

MESACANTHION KERGUELENENSE n.sp.

(Fig. 22, a-d.)

Kerguelen Island : Stations 51, 52, 54, 59, 60, 64.

♀ (2x) : L = 3.9, 7.8 mm. ;  $\alpha$  = 27.8, 31.2 ;  $\beta$  = 3.5, 5.2 ;  $\gamma$  = 28.0, 35.5 ; V = 56, 57%.

♂ (3x) : L = 3.5-3.7 mm. ;  $\alpha$  = 20.5-25.0 ;  $\beta$  = 3.5-3.9 ;  $\gamma$  = 25.0-26.4.

Heard Island : Station 19.

j (1x) : L = 4.8 mm. ;  $\alpha$  = 24 ;  $\beta$  = 3.6 ;  $\gamma$  = 32.

Macquarie Island : Station 83.

♂ (2x) : L = 5.7, 9.0 mm. ;  $\alpha$  = 40, 30 ;  $\beta$  = 5.7, 5.5 ;  $\gamma$  = 26, 25.

j (2x) : L = 3.4, 2.5 mm. ;  $\alpha$  = 26, 25 ;  $\beta$  = 3.4, 3.6 ;  $\gamma$  = 18, 16.

This new species is very close to *M. infantilis* (Ditlevsen) and *M. virilis* (Ditlevsen), with both of which it has features in common. The head structure appears similar to both species ; Ditlevsen stated that the jaws of *M. infantilis* are smaller and the teeth larger than in *M. virilis*, although this is not obvious from his figures and description. The amphid of both is described as horseshoe-shaped, and the present specimens differ in having only a small circular opening. The tail structure is similar to that of *M. infantilis* in female and juvenile specimens but much shorter in the male ; the male tail was not figured by Ditlevsen, but was not mentioned as being different to that of the female. The tail of Ditlevsen's single male specimen of *M. virilis* was damaged. In the spicular apparatus the new species agrees with *M. virilis* in the size of the spicules but not in the form of

the tips, which are simple instead of combed. A preanal organ, absent in *M. infantilis*, is present in *M. virilis* and the Kerguelen species, but in the latter it lies close to the proximal end of the spicule, instead of at about  $1\frac{3}{4}$  spicule length from the anus. Although *M. infantilis* has been recorded several times since Ditlevsen's account, it has always been from females or immature specimens. Although the specimens from Kerguelen are placed in a separate species it is thought possible that further collections of adults of *M. infantilis* may show that the variation within the species is such as to include the new species and possibly also *M. virilis*.

In Section 1 of this Report, two juvenile worms from B.A.N.Z.A.R.E. Station 105 were attributed to *M. infantilis*. They agree equally well with *M. kerguelensis* and the amphid is circular, not horseshoe shaped.

The labial setae are about  $8\mu$  long. The cephalic setae arise  $25\mu$  from the anterior end; the longer are  $40-50\mu$ , the shorter  $25-30\mu$  long, and the head breadth is  $60-70\mu$ . The small circular amphids are  $10\mu$  behind the lateral setae. The external cephalic ring is  $30-40\mu$  long, its six-lobed posterior border distinct in some specimens. The internal capsule is as described for *M. infantilis* in an earlier report (Mawson, 1956, 65). Pigment is scattered on the outer wall of the oesophagus just posterior to the helmet, concentrated laterally into two crescentic patches surrounding a lens (or lenticular space). A cephalic organ is present. The buccal cavity extends into the anterior end of the oesophagus and is pouched as described as typical for *M. infantilis*; it is supported by chitinous bars connected with the outer capsule, and bears small teeth near the base.

The female tail is an elongate cone, its length 2.0-2.1 anal breadths, rounded at the tip, with a subterminal ring of long setae. Caudal glands extend preanally, and near the tip of the tail the ducts enter a small reservoir; in some specimens this part of the tail is constricted. In the juveniles from Macquarie Island the tail length is 2.5-2.7 anal breadths.

The male tail is shorter, 1.3-1.5 anal breadths, and bears numerous setae, long ones near the tip, shorter ones scattered over lateral and dorsal aspects, and two subventral rows extending pre- and post-anally. A slender tubular preanal organ lies a little more than a tail length in front of the anus. The spicule,  $150-200\mu$  long, is stoutly built, and has a simple tapering point. The dorsal half of the gubernaculum is greatly expanded, extending antero-ventrally around the spicule and postero-dorsally into a spur.

## KERGUELEN ISLANDS.

- STATION 5 : D.R.S., 20m. Off Jeanne d'Arc. Trawling made near belt of kelp ; brownish green mud and some weeds. Echinoids most numerous, other groups represented.
- STATION 9 : Shore collecting stations on islands in Bras Bossière. Nematodes from intertidal mussel bank.
- STATION 12 : D.R.S., 4-5m. ; off Grave Island, Island Harbour ; kelp and red algae common ; many organisms on kelp holdfasts. All groups represented in haul. Polyzoa and a colonial ascidian most numerous.
- STATION 15 : D.R.S., 55m. ; in channel between Hog Island and Blakeney Island. The striking character of the haul was presence of ascidians of several types ; many small invertebrates were found in a common globular silicious sponge.
- STATION 47 : 49° 50' S., 69° 33' E., off south coast of Kerguelen ; D.R.L., 150m. Small stones and gravel ; main features were red ophiuroids and white holothurians.
- STATION 48 : Swain's Bay, near Swain's Haulover. Shore collecting.
- STATION 49 : D.R.S., 2-20m. Western end of Long Island in a little, sheltered harbour with steeply shelving bottom. Dredge full of kelp and red and green algae, bottom of grey-green sand. Ophiuroids, echinoids, and asteroids common ; polychaetes and crustacea numerous.
- STATION 50 : D.R.S., 10m. Grotto Bay. Much kelp and other weed ; echinoids and polychaetes common.
- STATION 51 : D.R.S., 40-50m. Supply Bay. Polychaetes common, many small invertebrates in " roots of common globular silicious sponge ".
- STATION 52 : Bras Bolinder, near head of Greenland Harbour :
1. D.R.S., 20-30m., much kelp and large mussels ; many sponges, polychaetes and ascidians.
  2. Intertidal collections from beneath boulders.
- STATION 53 : D.R.S., 20-30m. Near mouth of Peace River. Calcareous worm tubes common, also silicious globular sponges, harbouring many invertebrates.
- STATION 54 : head of Greenland Harbour ; intertidal collections. A rich fauna.
- STATION 55A : D.R.S., 10-20m. Between Islets in Colbeck Passage, off N.W. end of Long Island. Some kelp, some stinking black mud ; fauna similar to that in other hauls at this depth.
- STATION 55B : D.R.S., 1-5m. Near head of Bras Enzensperger, Royal Sound. Much sand, kelp, and *Ulva* ; numerous small gastopods attached to weed.
- STATION 56A : Rivett Arm, intertidal collection. Very rich fauna in this area, extending down steeply shelving shore line.
- STATION 56B : D.R.L., 50m. ; near Green Island. Good haul, common globular sponge plentiful, with slimy dark green mud. Polychaetes, nematodes, ophiuroids, holothurians, and a large variety of simple ascidians were noted as common.
- STATION 58 : D.R.L., 50m. In Hydrography Channel, a short distance S.E. from Green Island. Good haul, with slimy dark green mud ; common globular sponge plentiful ; polychaetes nematodes, ophiuroids and holothurians, and a large simple ascidian noted as " common ".
- STATION 59 : O.T.L., 47m. Royal Sound, about a mile N.E. of Suhm Island. Large haul of invertebrates from good trawling bottom. Main feature was large numbers of a big translucent ascidian and a rich pink holothurian.
- STATION 60B : Shore collection from Suhm Island. Nematodes from " dripping rock 10 feet above sea level ".
- STATION 60C : Shore collection from small island in Navalo Harbour.
- STATION 61 : intertidal collection from southern part of Antares Island. Nematodes from rock pool.
- STATION 62 : Poincaré Peninsula opposite Murray Island ; shore collections ; nematodes from intertidal rock pools.

STATION 64 : 49° 32' S., 70° 33' E., 2.3.30, O.T.L., 91m.; off entrance to Royal Sound.

A "very good haul of invertebrates", including cidaroids, red ophiuroids, numerous lamellibranchs, and ascidians.

Collections 103, B100 : Jeanne d'Arc ; among algae on beach.

Collection B173 : Long Island, Royal Sound : Intertidal, under stones.

Collections 752, 753 : 15.2.30, Jeanne d'Arc. Low Spring Tide level, under stones.

Collection 755 : 15.2.30 ; Tarn at head of Greenland Harbour, in green slime.

Collections 771, 772 : 15.2.30 ; Jeanne d'Arc. From sponge washed up on beach.

Collection 788 : 15.2.30 ; Jeanne d'Arc. Low Spring Tide level, under stones, among coelenterates.

Collections 789, 790, 792 : 16.2.30 ; Jeanne d'Arc, intertidal.

Collection 855 : 23.2.30 ; Green Rock, near Island Harbour, Royal Sound. Semi-stagnant pool high up on beach.

Collection 865 : 23.2.30 ; off Murray Island, among kelp.

Collection 930 : 27.2.30 ; Antares Island, intertidal pool, with hydrozoa and crustacea.

#### HEARD ISLAND.

STATION 19 : 53° 05' 30" S., 73° 24' E., Shore collection along beach of Atlas Cove. Nematodes from algae washed up on shore.

#### CROZET GROUP.

Collection from American Bay, Possession Island ; nematodes from algae taken at 12m.

#### MACQUARIE ISLAND.

##### B.A.N.Z.A.R.E. COLLECTIONS.

Station 81B : 54° 29' S., 158° 58' E. ; ashore at Buckles Bay. "Great masses" of *Durvillea* growing here.

Station 83 : 54° 42' 30" S., 158° 54' 30" E. Off Lusitania Bay ; D.R.L., 69m. Dominant forms were pectens, Veneridae, *Waldheimia* (brachiopod). Most invertebrate phyla represented.

##### A.A.E. COLLECTIONS.

The following collections were made at Macquarie Island by the A.A. Expedition during 1912-1913. The reference letters under which they are listed here follow in alphabetical sequence with those given to A.A.E. Antarctic collections recorded in Section 2 of this Report :—

G. Littoral.

H. Among seaweeds, probably at the north end of the Island.

I. Shore collection.

J. Low tide.

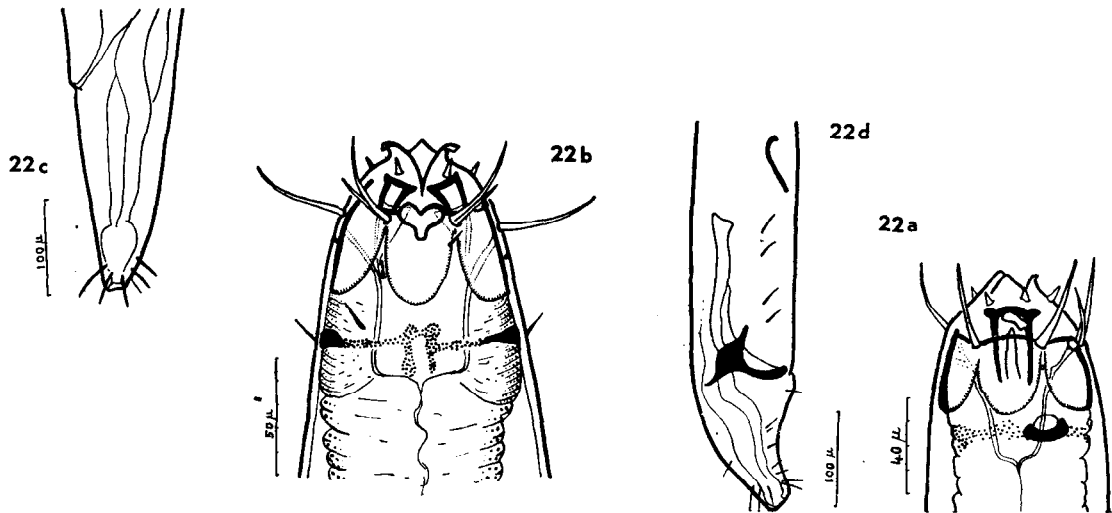
K. Below low tide.

L. Rock scrapings from below low tide, mostly sponges.

M. West coast, among green algae and oligochaetes.

N. North end of island, scrapings from rocks below low tide level.

O. Towntnet off North-East Bay, 19.6.12, "mainly Copepods, some Radiolaria".



22. *Mesacanthion kerguelenense* : a, sublateral, and b, ventral, views of head ; c, tail of female ; d, tail of male.