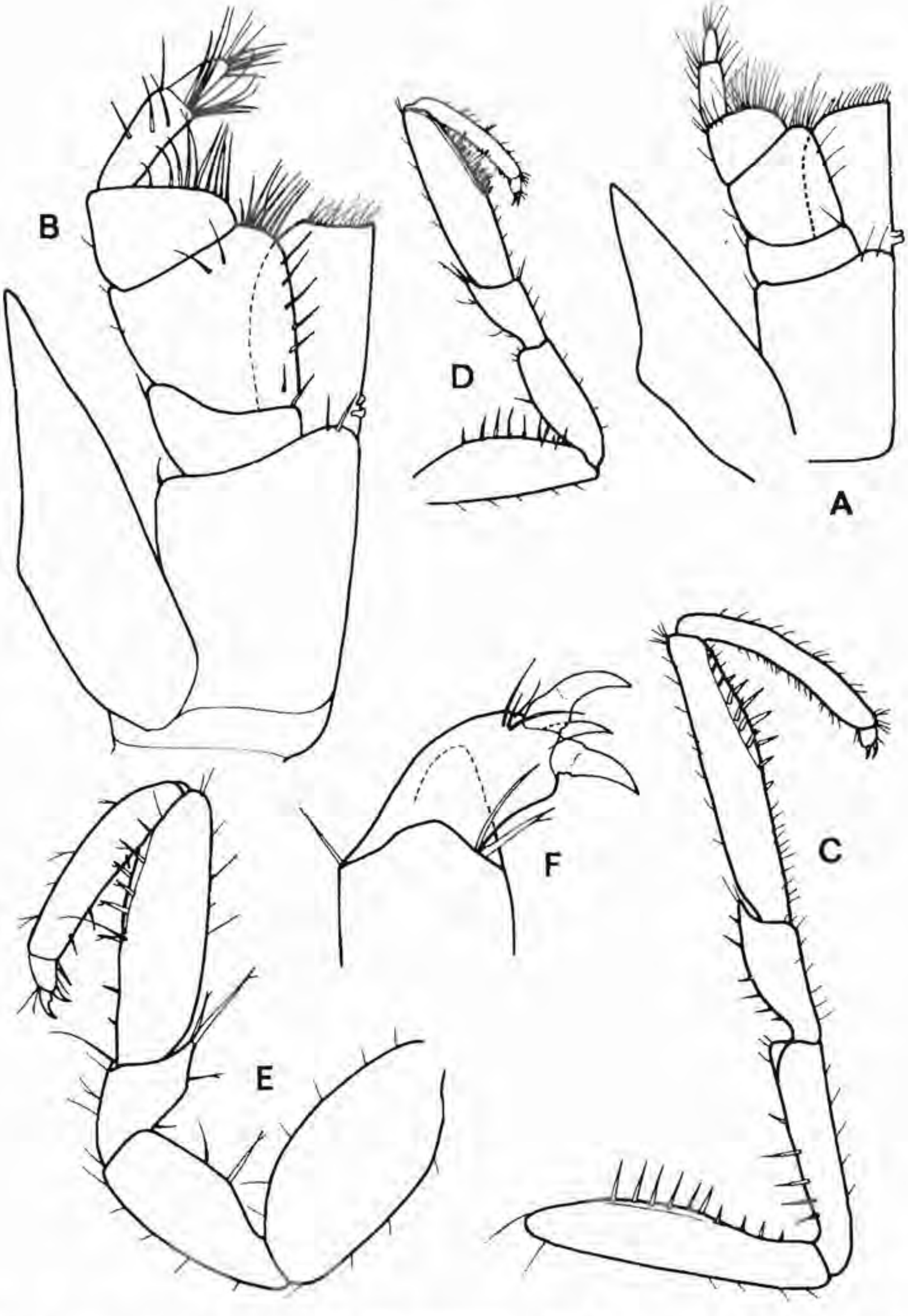

Fig. 38. *Ianiropsis longipes* new species. A, E, female of 2.5 mm from Sta. 68; B, male of 3.3 mm; C, male holotype of 4 mm from Sta. 68; D, F, male of 3.5 mm from Sta. 71. A, maxilliped of female; B, maxilliped of male; C, first peraeopod of large male; D, first peraeopod of smaller male; E, first peraeopod of female; F, dactylus of 7th peraeopod. A, B, E, x 84; C, D, x 54; F, x 190.

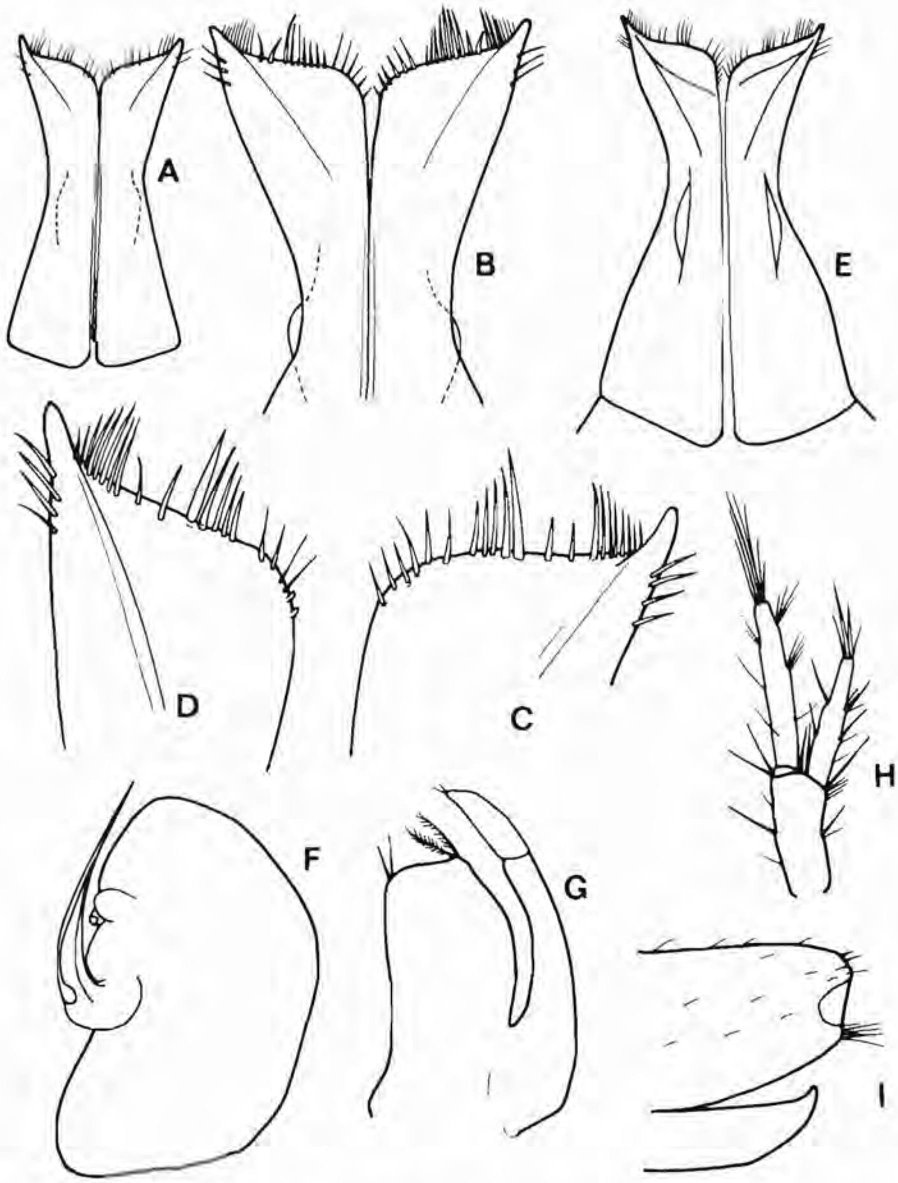

Fig. 39. *Ianiropsis longipes* new species. A, male of 2 mm from Sta. 47, first pleopods; B, male of 5 mm from Sta. 47, distal part of first pleopods; C, D, holotype male of 4 mm from Sta. 68, tip of first pleopod; E, male of 3.2 mm from Sta. 113, first pleopods; F, male from Sta. 113, second pleopod; G, male from Sta. 113, third pleopod; H, male of 3.8 mm from Sta. 49, uropod; I, male of 3.6 mm from Sta. 71, tip of pleotelson and pleopods in lateral view. A, B, x 72; C, D, x 168; E-G, x 63; H, I, x 36.

widely triangularly produced. The margins of the pleotelson do not show any serrations or spines.

The first antenna of the male consists of 10 to 18 articles, in the female it has only 9 to 13 articles. The basal article is the widest and the longest. The second antenna is nearly as long as the body and about 4 times as long as the first. The flagellum is multi-articulate and in the larger males consists of more than 60 articles. The distal two segments of the peduncle then are extremely elongated, each measuring about 1/3 of the length of the entire antenna.

The mandible has a large three-segmented palp, which carries several setae and spines; the incisor process ends in five teeth, and the lacinia mobilis in four. The lacinia mobilis is present in the left mandible, but was not observed in the right. A group of setiferous spines or spine-like bristles are present on the incisor process. The molar process ends in a few lobes and some setae. The first maxilla has the inner lacinia with 8 setae, the outer with 3 or 4 setae. The outer lacinia of the second maxilla carries 3 and 4 apical setae on the outer and inner lobe respectively. The maxilliped is similar in males and females, only the epipod is a little longer in the female, reaching about to the end of the second segment of the palp. The epipod is elongate and ends in a narrowly triangular point. There are two coupling hooks. The first three segments of the palp are wide, the distal two much narrower and more slender.

In adult males the first peraeopod exceeds the body in length; in the females and young males it is less than half as long as the body. The dactylus ends in two claws. The propodus of the first leg of the male is about 6 times as long as the dactylus and 2/3 as long as the carpus. It is slightly curved and forms an indistinct subchela with the carpus; to this end the carpus is slightly widened at 2/3 of its length and bears some strong spinules on the upper 1/3 of its inner margin facing the propodus. The carpus is about 5 times as long as wide. The merus is rather short, but ischium and basis again are elongate. In the female the various segments, especially the basis, ischium, carpus and propodus are less elongate and slender; also the leg is hardly if at all subchelate. In the following legs the dactylus ends in three claws; the legs are less elongate than the first leg of the male and are not subchelate.

The first male pleopods are broadest at the base, gradually narrow distally, becoming narrowest just before 2/3 of the length of the pleopod (being there less than half as wide as at the base), and widen again in the distal part; the distal width is slightly less than the basal. The posterolateral angles of the combined pleopods are narrow and point obliquely backward. The posterior margin of each pleopod is almost transverse, it runs slightly obliquely from the posterolateral tooth inward to join the inner margin under a broad curve. The posterior margin bears four groups of setae: near the inner curve there is a group of 3 (in the smallest male) to 6 (in the largest), then a group of 3 to 7 placed somewhat closer together, next 2 rather widely separated setae, and close to the posterolateral tooth a row of 4 to 11, the end of which curves slightly around the tooth. In the extreme distal part of the outer margin of the pleopod, just before the posterolateral tooth there is a row of 2 or 3 setae. The larger specimens have more setae than the smaller, the usual formula for medium sized specimens is 5-5-2-8-3 (in the order in which they are discussed above). The second pleopod of the male has the sympod ending in a broadly rounded top; the copulatory organ ends in a narrow tapering point, which reaches as far as the top of the sympod. The uropods are usually of about the same length as the pleotelson. The endopod is somewhat longer than the exopod, both are slender.

Size. The size of the examined specimens varies between 1.0 and 5.7 mm. The 10 ovigerous females are 1.9 to 3.2 mm in length and carry 8 to 20 eggs each. The diameter of the eggs is 0.2 mm.

Habitat. The species has frequently been found in the littoral zone from rock pools in and above the tidal zone to far out in the surf zone, where they occurred among stones and rocks often overgrown with algae, sponges, etc., once they were found on floating *Macrocystis* rhizomes. Several dredge hauls produced the species, viz., in samples from 2-10, 5-10, 7-10, 20-40, 30-45, 35-55, 40, 40-60, and 50-60 m, usually taken from a hard bottom with stones often heavily overgrown with algae, sponges etc., once from a sandy bottom with algae.

Remarks. The various species of the genus *Ianiropsis* are difficult to distinguish as there are few reliable specific characters. Menzies (1952, p. 135) pointed out that "In certain species the general shape and relative length of the uropods are distinctive. The most reliable diagnostic features seem to be present on the male first pleopod, particularly at the lateral apex". However, as is discussed below these features also show a certain degree of variability. *Ianiropsis longipes* shows some resemblance to *I. chilensis* Menzies, 1962, and *I. palpalis* Barnard, 1914. *I. chilensis* differs from the new species in that it has black eyes, black chromatophores on the body, a different shape of the mandible, and a broader maxillipedal epipod. *I. palpalis* differs from *I. longipes* by the different shape of the third segment of the palp of the maxilliped of the male, by the shorter endopod of the maxilliped and by the longer and more narrow first pleopod of the male.

The present material consists of some 400 specimens, which, as may be expected, show a certain degree of variation. Some of the specimens have brown eyes, in others the eyes are light yellow and can hardly be seen in reflected light. The amount and the colour of the chromatophores of the body may also vary. Furthermore the number of setae on the pleotelson is subject to some variation; those on the dorsal surface are often difficult to observe. Along the margin of the pleotelson there is quite a number of small setae, but at the posterior margin the picture becomes complicated by the fact that some 40 to 50 longer setae are implanted on the lower surface of the pleotelson just before the posterior margin and reach beyond that margin so that they are visible in dorsal view. It is not clear whether similar setae are present also in *I. chilensis* and *I. palpalis*, at least they are not, or not clearly, shown in the figures or mentioned in the descriptions.

Menzies (1962, p. 80) in his diagnosis of *I. chilensis* stated: "First antenna with 12 articles, fifth article two times the length of the sixth". In *I. longipes* the number of articles of the first antenna may vary from 11 in smaller males (about 2 mm long) to 18 in larger specimens (length 5 mm). Furthermore the relative length of the fifth and sixth articles shows a high degree of variation. In some specimens the fifth article is twice as long as the sixth, in others the two articles are of the same length, while there are also cases in which the fifth is shorter than the sixth; sometimes the right and left antenna of the same specimen are different in this respect.

In the first pleopod of the male the number of setae on the distal margin also shows a high degree of variation in the present species. While Menzies (1962, p. 80) described the number of setae in *I. chilensis* as 15, in *I. longipes* this number varies from 12 in small specimens (about 2 mm long) to 26 in large specimens (about 5 mm long). We counted these setae in 15 specimens, arranged in three size groups and obtained the following averages: (1) 16 setae in the smallest specimens

(1.8 to 2.8 mm); (2) 20 setae in the second group (3.2 to 4.2 mm); and (3) 26 setae in the largest specimen (5 mm). In the extreme distal part of the lateral margin of the first pleopod of the male the smaller specimens show 2 setae, the larger 3. As mentioned above in the description, these setae are arranged according to a pattern, which is the same in specimens of different size. It evidently is only the number of setae that changes with age.

Another feature that changes with age is the first peraeopod of the male. This change can be very rapid: in smaller males (length about 3 mm) the first peraeopod is about half the length of the body, while in slightly larger specimens (length 4 mm) it may reach a length of more than the total length of the body.

Also the relative length of the uropods shows some variation. In some specimens, mainly the smaller, the uropods are fairly short, measuring only 2/3 of the length of the pleotelson, while in other specimens, usually the larger, the length of the uropods may exceed the length of the pleotelson with one third. This variation occurs in males as well as in females.

Vermectias new genus

Diagnosis. The present genus is quite aberrant. The body is narrowly elongate. The cephalon has a rostrum-like prolongation of the anterior margin. Eyes are present, but consist of a few ocelli only. The body segments are narrow, but never longer than wide; all seven peraeonites are of about the same width as the cephalon. Coxal plates are present on all peraeonites, but they are very small. The body bears hairs, but no spines. The pleon consists of a narrow basal segment and the pleotelson; the latter is small, as wide as the basal pleon segment, and much narrower than the peraeon somites (slightly more than half as wide); furthermore it is shorter than the shortest peraeonite.

The first antenna consists of 6 articles. The second antenna is much longer than the first and has the flagellum made up of more than 10 articles, a small antennal squame is present.

The mandible is provided with a three-segmented palp. The incisor process is cylindrical. The maxilliped has the basal three segments of the palp wide, the last two slender.

The first peraeopod is not subchelate. The dactyli of all peraeopods have three large claws and a small basal tooth.

The uropods have a broad protopodite; the exopod is somewhat shorter than the endopod. The entire uropod is longer than the pleotelson.

Type species: *Vermectias caudiculata* new species.

Gender of generic name: feminine.

Remarks. The genus belongs to the family Janiridae, but shows little affinity to any of the known genera. It differs from Menzies' (1962, p. 69) definition of the family in that the first peraeopod has three or four claws on the dactylus (not two). The genus is perhaps closest to *Neojaera* and *Ectias*. From both these genera, and from most other genera, it differs in the remarkably short pleotelson and in the armament of the dactyli of the peraeopods. It resembles *Neojaera* in the elongate shape of the body, the first antenna which consists of only few (6) articles, and in the eyes, which have only a few ocelli.

Vermectias caudiculata new species

Norwegian Scientific Expedition

Nightingale Island: near landing place (Sta. 94, 4 specimens).

Stoltenhoff Island: off north-east coast (Sta. 116, 1 holotype male).

Description. The body is narrow and elongate, it is six times as long as wide. It bears scattered longer and shorter hairs, but no spines. The head is wider than long and is produced forward into a broad somewhat elongate trapezoidal lobe, which reaches between the bases of the antennae. The eyes are small and consist of four ocelli, placed in the anterior part of the cephalon near the rounded lateral border. The peraeon somites all are of about the same width as the cephalon. The coxal plates are small, but all are visible in dorsal view. The pleon somites are fused to a single segment visible before the pleotelson. The fused somite and the pleotelson are of the same width, but the fused somite is much shorter, being less than 1/3 of the length of the pleotelson. The pleon is about 2/3 as wide as the peraeon, and it is much shorter than the last peraeon somite. The extreme shortness of the

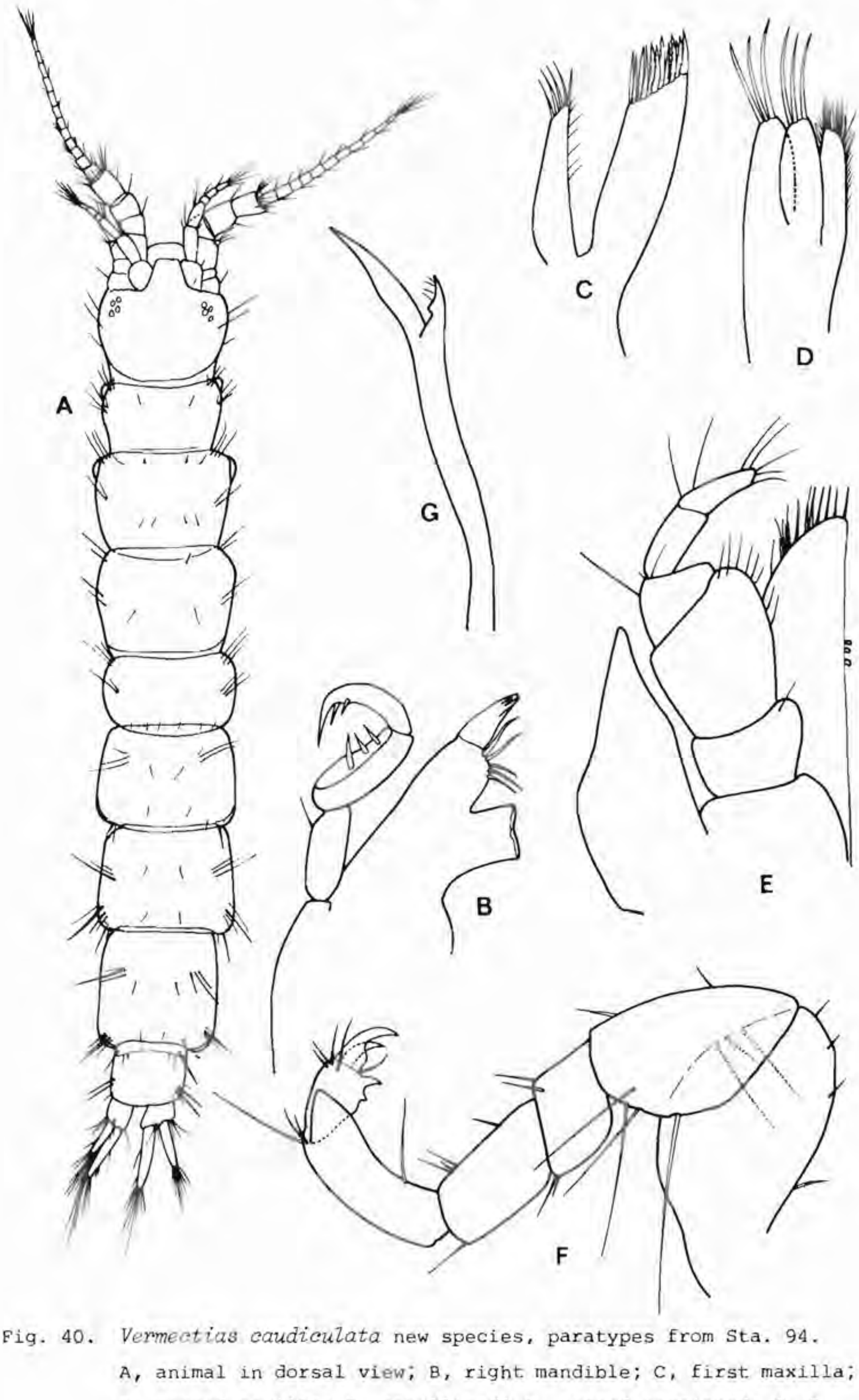

Fig. 40. *Vermectias caudiculata* new species, paratypes from Sta. 94. A, animal in dorsal view; B, right mandible; C, first maxilla; D, second maxilla; E, maxilliped; F, second pereiopod; G, ? first pleopod of male. A, x 35; B-D, G, x 140; E, F, x 125.

pleon is one of the most conspicuous features of this species and has inspired the name caudiculata (with a small tail). The lateral margins of the pleotelson are straight, without spines or teeth. The posterior margin is somewhat convex and about 1.5 times as long as the lateral margins.

The first antenna consists of 6 articles and reaches about to the end of the peduncle of the second antenna. The last two articles are of about equal length. The second antenna shows a small antennal scale on the third article; it shows as a minute article with two distal setae. The flagellum of the second antenna consists of 8 to 14 articles.

The right mandible has a four- or five-pointed incisor process and a row of six setae. The molar process is cylindrical, short and truncate. There is a three-articulated palp, the second article of which bears three denticulate setae; the distal segment bears two setae. No lacinia mobilis is present in the right mandible, but there is one in the left. The outer lacinia of the first maxilla bears 10 to 12 denticulate setae on the distal margin, the inner lacinia has five setae there. The two lobes of the outer lacinia of the second maxilla each carry three apical setae, the inner lacinia bears numerous fine setae in the distal part. The maxilliped has three coupling hooks; the basal articles of the palp are wide, the distal are elongate and narrow; the epipod has the outer margin angular and the apex rather narrow and pointed.

All peraeopods end in three claws, while a small tooth furthermore is present in the proximal part of the posterior margin of the dactylus. The first peraeopod is not subchelate.

The condition of the material did not allow a satisfactory dissection of the pleopods. An organ, which in all probability is the first pleopod, is figured as Fig. 40 G. It has a peculiar narrow shape, and ends in a sharp point. At two thirds of its length it shows an appendage, which is elongate triangular with a blunt triangular lobe on the inner margin. This organ shows some resemblance to the figure of the first male pleopod of *Antias turqueti* provided by Richardson (1906, p. 15, Fig. 19).

The uropod is nearly twice as long as the pleotelson. The exopod is one third shorter than the endopod.

Size. The holotype male measures 1.9 mm, the other four specimens are 1.8 to 2.0 mm long. There are two ovigerous females, both of which are 2.0 mm long. The diameter of the eggs is 0.25 mm.

Colour. Yellowish brown.

Habitat. The holotype was collected in a dredge haul taken from 30 to 45 m depth in the outer part and outside of the *Macrocystis* belt from a hard bottom with sponges. The other material was found among *Lithothamnion* collected far out in the surf zone.

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Plate 1. *Dynamenella menziesi* new species, male. x 15.
Drawn by J. Wessendorp 1974.

Plate 2. *Cassidinopsis tuberculata* new species, male. x 15.
Drawn by J. Wessendorp 1974.