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CONTENTS.

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XXIV.—The Entomostraca of the Scottish National Antarctic Expedition, 1902–1904. By Thomas Scott, LL.D., F.L.S. *Communicated by* Dr J. H. Ashworth. (With Fourteen Plates.)

(MS. received January 24, 1912. Read February 19, 1912. Issued separately November 15, 1912.)

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Introductory Statement.

The Entomostraca recorded here were collected by the s.y. *Scotia* on its way to and from the Antarctic, and also while carrying on investigations there during the years 1902 to 1904. The Entomostraca in these collections belong chiefly to the Copepoda, but the Cladocera and Ostracoda are also represented, the last by a considerable number of species. These three groups are described below in the order mentioned.

The Copepoda.

The Copepoda recorded in the following pages number considerably over one hundred species. A fairly large proportion of them belong to the Calanoida and to one or two other groups of pelagic forms; these were, for the most part, obtained in samples of plankton—chiefly surface gatherings collected by tow net at various stations on the outward voyage betweeen Cape Verde and the Falkland Islands. On the other hand, most of the Harpacticoida, of which there are a good number, are from the neighbourhood of the South Orkney Islands, but some of them were also obtained in siftings from material brought up in the dredge or trawl net, and amongst organisms washed from floating Gulf-weed.

Most of the pelagic or free-swimming species from the tow-net collections are more or less widely distributed, and have been described in various published works, but some of them are tolerably rare. The Harpacticoida and other demersal forms are, however, not so well known, and a considerable number of those recorded here appear to be undescribed; a few of them are closely related to British or other northern species, and seem to lend some support to the idea of a bipolar distribution.

The occurrence at places so far distant as the Falklands and South Orkneys of demersal forms identical with, or closely allied to, those of Britain and Norway has a bearing on the question of distribution different from that concerning organisms living

freely in the open sea. Such free-swimming species are subject to dispersal over wide areas by tidal and other currents, and numerous examples of such dispersal are indicated or described by various authors; but the wide distribution of an Harpactid such, for example, as *Orthopsyllus linearis*, Claus, may not be so easily explained. This Copepod is one of a group which have an elongated and moderately slender body, provided with short appendages that are scarcely, if at all, fitted for swimming, but are rather adapted for living among branching zoophytes or on the roots and stems of seaweeds. The transporting action of currents can have much less effective influence on the distribution of such species than on species living a free life in the open sea. Nevertheless, *Orthopsyllus linearis* has been recorded from the British Islands, from Norway, the Mediterranean, the Suez Canal, the Gulf of Manaar, and the Gulf of Guinea. More recently it has been obtained in material collected in the Malay Archipelago during the *Siboga* Expedition of 1899–1902,* and now this non-swimming species is here recorded from gatherings collected by the *Scotia* among the South Orkney Islands.

Another species—*Asterocheres suberites*, Giesbrecht—belonging to a different group of Copepods, is usually found living as a commensal in the water passages of certain sponges.†

The wide dispersal of this *Asterocheres* cannot, from its peculiar habitat, be to any large extent attributed to oceanic currents, yet it has been recorded from the British Islands and the Mediterranean; and one or two specimens from a gathering collected among the South Orkneys by the *Scotia* can scarcely be distinguished from those living on British sponges. Other species equally interesting and showing the near relationship of the non-pelagic Copepoda of the far South with those of our Northern Seas will be noticed in the sequel, but two may be briefly referred to here. One of them —an Harpactid, obtained in a small gathering of minute Molluscan shells collected on the shore at Port Stanley, Falkland Islands—has a remarkable likeness to a species that was dredged in the Firth of Forth off St Monance in 1891,‡ and which has been described more recently by G. O. Sars from Norwegian specimens.§ The female of this species is distinguished by having the last pair of thoracic legs large and leaf-like,—hence the generic name *Phyllopodopsyllus*. The other form is also interesting because it may be regarded as supplying a "missing link" in the little group of nearly related species representing four genera, viz.—*Cervinia*, Norman, *Cerviniopsis*, G. O. Sars, *Zosime*, Boeck, and *Pseudozosime*, Scott. In the first genus the inner ramus of the first pair of thoracic legs is three-jointed and that of the next three pairs two-jointed; in the second all the four pairs of thoracic legs have the inner ramus three-jointed. In the third the inner ramus of the first pair is two-jointed, and that of the next three pairs three-jointed; while in *Pseudozosime* the inner ramus of all the four pairs is composed of

* *The Copepoda of the "Siboga" Expedition*, by Andrew Scott, A.L.S., p. 225 (1909).
† *Fauna u. Flora des Golfes von Neapel*, 25. Monogr., "Asterocheriden," by Dr W. Giesbrecht, p. 70.
‡ *Tenth Annual Report of the Fishery Board for Scotland*, part iii. p. 253, pl. ix. figs. 19–32.
§ *An Account of the Crustacea of Norway*, vol. v. part xix. (1907), p. 231, pl. clv.

two joints. These differences become more apparent when arranged in tabular form, thus :—

Name of the Genus.	Inner Ramus of			
	1st pair.	2nd pair.	3rd pair.	4th pair.
Cervinia	3-jointed	2-jointed	2-jointed	2-jointed
Cerviniopsis . . .	3- ,,	3- ,,	3- ,,	3- ,,
Zosime	2- ,,	3- ,,	3- ,,	3- ,,
Pseudozosime . . .	2- ,,	2- ,,	2- ,,	2- ,,

The small Harpactid, for which it has been necessary to institute the new generic name, *Pseudozosime*, was obtained by washing some material dredged in Scotia Bay, South Orkneys, in June 1903. Only one specimen—a female—was observed; it so closely resembled *Zosime*, Boeck, that only after careful dissection could the differences referred to be detected.

In this account of the Copepoda from the *Scotia* collections, the general arrangement followed is that outlined by G. O. Sars in his *Crustacea of Norway*, vol. iv. p. 2. He divides the Copepoda into seven sub-orders or tribes, viz. the Calanoida, Harpacticoida, Cyclopoida, Notodelphyoida, Monstrilloida, Caligoida, and the Lernæoida. The first three contain all the Copepoda recorded here except *Dysgamus atlanticus*, which belongs to the Caligoida. Dr G. S. Brady's Report on the *Challenger* Ostracoda and other papers on these organisms have been of much assistance in dealing with this group.

As several of the species recorded here, particularly among the Harpacticoida, appear to be undescribed, drawings of these have been prepared to show their distinguishing features, and to illustrate the descriptive notes relating to them. A few other more or less rare and interesting forms are also figured to show peculiarities of structure and some of the characteristics by which they may be determined from others closely allied to them. My son, Andrew Scott, A.L.S., has prepared a number of these drawings, and I desire to express my indebtedness to him for these, as well as for assistance in determining some of the more critical and troublesome species.

I have also to express my thanks to the Executive Committee of the Carnegie Trust for the Universities of Scotland for defraying the expenses of the plates.

I have not considered it necessary to give a list of the authors whose works have been consulted, but reference to the more important of them will be found throughout the systematic part of the Report.

Systematic List of Species Recorded or Described in this Report.

COPEPODA.

CALANOIDA.

CALANIDÆ.

Calanus, Leach.
- *minor* (Claus).
- *tenuicornis*, Dana.
- *acutus*, Giesbrecht.
- *propinquus*, G. S. Brady.

Calanoides, G. S. Brady.
- *brevicornis* (Lubbock).

Megacalanus, Wolfenden.
- *robustior* (Giesbrecht).
- *gracilis* (Dana).

Undinula, A. Scott.
- *vulgaris* (Dana).
- *darwinii* (Lubbock).

EUCALANIDÆ.

Eucalanus, Dana.
- *attenuatus*, Dana.
- *crassus*, Giesbrecht.
- *subtenuis*, Giesbrecht.

Rhincalanus, Dana.
- *gigas*, G. S. Brady.
- *cornutus*, Dana.

Mecynocera, I. C. Thompson.
- *clausi*, I. C. Thompson.

PARACALANIDÆ.

Paracalanus, Boeck.
- *aculeatus*, Giesbrecht.

Acrocalanus, Giesbrecht.
- *longicornis*, Giesbrecht.

Calocalanus, Giesbrecht.
- *pavo* (Dana).
- *plumulosus* (Claus).

Clausocalanus, Giesbrecht.
- *arcuicornis* (Dana).
- *furcatus* (G. S. Brady).

EUCHÆTIDÆ.

Euchæta, Philippi.
- *marina* (Prestandrea).

SCOLECITHRICIDÆ.

Scolecithrix, G. S. Brady.
- *danæ* (Lubbock).
- *glacialis*, Giesbrecht.

Racovitzanus, Giesbrecht.
- *antarcticus*, Giesbrecht.

CENTROPAGIDÆ.

Centropages, Kröyer.
- *furcatus* (Dana).
- *violaceus* (Claus).
- *brachiatus* (Dana).
- *calaninus* (Dana).
- *typicus*, Kröyer.

TEMORIDÆ.

Temora, Baird.
- *stylifera* (Dana).
- *turbinata* (Dana).

METRIDIIDÆ.

Metridia, Boeck.
- *lucens*, Boeck.
- *gerlachei*, Giesbrecht.

Pleuromamma, Giesbrecht.
- *abdominalis* (Lubbock).
- *gracilis* (Claus).
- *gracilis* var. *esterlyi*, nov.

LUCICUTIDÆ.

Lucicutia, Giesbrecht.
- *flavicornis* (Claus).

HETERORHABDIDÆ.

Heterorhabdus, Giesbrecht.
- *papilliger* (Claus).
- *austrinus*, Giesbrecht.

HALOPTILIDÆ.

Haloptilus, Giesbrecht.
- *acutifrons*, Giesbrecht.

CANDACIIDÆ.

Candacia, Dana.
- *pachydactyla*, Dana.
- *curta*, Dana.
- *bipinnata*, Giesbrecht.
- *æthiopica*, Dana.
- *bispinosa*, Claus.
- *simplex*, Giesbrecht.
- *longimana*, Claus.

PONTELLIDÆ.

Calanopia, Dana.
americana, Dahl.
Labidocera, Lubbock.
nerii (Kröyer).
acutifrons (Dana).
Pontella, Dana.
atlantica (M.-Edw.).
securifer, G. S. Brady.
spinipes, Giesbrecht.
Pontellina, Dana.
plumata, Dana.

PONTELLIDÆ—continued.

Pontellopsis, G. S. Brady.
regalis (Dana).
perspicax (Dana).
brevis (Giesbrecht).
villosa, G. S. Brady.

ACARTIIDÆ.

Acartia, Dana.
negligens, Dana.
danæ, Giesbrecht.

HARPACTICOIDA.

CERVINIIDÆ.

Pseudozosime, n. g.
browni, n. sp.

ECTINOSOMIDÆ.

Ectinosoma, Boeck.
antarcticum, Giesbrecht.
Bradya, Boeck.
proxima, n. sp.
Microsetella, Brady & Robertson.
norvegica (Boeck).
rosea (Dana).

MACROSETELLIDÆ.

Macrosetella, A. Scott.
gracilis (Dana).
Miracia, Dana.
efferata, Dana.

EUTERPINIDÆ.

Euterpina, Norman.
acutifrons (Dana).

CLYTEMNESTRIDÆ.

Clytemnestra, Dana.
scutellata, Dana.

HARPACTICIDÆ.

Harpacticus, M.-Edw.
fucicolus, n. sp.
piriei, n. sp.

PELTIDIIDÆ.

Alteutha, Baird.
austrina, n. sp.
dubia, n. sp.
Paralteutha, n. g.
typica, n. sp.

PORCELLIDIIDÆ.

Porcellidium, Claus.
affine, Quidor.

TISBEIDÆ.

Tisbe, Liljeborg.
austrina, n. sp.
gracilipes, n. sp.
Psamathe, Philippi.
longicauda, Philippi.
fucicola, n. sp.
Machairopus, G. S. Brady.
australis, n. sp.
major, n. sp.

THALESTRIDÆ.

Parathalestris, G. O. Sars.
clausi (Norman).
coatsi, n. sp.
affinis, n. sp.
Idomene, Philippi.
forficata, Philippi.
Dactylopusia, Norman.
frigida, n. sp.
ferrieri, n. sp.
perplexa, n. sp.
Pseudothalestris, G. S. Brady.
intermedia, n. sp.
assimilis, G. O. Sars, var.
antarctica.

DIOSACCIDÆ.

Diosaccus, Boeck.
tenuicornis, Boeck.
Amphiascus, G. O. Sars.
fucicolus, n. sp.

CANTHOCAMPTIDÆ.

Ameira, Boeck.
simulans, n. sp.
Parastenhelia, I. C. Thompson & A. Scott.
antarctica, n. sp.
Phyllopodopsyllus, T. Scott.
mossmani, n. sp.

LAOPHONTIDÆ.

Laophonte, Philippi.
rottenburgi, n. sp.
australis, n. sp.
wiltoni, n. sp.
exigua, n. sp.
Laophontodes, T. Scott.
whitsoni, n. sp.

CLETODIDÆ.

Orthopsyllus, Brady & Robertson.
linearis (Claus).

CYCLOPOIDA.

OITHONIDÆ.

Oithona, Baird.
plumifera, Baird.
minuta, T. Scott.
similis, Claus.

CYCLOPIDÆ.

Cyclopina, Claus.
belgica, Giesbrecht.
Euryte, Philippi.
similis, n. sp.

LICHOMOLGIDÆ.

Lichomolgus, Thorell.
fucicola, G. S. Brady.
Pseudanthessius, Claus.
fucicolus, n. sp.

ASTEROCHERIDÆ.

Asterocheres, Boeck.
suberites, var. *antarctica*, n. var.

ARTOTROGIDÆ.

Artotrogus, Boeck.
proximus, n. sp.

SAPPHIRINIDÆ.

Sapphirina, J. V. Thompson.
ovatolanceolata, Dana.
gemma, Dana.
iris, Dana.
angusta, Dana.
lactens, Giesbrecht.

SAPPHIRINIDÆ—continued.

Sapphirina vorax, Giesbrecht.
auronitens, Claus.
nigromaculata, Claus.
intestinata, Giesbrecht.
opalina, Dana.
gastrica, Giesbrecht.
stellata, Giesbrecht.
darwini, Haeckel.
Saphirella, T. Scott.
abyssicola, T. Scott.
Copilia, Dana.
mirabilis, Dana.
denticulata, Claus.

ONCÆIDÆ.

Oncæa, Philippi.
venusta, Philippi.
mediterranea, Claus.
conifera, Giesbrecht.

CORYCÆIDÆ.

Corycæus, Dana.
venustus, Dana.
ovalis, Claus.
obtusus, Dana.
flaccus, Giesbrecht.
rostratus, Claus.
speciosus, Dana.
longistylis, Dana.
carinatus, Giesbrecht.
longicaudis, Dana.
elongatus, Claus.

CALIGOIDA.

CALIGIDÆ.

Dysgamus atlanticus, Stp. & Ltkn.

CLADOCERA.

Evadne, Loven.
tergestina, Claus.

Evadne spinifera, P. E. Müller.

Calanus acutus, Giesbrecht.

1902, *Calanus acutus*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 17, pl. i.

This species occurred in two of the *Scotia* gatherings, in one from 200 fathoms collected in 69° 22′ S., 26° 36′ W., Station 273, and in another from 500 fathoms collected in lat. 68° 40′ S., long. 30° 18 W., Station 280.

Calanus propinquus, G. S. Brady.

1883, *Calanus propinquus*, Brady, *Report Voy. "Challenger,"* vol. viii. p. 34, pl. ii.
1892, „ „ Geisb., *F. Fl. Neapel*, vol. xix. p. 91, pl. vii. figs. 31, 34 *et seq.*

C. propinquus was met with very sparingly in a surface sample collected 28th November 1903 in 59° 43′ S., 48° 10′ W., Station 337*b*. The distribution of this species extends to the Atlantic, Pacific, and Indian Oceans, between lat. 55° N. and 65° S. (Giesbrecht).

Genus *Calanoides*, G. S. Brady, 1883.

Calanoides brevicornis (Lubbock).

1856, *Calanus brevicornis*, Lubb., *Trans. Entom. Soc. Lond.* (N.S.), vol. iv. p. 11, pl. 3.
1892, „ „ Giesb., *F. Fl. Neapel*, vol. xix. p. 90, pl. vi. figs 7, 9, 18 *et seq.*
1894, „ *frontalus*, F. Dahl, *Verh. d. zool. Gesellschaft*, p. 76.
1907, „ *brevicornis*, G. O. Sars, *Bull. de l'Institut Océanographique*, No. 101, p. 4.
1909, *Calanoides* „ A. Scott, "*Siboga*" *Exped.*, Monogr. xxixa, "Copepoda," p. 10.
1910, *Calanus* „ Stebbing, *Annals of the S. African Museum*, vol. iv. pt. iv. p. 520.

A few specimens were obtained in a surface tow-net gathering collected 5th May 1904 off Cape Peninsula, 34° 21′ S., 18° 29′ E., Station 477. This species is easily recognised by the slightly crested forehead; it appears to be widely distributed in the South Atlantic and Indian Oceans. The fifth pair of thoracic legs of the male of the species recorded here and of *Calanoides patagoniensis*, Brady, differ distinctly from those of the typical *Calanus*.

Genus *Megacalanus*, Wolfenden, 1904.*

Megacalanus gracilis (Dana).

1849, *Calanus gracilis*, Dana, *Proc. Amer. Acad.*, vol. ii. p. 18.

This species occurred very sparingly at Stations 11, 15, 18, and 29, 23° 50′ N., 21° 34′ W., to 12° 31′ N., 25° 09′ W., in the North Atlantic, and at Station 56 in the South Atlantic, 0° 42′ S., 31° 20′ W.

Megacalanus robustior (Giesbrecht).

1888, *Calanus robustior*, Giesb., *Atti Acc. Lincei Rend.*, ser. iv., vol. iv., sem. 2, p. 332.
1892, „ „ *idem*, *F. Fl. Neapel*, vol. xix. p. 91, pl. vii. figs. 15, 19 *et seq.*

Only a few specimens were obtained; they occurred in a gathering from Station 11, 23° 50′ N., 21° 34′ W., in the North Atlantic, and in two others, from Station 59, 2° 30′ S., 32° 42′ W., and Station 62, 4° 15′ S., 33° 38′ W., in the South Atlantic.

* See note on this genus in the *Copepoda of the "Siboga" Expedition*, by Andrew Scott (1909), p. 10 *et seq.*

Genus *Undinula*, A. Scott, 1909.

Syn. *Undina Dana* (name preoccupied).

Undinula vulgaris (Dana).

1849, *Undina vulgaris*, Dana, *op. cit.*, vol. ii. p. 18.
1892, *Calanus* ,, Giesb., *F. Fl. Neapel*, vol. xix. p. 92, pl. vi. fig. 11 ; pl. vii. fig. 2 *et seq.*

This species was observed in surface tow-net gatherings from a considerable number of stations, extending from Station 8, in 26° 12′ N., 20° 25′ W., to Station 82, in 20° 40′ S., 38° 20′ W. Both males and females were obtained. The structure of the fifth pair of thoracic legs in the male of this and the following species is so remarkable and so entirely different from those of the typical *Calanus*, that, as indicated by G. O. Sars, the position of these two species in the genus *Calanus* can scarcely be maintained. Dana ascribed the species named above to the genus *Undina*, but unfortunately that name was already occupied by Gould and also by Munster, and a modified form of the name was therefore adopted for the genus by my son in his Report on the Copepoda of the *Siboga* Expedition.

Undinula darwinii (Lubbock).

1860, *Undina darwinii*, Lubbock, *Trans. Linn. Soc. Lond.*, vol. xxiii. p. 7, pl. xxix.
1892, *Calanus* ,, Giesb., *F. Fl. Neapel*, vol. xix. p. 91, pl. vi. fig. 5 *et seq.*
1909, *Undinula* ,, A. Scott, "*Siboga*" *Expeditie*, "Copepoda," p. 17.

Several specimens, chiefly females, were obtained in a surface tow-net gathering collected 4th May 1904 in 34° 43′ S., 17° 15′ E., Station 476. This species is a true *Undinula.*

Fam. Eucalanidæ.

Genus *Eucalanus*, Dana, 1852.

Eucalanus attenuatus, Dana.

1849, *Calanus attenuatus*, Dana, *op. cit.*, vol. ii. p. 18.

This species occurred in samples from only five stations, all in the North Atlantic, viz., Stations 11, 12, 14, 20 and 26, 23° 50′ N., 21° 34′ W., to 14° 33′ N., 25° 9′ W.

Eucalanus crassus, Giesbrecht.

1888, *Eucalanus crassus*, Giesb., *Atti Acc. Lincei Rend.*, ser. 4, vol. iv. p. 333.
1892, ,, ,, *idem*, *F. Fl. Neapel*, vol. xix. p. 132, pl. iv. fig. 9 *et seq.*

This *Eucalanus* was obtained sparingly in two surface gatherings—one collected at Station 19, in the North Atlantic, 19° 12′ N., 24° 08′ W., the other at Station 68, in the South Atlantic—Pernambuco Lighthouse, bearing 7° 42′ S., 34° 32′ W.

Eucalanus subtenuis, Giesbrecht.

1888, *Eucalanus subtenuis*, Giesb., *op. cit.*, p. 33.
1892, „ „ *idem*, *F. Fl. Neapel*, vol. xix. p. 132, pls. xi. and xxxv.

A few specimens were obtained in samples from Stations 26, 27, and 59, 14° 33′ N., 25° 09′ W., to 2° 30′ S., 32° 42′ W.

Genus *Rhincalanus*, Dana, 1852.

Rhincalanus gigas, G. S. Brady.

1883, *Rhincalanus gigas*, Brady, *Report Voy.* "*Challenger*," vol. viii. p. 42, pl. viii. figs. 1–11.
1888, „ *nasutus*, Giesb., *op. cit.*, p. 334.
1902, „ *grandis*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 18, pl. i.
1909, „ *gigas*, A. Scott, "*Siboga*" *Expeditie*, Monogr. xxixa, "Copepoda," p. 24.

This species was obtained in two gatherings—one from 200 fathoms, collected 28th February 1903 in 69° 22′ S., 26° 36′ W., Station 273; the other from 500 fathoms, collected 2nd March, also 1903, in 68° 40′ S., 30° 18′ W., Station 280. Several specimens were obtained, large and small; the larger measured fully 8 mm. in length, while the smaller were similar to *R. nasutus*.

A careful examination of these *Scotia* specimens leaves scarcely any doubt in my mind that they all belong to the one species—*Rhincalanus gigas* of Brady, the only apparent difference between the largest and the smallest specimens being the difference in their size. Brady's specimens ranged from 8·5 to 10 mm., while the largest of the *Scotia* specimens measured fully 8 mm., and ranged from that to specimens no bigger than those found in the North Sea. I am therefore unable to regard *Rhincalanus nasutus* as anything more than a small variety of *R. gigas*, while *R. grandis* is a finer and somewhat larger form of the same species.

Rhincalanus cornutus, Dana.

1849, *Calanus cornutus*, Dana, *Proc. Amer. Acad.*, vol. ii. p. 19.
1852, *Rhincalanus cornutus*, Dana, *U.S. Explor. Exped.*, vol. xiii., II., p. 1083, pl. lxxvi.

Tolerably frequent in two surface gatherings collected 5th May 1904, Station 477, off Cape Peninsula (34° 21′ S., 18° 29′ E.), South Africa.

Genus *Mecynocera*, I. C. Thompson, 1888.

Mecynocera clausi, I. C. Thompson.

1888, *Mecynocera clausi*, I. C. Thompson, *Journ. Linn. Soc.*, "Zool.," vol. xx. p. 150, pl. xi.

Mecynocera was observed in gatherings from Stations 7, 10, 12, 13, 15, and 28, all in the North Atlantic, between 26° 23′ N., 20° 20′ W., and 13° 7′ N., 25° 9′ W. I. C. Thompson collected his specimens at the Canary Islands, nearly in the same latitude as Station 7, 26° 23′ N., 20° 20′ W.

Fam. PARACALANIDÆ.

Genus *Paracalanus*, Boeck, 1864.

Paracalanus aculeatus, Giesbrecht.

1888, *Paracalanus aculeatus*, Giesb., *op. cit.*, p. 333.

This *Paracalanus* was met with at eight stations in the North, and four in the South Atlantic, ranging from Stations 26 to 66, 14° 33′ N., 25° 9′ W., to 7° 9′ S., 34° 30′ W.

Genus *Acrocalanus*, Giesbrecht, 1888.

Acrocalanus longicornis, Giesbrecht.

1888, *Acrocalanus longicornis*, Giesb., *op. cit.*, p. 332.

A. longicornis occurred sparingly in the twenty-one samples collected between Stations 17 in the North and 95 in the South Atlantic, 20° 18′ N., 23° 22′ W., to 32° 15′ S., 47° 30′ W.

Genus *Calocalanus*, Giesbrecht, 1888.

Calocalanus pavo (Dana).

1849, *Calanus pavo*, Dana, *Proc. Amer. Acad.*, vol. ii. p. 13.

This *Calanoid* was observed in gatherings from twenty-two stations, ranging from 7 to 94, 26° 23′ N., 20° 20′ W., to 30° 25′ S., 45° 45′ W., but was not very common in any of them.

Calocalanus plumulosus (Claus).

1863, *Calanus plumulosus*, Claus, *Die freilebenden Copepoden*, p. 174, pl. xxvi. figs. 15, 16.

The only gathering in which *C. plumulosus* was observed was collected at Station 25 in 15° 15′ N., 25° 9′ W.

Genus *Clausocalanus*, Giesbrecht, 1888.

Clausocalanus arcuicornis (Dana).

1849, *Calanus arcuicornis*, Dana, *op. cit.*, p. 52.

This was one of the more common species in the *Scotia* collections. It was observed in gatherings of plankton from thirty-one stations, extending from Station 7 in the North, to Station 112 in the South Atlantic, 26° 23′ N., 20° 20′ W., to 46° 03′ S., 56° 30′ W.

Clausocalanus furcatus (G. S. Brady).

1883, *Drepanopus furcatus*, Brady, *Report "Chall.," "Copep.,"* p. 77, pl. iv. figs. 1 and 2, pl. xxiv. figs. 12–15.

In the *Scotia* collections this species appeared to be much rarer than the last. It was observed in gatherings from only four stations, viz., 12, 13, 59, and 90, 22° 19′ N., 22° 07′ W., to 26° 50′ S., 42° 20′ W.

Fam. Euchætidæ.

Genus *Euchæta*, Philippi, 1843.

Euchæta marina (Prestandrea).

1833, *Cyclops marina*, Prestandrea, *Effemeridi Sci. lett. Sicilia*, Palermo, vol. vi. p. 12.

The only species of *Euchæta* observed in the *Scotia* collections is the one named above—a species which appears to be widely distributed. It occurred more or less sparingly in gatherings from twenty-one stations, extending from Station 7 to Station 94, 26° 23′ N., 20° 20′ W., to 30° 25′ S., 45° 45′ W.

Fam. Scolecithricidæ.

Genus *Scolecithrix*, G. S. Brady, 1883.

Scolecithrix danæ (Lubbock).

1856, *Undina danæ*, Lubbock, *Trans. Entom. Soc. Lond.*, vol. iv. p. 15, pl. ix.

This, which is one of the only two representatives of the genus *Scolecithrix* observed, occurred in gatherings from eighteen stations, extending from Station 7 in the North Atlantic to Station 65 in the South, 26° 23′ N., 20° 20′ W., to 6° 52′ S., 34° 32′ W.

Scolecithrix glacialis, Giesbrecht.

1902, *Scolecithrix glacialis*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 25, pl. iv.

One or two specimens of this southern form occurred in two gatherings, one of which was collected at 200 fathoms on 28th February 1903 in lat. 69° 22° S., long. 26° 36′ W., Station 273; the other at 500 fathoms on 2nd March in 68° 40′ S., 30° 18′ W., Station 280.

Genus *Racovitzanus*, Giesbrecht, 1902.

Racovitzanus antarcticus, Giesbrecht.

1902, *Racovitzanus antarcticus*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 26, pl. iv. figs. 8–13, pl. v. figs. 1–5.

A single specimen was obtained in a sample from 200 fathoms, collected on 28th February 1903 in lat. 69° 22′ S., long. 26° 36′ W., Station 273.

The *Belgica* obtained this species at a depth of 500 metres in 70° 9′ S., 82° 35′ W. (*Belgica* Station 701). (*Vide* Dr Giesbrecht's *Copepoden of the "Belgica."*)

Fam. Centropagidæ.

Genus *Centropages*, Kröyer, 1848–1849.

Centropages furcatus (Dana).

1849, *Catopia furcata*, Dana, *Proc. Amer. Acad.*, vol. ii. p. 25.
1883, *Centropages furcatus*, Brady, *Report Voyage of the "Challenger,"* vol. viii. p. 83, pl. xxviii.
1892, ,, ,, Giesb., *F. Fl. Neapel*, vol. xix. p. 304, pls. xvii., xviii., and xxxviii.

The only gatherings in which this species was obtained were collected in the South Atlantic at Station 64, 6° 30′ S., 34° 25′ W., and Station 68A, 8° 00′ S., 34° 34′ W., Pernambuco, bearing 12 miles W.

Centropages violaceus (Claus).

1863, *Ichthyophorba violacea*, Claus, *Die freilebenden Copepoden*, p. 199, pl. xxxv.
1892, *Centropages violaceus*, Giesb., *F. Fl. Neapel*, vol. xix. p. 304, pl. iv. fig. 5 *et seq.*

This species occurred in gatherings from a number of stations both in the North and South Atlantic, from Station 7 in 26° 23′ N., 20° 20′ W., to Station 90 in 26° 50′ S., 42° 20′ W.

Centropages brachiatus (Dana).

1849, *Pontella brachiata*, Dana, *Proc. Amer. Acad.*, vol. ii. p. 27.
1852, *Calanopia brachiata*, Dana, *U.S. Explor. Exped.*, vol. xiii., II., p. 1133, pl. lxxix.
1892, *Centropages brachiatus*, Giesb., *F. Fl. Neapel*, vol. xix. p. 304, pl. xvii. figs. 26, 37 *et seq.*
1893, „ „ T. Scott, *Trans. Linn. Soc. Lond.*, ser. ii., "Zool.," vol. vi. p. 77.

Several specimens were obtained in surface tow-net gatherings collected on the 4th and 5th of May 1904 off Cape Peninsula, South Africa; Station 476, 34° 43′ S., 17° 15′ E., and Station 477, 34° 21′ S., 18° 29′ E.

Centropages calaninus (Dana).

1849, *Cyclopsina calanina*, Dana, *op. cit.*, vol. ii. p. 25.
1852, *Hemicalanus calaninus*, Dana, *U.S. Explor. Exped.*, vol. xiii., II., pp. 1105, 1106, pl. lxxviii.
1892, *Centropages* „ Giesb., *F. Fl. Neapel*, vol. xix. p. 305, pl. xvii. fig. 27 *et seq.*

The only sample in which this species was obtained was a surface gathering collected at Station 90 in 26° 50′ S., 42° 20′ W. Only one or two specimens were observed.

Centropages typicus, Kröyer.

1848, *Centropages typicus*, Kröyer, *Naturh. Tidsskr.* (N.S.), vol. ii. p. 588, pl. vi.
1863, *Ichthyophorba denticornis*, Claus, *Die freilebenden Copepoden*, p. 199, pl. xxxv.
1864, *Centropages typicus*, Boeck, *Forhandl. Videnskabs-Selsk. Christiania*, p. 19.
1892, „ „ Giesb., *F. Fl. Neapel*, vol. xix. p. 303, pls. ii., iv., xvii. fig. 48 *et seq.*

This species was observed in only one plankton sample—a gathering collected at Station 27 in 13° 38′ N., 25° 9′ W. The distribution of this species extends to the Mediterranean; and in the North Atlantic between 36° N. and 62° N. (Giesbrecht).

Fam. Temoridæ.

Genus *Temora*, W. Baird, 1850.

Temora stylifera (Dana).

1849, *Calanus stylifer*, Dana, *op. cit.*, vol. i. p. 12.
1856, *Diaptomus dubius*, Lubbock, *Trans. Entom. Soc. Lond.* (N.S.), vol. iv. p. 21.
1863, *Temora armata*, Claus, *op. cit.*, p. 195, pl. xxxiv.
1892, „ *stylifera*, Giesb., *F. Fl. Neapel*, vol. xix. p. 328, pl. v. fig. 2 *et seq.*

This species was of moderately frequent occurrence, and was observed in samples from Stations 18, 19, 26, 30, 36, 67, 68, 79, 83, 85, 86, 90, and 93, 19° 59′ N., 23° 34′ W., to 30° 05′ S., 45° 28′ W.

Temora turbinata (Dana).

1849, *Calanus turbinatus*, Dana, *op. cit.*, vol. i. p. 12.
1892, *Temora turbinata*, Giesb., *op. cit.*, p. 329, pl. xvii. fig. 14 *et seq.*

The only two samples in which this species was observed were collected at Station 12, 22° 19′ N., 22° 07′ W., and Station 14, 21° 28′ N., 22° 40′ W., both in the North Atlantic.

Fam. Metridiidæ.

Genus *Metridia*, Boeck, 1864.

Metridia lucens, Boeck.

1865, *Metridia lucens*, Boeck, *Vid. Selsk. Vorhandl.*, 1864, p. 14.
1892, „ *hibernica*, Giesb., *op. cit.*, p. 340, pl. xxxii. fig. 11 *et seq.*
1904, „ *lucens*, Cleve, *Invest. S. Africa*, vol. iii. p. 192.

A number of specimens were obtained in one or two samples collected on the 4th and 5th of May 1904 off Cape Peninsula, South Africa, Station 476, 34° 43′ S., 17° 15′ E., and Station 477, 34° 21′ S., 18° 29′ E. The Rev. T. R. R. Stebbing records the species as "abundant south and west of Cape Colony" (*Annals of the S. African Museum*, vol. vi. pt. iv. p. 535, 1910).

Metridia gerlachei, Giesbrecht.

1902, *Metridia gerlachei*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 27, pl. v.

This species was obtained in two gatherings, in one from 200 fathoms collected on 28th February 1903 in 69° 22′ S., 26° 36′ W., Station 273; and the other from 500 fathoms collected on 2nd March in 68° 40′ S., 30° 18′ W., Station 280. The distribution of *Metridia gerlachei* is apparently limited more or less to deep water, for although it was obtained at a number of stations by the Belgian Antarctic Expedition of 1897–1899, none of the samples in which it occurred were surface gatherings, but were from depths ranging from 100 to 500 metres.

Genus *Pleuromamma*, Giesbrecht, 1898.

Pleuromamma abdominalis (Lubbock).

1856, *Diaptomus abdominalis*, Lubbock, *Trans. Entom. Soc. Lond.* (N.S.), vol. iv. p. 22, pl. x.

The only gatherings in which this species occurred were collected at Stations 26 and 56, the one in 14° 33′ N., 25° 09′ W., Station 26, and the other in lat. 0° 42′ S., long. 31° 20′ W., Station 56; very few specimens were observed.

Pleuromamma gracilis (Claus). (Pl. XIII. fig. 7.)

1863, *Pleuromma gracilis*, Claus, *Die freilebenden Copepoden*, p. 197, Taf. 5.

This species was only observed in gatherings collected at Stations 14, 18, 39; all in the North Atlantic, 21° 28′ N., 22° 40′ W., to 6° 43′ N., 25° 48′ W.

Pleuromamma gracilis, var. *esterlyi*, nov. (Pl. XIII. figs. 8–10.)

1905, *Pleuromamma gracilis*, Esterly, "Copep. of the San Diego Region," *Univ. of California Publications*, vol. ii. p. 175, text-fig. C.

C. O. Esterly, in the work referred to above, describes and partly figures a form of this species which differs from what Giesbrecht appears to consider as the typical *Pleuromamma gracilis*—especially in the structure of the fifth pair of thoracic feet in the female. Dr Giesbrecht * shows the female fifth pair to consist each of a single ramus provided with three short and tolerably stout teeth, the inner one being slightly the larger; and this agrees fairly well with the specimens of *P. gracilis* in the *Scotia* collections, and with Dr Claus' original description, where, referring to the fifth pair, he says, "Der letzte Fuss des Weibchens bildet einen schmalen, undeutlich gegliederten Stab und endit mit drei kurzen Zinken." † In the form recorded by Esterly from the San Diego region—a form which is also represented in the *Scotia* collections—the rami of the fifth pair of thoracic legs in the female are distinctly two-jointed and armed at the apex with three tolerably long and spiniform teeth, the middle one being the longest (see fig. 9, Pl. XIII.). As there does not appear to be otherwise any marked difference between this form and *P. gracilis*, and in the absence of a male, I am inclined to regard this form as no more than a fairly distinct variety of *Pleuromamma gracilis*.

Fam. Lucicutidæ.

Genus *Lucicutia*, Giesbrecht, 1898.

Lucicutia flavicornis (Claus).

1863, *Leuckartia flavicornis*, Claus, *Die freilebenden Copepoden*, p. 183, pl. xxxii. figs. 1–7.
1892, „ „ Giesb., *F. Fl. Neapel*, vol. xix. p. 358, pls. v., xix., and xxxviii.
1898, *Lucicutia* „ Giesbrecht & Schmeil, *Das Tierreich*, vol. vi. p. 3.
1904, „ „ Cleve, *Mar. Invest. S. Africa*, vol. iii. p. 192.

The only samples in which this species was observed were collected at Stations 11, 36, and 49, in the North Atlantic, 23° 50′ N., 21° 34′ W., to 1° 53′ N., 27° 26′ W.

Fam. Heterorhabdidæ.

Genus *Heterorhabdus*, Giesbrecht, 1898.

Heterorhabdus papilliger (Claus).

1863, *Heterochæta papilligera*, Claus, *op. cit.*, p. 182, pl. xxxii.
1892, „ *papilliger*, Giesb., *op. cit.*, p. 372, pls. xx. and xxxix.
1898, *Heterorhabdus* „ Giesbrecht & Schmeil, *Das Tierreich*, vol. vi. p. 114.
1901, *Heterochæta papilligera*, Cleve, "Plankton from the Indian Ocean and the Malay Archipelago," *Kongl. Sv. Vet.-Akad. Handl.*, Band xxxv., No. 5, p. 7.

This species, which appeared to be moderately rare, was only obtained in a single gathering collected at Station 15, 20° 34′ N., 23° 12′ W.

* Cf. *Fauna u. Flora des Golfes von Neapel.*

† *Die freilebenden Copepoden*, p. 197 (1863).

Heterorhabdus austrinus, Giesbrecht.

1902, *Heterorhabdus austrinus*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 28, pl. vi.

H. austrinus occurred in gatherings from 200 and 500 fathoms. Only one or two specimens were obtained. These gatherings were collected on 2nd March 1903; Station 280, 68° 40′ S., 30° 18′ W.

Fam. Haloptilidæ.

Genus *Haloptilus*, Giesbrecht, 1898.

Haloptilus acutifrons, Giesbrecht.

1892, *Hemicalanus acutifrons*, Giesb., *F. Fl. Neapel*, vol. xix. p. 384, pl. iii. fig. 11, pl. xxvii. fig. 12, pl. xlii. figs. 12 and 20.
1898, *Haloptilus acutifrons*, Giesb. & Schmeil, *Das Tierreich*, vol. vi. p. 117.

A single specimen of this *Haloptilus* was obtained in each of two gatherings, in one from 200 fathoms, the other from 500 fathoms, collected on 2nd March 1903 in 68° 40′ S., 30° 18′ W., Station 280. These specimens are more than twice the size of those recorded by Dr Giesbrecht, and on that account were considered at first as belonging to a different species. A careful examination of them, however, did not reveal any difference sufficiently important to separate them from *H. acutifrons*.

Fam. Candaciidæ.

Genus *Candacia*, Dana, 1846.

Candacia pachydactyla, Dana.

1849, *Candace pachydactyla*, Dana, *Proc. Amer. Acad. Sci.*, vol. ii. p. 23.
1883, „ „ Brady, *Report Voyage of the "Challenger,"* vol. viii. p. 68, pl. xxxi. figs. 2–9.
1898, *Candacia pachydactyla*, Giesb. & Schmeil, *op. cit.*, p. 128.
1904, „ „ Cleve, *Mar. Invest. South Africa*, vol. iii. p. 187.

This was a tolerably common form in the *Scotia* plankton collections, and appeared to be widely distributed. It was observed in samples collected at twenty-eight different stations, extending from Station 7 in 26° 23′ N., 20° 20′ W., to Station 95 in 32° 15′ S., 47° 30′ W.

Candacia curta, Dana.

1849, *Candace curta*, Dana, *op. cit.*, vol. ii. p. 33.
1892, „ „ Giesb., *F. Fl. Neapel*, vol. xix. p. 424, pls. xxi., xxii., and xxxix.
1893, „ *intermedia*, T. Scott, *Trans. Linn. Soc. Lond.*, "Zool.," ser. 3, vol. vi. p. 61, pl. iv. figs. 30–37.
1898, *Candacia curta*, Giesb. & Schmeil, *Das Tierreich*, vol. vi. p. 128.

This *Candacia* was obtained sparingly in gatherings from the following five stations, viz. 31, 32, 35, and 49 in the North Atlantic, 11° 10′ N., 25° 20′ W., to 1° 53′ N., 27° 26′ W., and Station 59 in 2° 30′ S., 32° 42′ W. This species is found in the Red Sea, and its distribution extends both to the Atlantic and Pacific Oceans.

Candacia bipinnata, Giesbrecht.

1889, *Candace bipinnata*, Giesb., *Atti Acc. Lincei Rend.*, ser. 4, vol. v. p. 815.
1892, „ „ *idem*, *F. Fl. Neapel*, vol. xix. p. 424, pl. xxii. fig. 20 *et seq.*
1898, *Candacia* „ Giesb. & Schmeil, *Das Tierreich*, vol. vi. p. 129.
1904, „ „ Cleve, *Mar. Invest. S. Africa*, vol. iii. p. 186.

A few specimens were obtained in a surface gathering collected 5th May 1904 off Cape Peninsula, South Africa, Station 477, 34° 21′ S., 18° 29′ E.

Candacia æthiopica, Dana.

1849, *Candace æthiopica*, Dana, *op. cit.*, vol. ii. p. 23.

The only gathering in which this species occurred was collected at Station 12 in 22° 19′ N., 22° 07′ W.

Candacia bispinosa, Claus.

1863, *Candace bispinosa*, Claus, *Die freilebenden Copepoden*, p. 191, Taf. 27, 28.

This species occurred sparingly in gatherings from the following seven Stations: 12, 14, 15, 72, 83, 85, and 86, 22° 19′ N., 22° 07′ W., to 24° 26′ S., 40° 25′ W.

Candacia simplex, Giesbrecht.

1889, *Candace simplex*, Giesb., *op. cit.*, ser. 5, vol. v. sem. 1, p. 815, and *Fauna u. Flora des Golfes von Neapel*, vol. xix ("Copep."), p. 424, pl. xxi. figs. 10, 30, 31 *et seq.*

This species was tolerably rare in gatherings from Stations 11, 59, and 83, 23° 50′ N., 21° 34′ W., to 22° 32′ S., 39° 22′ W.

Candacia longimana, Claus.

1863, *Candace longimana*, Claus, *op. cit.*, p. 190, Taf. 27 and 33.

A single specimen of this *Candacia* was obtained in a gathering from Station 49, 1° 53′ N., 27° 26′ W.

Fam. Pontellidæ.

Genus *Calanopia*, Dana, 1852.

Calanopia americana, Dahl. (Pl. XIII. figs. 1–6.)

1894, *Calanopia americana*, Dahl, *Berichte naturf. Gesells. Freiburg* (N.S.), vol. viii. p. 21, Taf. 1, figs. 23–26.

In this species the inner ramus of the first four pairs of thoracic legs in the female are two-jointed. The female fifth pair are simple, and consist each of a single two-jointed ramus; the proximal joint is moderately stout, but the end one is narrow and rather longer than the other, and terminates in a tolerably long spine, and there are also two short spines on the outer and one on the inner margin (fig. 4).

The male differs from the female by the peculiar structure of the right antennule, the fifth and sixth joints of which are produced exteriorly into angular and gibbous expansions. The seventh joint is elongated and slender, while the base of the next one extends inwards into a horn-like projection nearly at right angles to the joint, but curved slightly forward and having its inner edge finely serrated. The remaining joints are slender and moderately elongated, except the last one, which is short; the articulations between the fifth and sixth and the eighth and ninth joints are hinged (fig. 1).

The fifth pair of thoracic legs in the male are asymmetrical, that on the left side is long and slender and terminates in a claw-like spine, while the basal part of the proximal joint expands anteriorly into a short angular process. The other foot is also elongated, but the end joints are dilated and form a thumb-like arrangement, as shown in the drawing (fig. 5).

Habitat.—This species was obtained in gatherings from Stations 64, 65, 67, and 93, 6° 30′ S., 34° 25′ W., to 30° 05′ S., 45° 28′ W.

Calanopia americana was obtained by Dr Dahl in a collection of plankton from the mouth of the river Tocantins, on the north-west coast of South America, where the water was doubtless more or less brackish. Its occurrence in the *Scotia* collections, besides extending the distribution of the species considerably, is interesting, from its having been found in the open sea.

Genus *Labidocera*, Lubbock, 1853.

Labidocera nerii (Kröyer).

1848, *Pontia nerii*, Kröyer, *Naturh. Tidsskr.* (N.S.), vol. ii. p. 579, Taf. 6.

This was a tolerably common species in the *Scotia* collections. It occurred in no fewer than twenty-eight gatherings, extending from Station 7, 26° 23′ N., 20° 20′ W., in the North Atlantic, to 95, 32° 15′ S., 47° 30′ W., in the South Atlantic, occurring at nearly regular intervals.

Labidocera acutifrons (Dana).

1849, *Pontella acutifrons*, Dana, *op. cit.*, vol. ii. p. 30.

The only gatherings in which this species was obtained were collected at Station 14, 21° 28′ N., 22° 40′ W., and Station 18, 19° 59′ N., 23° 34′ W.

Genus *Pontella*, Dana, 1849.

Pontella atlantica (M.-Edw.).

1840, *Pontia atlantica*, M.-Edw., *Hist. Nat. Crust.*, vol. viii. p. 420, Taf. 39.

This species occurred in gatherings from Stations 7, 35, and 41, 26° 23′ N., 20° 20′ W. to 5° 40′ N., 26° 4′ W., but only a few specimens were observed.

Pontella securifer, G. S. Brady.

1883, *Pontella securifer*, Brady, *Report Voyage of the "Challenger,"* vol. viii. ("Copepoda"), p. 96, pl. xlv.

Gatherings collected at Stations 41, 82, and 83 yielded a few specimens of this *Pontella*, 5° 40′ N., 26° 4′ W., to 22° 32′ S., 39° 22′ W.

Pontella spinipes, Giesbrecht.

1889, *Pontella spinipes*, Giesb., *Atti. Acc. Lincei Rend.*, ser. 4, vol. v. sem. 2, p. 28.

This species was obtained in gatherings collected at Stations 14, 44, and 82, 21° 28′ N., 22° 40′ W., to 20° 40′ S., 38° 20′ W.

Genus *Pontellina*, Dana, 1852.

Pontellina plumata, Dana.

1849, *Pontella plumata*, Dana, *op. cit.*, vol. ii. p. 27.
1852, *Pontellina plumata*, Dana, *U.S. Explor. Exped.*, vol. xiii. (ii.), p. 1135, pl. lxxix.

This moderately common species occurred in gatherings from eighteen stations, extending from Station 14 to 93, 21° 28′ N., 22° 40′ W., to 30° 05′ S., 45° 28′ W.

Genus *Pontellopsis*, G. S. Brady, 1883.

Pontellopsis regalis (Dana).

1849, *Pontella regalis*, Dana, *op. cit.*, vol. ii. p. 31.

This species occurred sparingly in gatherings from Stations 11, 35, 49, 54, 59, and 68, 23° 50′ N., 21° 34′ W., to Station 68A, 8° 0′ S., 34° 34′ W., Pernambuco bearing 12 miles W.

Pontellopsis perspicax (Dana).

1849, *Pontella perspicax*, Dana, *op. cit.*, vol. ii. p. 32.

The gatherings in which this species was observed were collected at Stations 27, 30, 35, 44, and 49, all in the North Atlantic, 13° 38′ N., 25° 9′ W., to 1° 53′ N., 27° 26′ W.

Pontellopsis brevis (Giesbrecht).

1889, *Monops brevis*, Giesb., *op. cit.*, ser. 4, vol. v. sem. 2, p. 28.

The only gathering in which this species occurred was collected at Station 67, in 7° 20′ S., 34° 38′ W.

Pontellopsis villosa, G. S. Brady.

1883, *Pontellopsis villosa*, Brady, *Report Voyage of the "Challenger,"* vol. viii. ("Copepoda"), p. 86, pls. xxxiv and xxxv.

This, which was a tolerably rare species in the *Scotia* collections, was only observed in a gathering from Station 8 in 26° 12′ N., 20° 25′ W.

Fam. Acartiidæ.

Genus *Acartia*, Dana, 1846.

Acartia negligens, Dana.

1849, *Acartia negligens*, Dana, *op. cit.*, vol. ii. p. 26.

This species was observed in gatherings collected at Stations 7, 11, 19, and 95, 26° 23′ N., 20° 20′ W., to 32° 15′ S., 47° 30′ W.

Acartia danæ, Giesbrecht.

1889, *Acartia danæ*, Giesb., *op. cit.*, ser. 4, vol. v. sem. 2, p. 26.

This occurred in gatherings from eleven stations, extending from Station 11 to Station 102, 23° 50′ N., 21° 34′ W., to 36° 31′ S., 51° 56′ W.

Tribe *HARPACTICOIDA*, G. O. Sars.*

Fam. Cerviniidæ.

Genus *Pseudozosime*, new genus.

Generic characters: Female.—In the female the body is tolerably robust, and has a general resemblance to *Zosime*, Boeck, except that the abdomen is not so clearly defined from the cephalothorax; genital segment moderately large, with a distinct transverse suture. Anterior antennæ (antennules) short, stout, and composed of about five joints. Second antennæ and mouth organs nearly as in *Zosime*. The inner ramus of all the four pairs of swimming legs is composed of two joints, and the outer of three joints. The fifth pair are of moderate size; the inner portion of the basal joint is somewhat expanded, while the second joint is comparatively small.

Remarks.—Pseudozosime differs from the other genera nearly related to it by having the inner ramus of all the four pairs of thoracic legs biarticulated, and by the fifth pair being comparatively larger and more compact.

Pseudozosime browni, new species. (Pl. VIII. figs. 9–19.)

Female.—The body of the female tolerably stout, narrow, and elongated, bluntly rounded anteriorly, and tapering slightly towards the posterior end; rostrum prominent. Length of the specimen represented by the drawing 0·95 mm.

Antennules short, stout, composed of about five joints, and densely setiferous. Antennæ with the outer ramus triarticulated, and otherwise nearly as in *Zosime typica*, Boeck. Mouth organs also somewhat similar to those in that species.

The first four pairs of thoracic legs are moderately stout, and the inner ramus is composed of two and the outer of three joints. In the first pair the inner ramus reaches to the end of the three-jointed outer one, and the joints are nearly of equal length; the

* The arrangement followed for the Harpacticoida is that of G. O. Sars, *Crustacea of Norway*, vol. v.

outer margins of both rami are fringed with minute bristles, but in the outer ramus, the spinules at the outer distal angles of the first and second joints, and also those on the third joint, are tolerably stout and elongated. In the second and third pairs the inner ramus is rather shorter than the outer, and the end joint is about twice as long as the proximal one. In the fourth pair the inner ramus is considerably shorter than the outer one, and scarcely reaches to the end of its middle joint. The fifth pair are of moderate size; the inner portion of the basal joint is somewhat expanded, and provided with four setæ—two on the inner margin and two at the apex; the second joint is smaller, and furnished with three setæ at the distal end; all the setæ are elongated. Caudal rami short, and about equal in length to the last abdominal segment.

Habitat.—South Orkney Islands; collected in June 1903, 60° 43′ 42″ S., 44° 38′ 33″ W., Station 325. Only one specimen—a female—was observed in some siftings from dredged material. Named in compliment to Dr R. N. Rudmose Brown, the *Scotia* naturalist, who was in charge of tow-netting, and who in consequence was the collector of the whole material dealt with in this monograph.

Fam. Ectinosomidæ.

Genus *Ectinosoma*, Boeck, 1864.

Ectinosoma antarcticum Giesbrecht. (Pl. II. figs. 10–13.)

1902, *Ectinosoma antarcticum*, Giesb., *Expéd. Antarct. Belge*, "Copepoden," p. 31, Taf. 12.

One or two specimens (females) of an *Ectinosoma* apparently belonging to this species were obtained in one of the small gatherings of dredged material collected by the *Scotia* among the South Orkney Islands, Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W., and in these specimens the structure of the various appendages agrees very well with the description of the species given by Dr Giesbrecht. In the genus *Ectinosoma*, the form and armature of the fifth pair of thoracic legs are usually regarded as furnishing important specific characters, and in these *Scotia* specimens, the fifth pair of legs are identical with those of *Ectinosoma antarcticum*, as shown by Dr Giesbrecht's figures, and also by our drawings on Pl. II. fig. 14.

Genus *Bradya*, Boeck, 1872.

Bradya proxima, new species. (Pl. II. figs. 1–9.)

Female.—Body moderately robust. Antennules short and stout. Antennæ with the outer ramus well developed, and reaching to the end of the inner ramus. Mandibles, maxillæ, and maxillipeds similar to those in *Bradya typica*, Boeck.

In the first four pairs of thoracic legs both rami are of moderate length, and the joints are somewhat broad and flattened, and the marginal spines of the outer ramus are also elongated and slender. In the fifth pair there is a considerable space between

the one and the other, as in *Bradya typica*; the inner lobe of the basal joint is furnished with two long, slender setæ—the inner being rather the longer one; the second joint is small, and carries three setæ at its apex; the two inner setæ are elongated and subequal, but the other is short. The appendicular bristle is slender, and scarcely reaches to the end of the short apical seta. Caudal rami very short.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903: Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Apparently rare.

Remarks.—The form described above is nearly allied to *Bradya typica*, Boeck, but differs in the armature of the last pair of thoracic legs, and in one or two other structural details.

Genus *Microsetella*, Brady & Robertson, 1873.

Microsetella norvegica (Boeck).

1864, *Setella norvegica*, Boeck, *Selskab. Forhandl. Christiania* (1864), p. 281.

This small *Harpactid* was observed in gatherings from only a few stations, viz. 37, 62, 93, 94, and 106, 7° 50′ N., 25° 31′ W., to 39° 01′ S., 53° 40′ W.

Microsetella rosea (Dana).

1847, *Harpacticus roseus*, Dana, *Proc. Amer. Acad.*, Boston, vol. i. p. 153.

This species appeared to be rather more common than the last, being present in gatherings from about fifteen stations, and with a distribution extending from Stations 7, 10, and 12 in the North Atlantic, 26° 23′ N., 20° 20′ W., to 22° 19′ N., 22° 07′ W., to Station 88 in 26° 25′ S., 42° 00′ W.

Fam. Macrosetellidæ.

Macrosetella, A. Scott, 1909.

Syn. *Setella*, Dana (but this name is preoccupied).

Macrosetella gracilis (Dana).

1846, *Setella gracilis*, Dana, *Amer. Journ. Sci.* (2), vol. i. p. 227.

This species occurred in gatherings from twenty-five stations, and appeared to be distributed over nearly the whole area traversed by the *Scotia*. The northerly Stations comprised 7, 10, 12, 14 in the North Atlantic, while Stations 93, 94, and 95 were the most southerly; 26° 23′ N., 20° 20′ W., to 32° 15′ S., 47° 30′ W.

Genus *Miracia*, Dana.

Miracia efferata, Dana, 1846.

1846, *Miracia efferata*, Dana, *Amer. Journ. Sci.* (2), vol. i. p. 230.

This was also observed in gatherings from twenty-five stations, and its distribution was somewhat similar to that of *Setella*.

Fam. Euterpinidæ.

Genus *Euterpina*, Norman, 1903.

Syn. *Euterpe*, Claus, 1863 (name preoccupied).

Euterpina acutifrons (Dana).

1847, *Harpacticus acutifrons*, Dana, *Proc. Amer. Acad.*, Boston, vol. i. p. 153.

The only gathering in which this species occurred was from Station 65 in 6° 52′ S., 34° 32′ W.

Fam. Clytemnestridæ.

Genus *Clytemnestra*, Dana, 1847.

Clytemnestra scutellata, Dana. (Pl. XIII. figs. 11 and 12.)

1847, *Clytemnestra scutellata*, Dana, *Proc. Amer. Acad.*, Boston, vol. i. p. 154.

This species was observed rather sparingly at Stations 14, 32, 33, and 39, 21° 28′ N., 22° 40′ W., to 6° 43′ N., 25° 48′ W., all in the North Atlantic. This species may be distinguished from *Clytemnestra rostrata* (Brady) by the different structure of the antennules and caudal rami. Fig. 11, Pl. XIII., shows the end-joints of one of the antennules, and the caudal rami are represented by fig. 12.

Fam. Harpacticidæ.

Genus *Harpacticus*, M.-Edw., 1838.

Harpacticus fucicolus, new species. (Pl. VIII. figs. 20–24.)

Female.—In its general appearance the female of this species is somewhat similar to *Harpacticus gracilis* (Claus).

The antennules are moderately slender and composed of nine joints; the first four are of moderate size and subequal, but the third is rather longer than any of the other three; the remaining five joints are small, and together are scarcely equal to one-fourth of the total length—the penultimate joint is the smallest. Antennæ small, the outer ramus short and composed of two joints. Mandibles and other mouth organs nearly as in *Harpacticus gracilis*.

First pair of thoracic legs slender; the outer ramus is considerably elongated, but the inner one reaches only to about the end of the first joint of the outer ramus; the armature of both rami is rather feeble. The next three pairs are somewhat similar to those in *Harpacticus gracilis*.

In the fifth pair, the inner portion of the basal joint is not much produced; it is provided with four setæ; one springs from the inner margin and three from the broadly

rounded apex; the outer margin of the second joint is nearly parallel with the inner, and near the extremity of the joint both margins converge to the angular apex; four setæ spring from the lower end of the outer margin and apex of this joint, and one from the lower end of the inner margin; all the setæ are moderately slender. Caudal rami very short.

Habitat.—Obtained on floating seaweed collected in the North Atlantic on 29th June 1904, between Cape Verde Islands and the Azores, Station 537, 29° 54′ N., 34° 10′ W.

Remarks.—The form described above has a close resemblance to *Harpacticus gracilis*, Claus, and it may ultimately have to be ascribed to that species. Meanwhile, as no male specimens have been observed, and as there are one or two slight differences between the two forms, as, for example, in the structure of the antennules and of the fifth pair of thoracic legs, it is perhaps better that the specimens from the *Scotia's* collections should be recorded under a distinct name.

Harpacticus piriei, new species. (Pl. V. fig. 15; Pl. XI. figs. 18–25.)

Female.—Body moderately stout, somewhat resembling *Harpacticus chelifer*, O. F. Müller, in its general form. Length about 0·85 mm.

Antennules composed of nine joints; the first four tolerably stout and elongated, the others small, so that, together, they are scarcely equal to a fourth of the entire length of the antennule (fig. 18, Pl. XI.). Antennæ and mouth appendages nearly as in *Harpacticus chelifer*.

The first pair of thoracic legs are tolerably slender, and somewhat similar to the species mentioned; the other three pairs are also somewhat similar to those in the same species, except that in the second pair the inner ramus is nearly as long as the outer one.

The fifth pair has the basal joint broad and its inner portion only slightly produced, and provided with four setæ of unequal lengths on its distal margin, the second seta from the outside being much longer than the others. The second joint is subtriangular in outline, the greatest width, which is near the proximal end, being about equal to half the length; the inner margin is nearly straight, but the outer is rounded and curves obliquely to the distal extremity: this joint is provided with six setæ of unequal lengths—two, having a considerable space between them, on the lower half of the outer margin, two close together at the apex, and two at the distal end of inner margin—the second seta from the inside being very small (fig. 15, Pl. V.).

The caudal rami in this species are very short.

Habitat.—Scotia Bay, South Orkneys, in siftings from some dredged material collected in 9 to 10 fathoms, in April 1903, Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species, though it resembles *Harpacticus chelifer* in some respects, differs distinctly in the form and armature of the fifth pair of thoracic legs, and also in the structure of the antennules. Named in compliment to Dr J. H. Harvey Pirie, one of the *Scotia* naturalists.

Fam. Peltidiidæ.

Genus *Alteutha*, Baird, 1845.

Alteutha austrina, new species. (Pl. X. figs. 9–15.)

Female.—Body depressed, expanded laterally, and having a general resemblance to *Alteutha depressa*, Baird. Length of the specimen represented by the drawing (fig. 9), 0·92 mm.

Antennules composed of nine joints; the second joint, which is the longest, is about equal to the third and fourth joints combined; the seventh and eighth, which are about equal in size, are smaller than any of the others (fig. 10). Second maxillipeds small, with the end joint short, and armed with a moderately stout terminal claw.

The outer ramus of the first pair of thoracic legs is considerably longer and stouter than the inner, and both rami are three-jointed—the joints of the outer ramus are subequal in length. The next three pairs are slender and similar to those in *Alteutha depressa*.

The fifth pair also resemble those of the same species: they consist of thin and moderately narrow and elongated plates with a subcentral and longitudinal hyaline band, as indicated in the drawing (fig. 14); each foot is two-jointed, but the articulation between the joints is sometimes not very clearly defined. The basal joint is short and carries a moderately stout spine on its outer distal angle; there is also a stout spine and a few small spinules at the extremity of the second joint, and the inner margin of this joint is obscurely crenulated, as shown in the figure (fig. 14).

Caudal rami short, moderately broad, and furnished each with one long and three (or four) short terminal bristles (fig. 15).

Habitat.—Scotia Bay, South Orkneys, obtained in siftings from some dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Though this species resembles in some respects Dr Baird's *Alteutha depressa*, it differs from it in some important details, as indicated in the description given above.

Alteutha dubia, new species. (Pl. X. figs. 1–8.)

Female.—Body depressed, expanded laterally, as in *Alteutha depressa*, Baird; rostrum prominent. Length, 1·4 mm.

Antennules composed of nine joints; the second is considerably longer than any of the others; the seventh and eighth are small and subequal, and the end joint is about as long as the two preceding ones combined (fig. 2). Antennæ slender; outer ramus small and biarticulate.

Second maxillipeds elongated, end joint ovate, and armed with a moderately short and stout terminal claw (fig. 4).

The swimming legs are moderately slender, and both rami are three-jointed; the

inner ramus of the first pair is considerably shorter than the outer one, and the end joint is rather narrower than the first or second (fig. 5).

Fifth pair lamelliform, tolerably broad, and composed of two joints; the first joint is produced anteriorly into a narrow appendage bearing two apical and marginal setæ; the second joint is provided with five or six slender bristles on the distal half of the outer margin and apex (fig. 7).

Caudal rami short, ovate; a tolerably stout spine springs from a notch near the middle of the outer margin, and there are also one elongate and three short setæ round the distal end of each ramus (fig. 8).

Habitat.—Scotia Bay, South Orkneys, obtained in siftings from some dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The species described above may be distinguished by the peculiar structure of the fifth pair of thoracic legs, as well as by the form and armature of the caudal rami.

Genus *Paralteutha*, new genus.

Definition.—Similar to *Alteutha*, Baird, in its general form and in its cephalothoracic appendages, except that the inner ramus of the first pair of swimming feet consists of two instead of three joints; and the lateral margins of the second joint of the fifth pair are parallel, or nearly so, while the distal extremity of the joint is obliquely truncated.

Paralteutha typica, new species. (Pl. X. figs. 16–25.)

Female.—Body depressed, expanded laterally, as in *Alteutha depressa*, Baird. Length of the specimen represented by the drawing (fig. 16), 1·6 mm.

Antennules nine-jointed, as in *Alteutha depressa*. Outer ramus of the antennæ small and biarticulate, but the end joint is very minute.

Mandibles with the masticatory end narrow and truncated, biting edge obscurely dentate. Second maxillipeds elongated, each provided with a tolerably large and powerfully clawed hand (fig. 20).

First pair of thoracic legs elongated and moderately stout, inner ramus not much shorter than the outer, and composed of two subequal joints (fig. 21). The next three pairs long and slender, and furnished with long slender marginal spines (fig. 22).

Fifth pair stout, two-jointed; the first joint is short, but the second is tolerably elongated, and about four times as long as broad; its margins are nearly parallel, and its distal extremity truncated and armed with three stout spines, the inner one being the largest. There are also two short spines on the inner margin, one near the middle of the joint, the other near its distal end. The first joint is also provided with a few long setæ, as shown in the drawing (fig. 24).

Caudal rami short and subquadrangular in outline. A short, stout spine springs from a notch on the outer margin of each ramus, and there are also a few small apical spines.

The male does not differ much from the female, except in the structure of the antennules and of the fifth pair of thoracic legs. The antennules are so modified that they form effective grasping organs. In the fifth pair of legs, the joints are nearly of equal length and their armature is also slightly different (fig. 25).

Habitat.—Scotia Bay, South Orkneys, obtained in siftings from dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species appears to hold an intermediate place between *Alteutha* and *Peltidium*. It resembles the first in its general appearance, and also to some extent in the structure of several of its appendages. On the other hand, the structure of the first pair of thoracic legs is somewhat similar to that of the same pair of legs in *Peltidium*.

Fam. Porcellidiidæ.

Genus *Porcellidium*, Claus, 1860.

Porcellidium affine, Quidor. (Pl. IV. figs. 5–13.)

1906, *Porcellidium affinis*, Quidor, *Expéd. Antarct. Française*, 1903–1905, "Copepodes," p. 4, pl. i. figs. 1–19.

Female. — The female of this species has a general resemblance to that of *Porcellidium ravanæ*, Thompson & Scott, described in Supplementary Report VII. of the Report on the Ceylon Pearl-Oyster Fisheries, by Professor Herdman. It differs, however, in the form of the first abdominal segment, as well as in the structure of the antennules; it is also somewhat larger than that species, being about 1 mm. in length.

The antennules are composed of seven unequal joints; the first three are large, their combined lengths being equal to about two-thirds of the entire length of the antennule. The remaining joints are small, but the fourth and sixth are rather longer than the others (fig. 7). The antenna (fig. 8) has the outer ramus articulated to the end of the first joint of the inner one, and is composed of a single moderately long joint. The mouth appendages and swimming feet are similar to those in *Porcellidium ravanæ*. The first pair of swimming feet are short, and the first joint of the inner ramus is a broad angular plate widest near the proximal end, but becoming narrower distally; the end joint, which is very small, is provided with two stout claw-like spines of tolerable length, which usually extend outwardly at about a right angle to the leg; in the outer ramus the first joint is moderately expanded, but the second and third are smaller. The spiniform setæ on the outer margin are all dilated at the base and plumose, but the two at the end are tolerably long and slender. A stout seta also springs from the inner distal angle of the second joint. The claw-like spines on the end joint of the inner ramus are each furnished on the lower edge with a fringe of close-set delicate filaments (fig. 9).

The next three pairs have both rami three-jointed, and moderately elongated and slender.

The fifth pair are somewhat similar to those in *Porcellidium ravanæ*, both in their general outline and in having their extremity bluntly rounded (fig. 10).

The abdomen and caudal rami also resemble the same parts in *P. ravanæ*, but in that species the caudal rami do not reach to the end of the fifth pair of feet, whereas in the present form the caudal rami reach somewhat beyond these appendages. They are also more bluntly rounded at the end, and the terminal and marginal spines are somewhat differently arranged, as shown in the drawing (fig. 12).

Male.—The male, as is usual, is smaller than the female; the antennules are modified for grasping; the fifth pair of feet are different in form and armature, and the abdomen and caudal rami are shorter (see figs. 12 and 13).

The fifth pair of feet are small, and narrow at the proximal end, but they become wider distally; the extremity is obliquely truncated and fringed with about six short setiferous spines (fig. 11). Caudal rami are very short, and have the squarely truncated ends furnished with a few marginal setæ (fig. 13).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species, as already stated, has some resemblance to *Porcellidium ravanæ*, Thompson & A. Scott, but differs in several anatomical details, as, for example, in the structure of the female antennules, as well as in the form and armature of the caudal segments. It also resembles in some respects the *Porcellidium wolfendeni* described by G. S. Brady.*

Genus *Tisbe*, Lilljeborg,† 1853.

Tisbe austrina, new species. (Pl. III. figs. 26–30.)

Female.—This species, in its general appearance, is somewhat like *Tisbe minor* (T. Scott), but is rather more slender. Length about 0·6 mm.

Antennules composed of eight joints; the second and third joints are subequal and of moderate size; the fourth is fully half as long as the third; the fifth and sixth, which are subequal, are together about as long as the fourth, but the seventh is very small; the end joint was incomplete, but appeared to be about as long as the fourth joint. The antennæ are small, and the outer ramus reaches only to the end of the second joint of the inner ramus. Mouth organs somewhat similar to those in *Tisbe minor*, but the second maxillipedes are moderately stout. All the four pairs of swimming legs are also somewhat similar to those in the species mentioned.

In the fifth pair, the inner portion of the basal joint ends in a blunt pointed apex, which bears two setæ, one being moderately stout and elongated, and the other small;

* *Deutsche Südpolar Exped.*, 1901–1903: "Über die Copepoden der Stämme Harpacticoida," *et seq.*, p. 556 (1910). Separate reprint.

† "The name *Idya* having been previously given by Blainville to a genus of Acalephæ," was changed by G. O. Sars to *Idyæa*: see *Rept. of Second Norwegian Arctic Exped. in the "Fram,"* 1898–1902, No. 18; *Crustacea*, by G. O. Sars, p. 21 (1909). Rev. T. R. R. Stebbing, in *Annals of the South African Museum*, vol. vi. p. 544 (1910), restores Lilljeborg's name, *Tisbe*.

the second joint is of a broadly ovate form, its greatest width being equal to about half the length, and it carries four (or five) short setæ round the lower part of the outer margin and apex, as shown in the drawing (fig. 30).

Caudal rami short.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. No males observed.

Remarks.—As already stated, this species has a somewhat close resemblance to *Tisbe minor* (T. Scott), first described in the *Annals of Scottish Natural History* in October 1896, from specimens obtained in the Firth of Clyde. The same species has also been recorded from Norway by Professor G. O. Sars, and it was one of the Harpactids discovered by Dr Bruce in Franz Josef Land. But the Antarctic form, though closely resembling the northern species referred to, may be readily distinguished from it by the broadly ovate form of the second joint of the last pair of thoracic legs.

The genus *Tisbe*, as Professor G. O. Sars remarks, "seems to be represented in all parts of the oceans," and he has "even found one or two species of this genus in the Caspian Sea."* Dr Giesbrecht obtained two species belonging to the *Idyæa* in the collections brought home from the Antarctic by the *Belgica* in 1899;† both these species, however, differ in several respects from those observed in the material collected by the *Scotia*; and they differ especially in the structure of the first and fifth pairs of thoracic legs. I am also unable to identify the *Scotia* species with either of those recorded by Dr Brady in his account of the Copepoda-Harpacticoida of the *Deutsche Südpolar Expedition*, pp. 560, 561.‡

Tisbe gracilipes, new species. (Pl. I. figs. 23–29.)

Female.—The female of this species is somewhat like that of *Tisbe gracilis* (T. Scott) in its general form, being elongated and rather slender.

The antennules are tolerably elongated; the second joint is rather longer than the third, which, in its turn, is about one and a half times the length of the fourth joint. The three following joints are small, while the end one is equal to the two preceding joints combined (fig. 23).

Antennæ moderately slender, the outer ramus four-jointed and rather longer than the penultimate joint of the inner ramus (fig. 24). The mandibles and other mouth organs are somewhat similar to those in *Tisbe gracilis*.

The thoracic legs are also somewhat similar to those in the species mentioned, but in the first pair, the second joint of the inner ramus is proportionally more elongated, being fully one and a half times the length of the first joint. The outer ramus scarcely reaches to the end of the first joint of the inner one (fig. 26). In the fourth pair, the

* *Crustacea of Norway*, vol. v. p. 88 (1905).

† *Resultats du Voyage du s.y.* "*Belgica*," "Copepoda," von Dr W. Giesbrecht, p. 38 (1902).

‡ *Deutsche Südpolar Exped.*, 1901–1903: "Über die Copepoden der Stämme Harpacticoida, Cyclopoida," etc. (1910).

end joint of the outer ramus is about twice as long as the preceding joint. It is also moderately narrow, and furnished with two rather stout marginal spines and two at the apex, the inner apical spine being nearly as long as the joint to which it is articulated (fig. 27).

The fifth pair are somewhat like the same pair in *Tisbe gracilis*; the second joint, however, differs in being rather wider in proportion to its length. The seta on its inner margin is also articulated nearer the middle of the joint, and the whole of the inner aspect of the joint is covered with minute hairs (fig. 28).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Rare.

Remarks.—This form resembles *Idyæa gracilis*, and might be considered as only a variety of that species, but the inner ramus of the first pair of swimming legs is proportionally and distinctly more elongated, and the second joint of the fifth pair is also more broadly ovate. Because of these differences and one or two others alluded to in the description, the species ought, I think, to be considered distinct.

Genus *Psamathe*, Philippi, 1840.

Psamathe longicauda, Philippi. (Pl. V. figs. 16–22.)

1840, *Psamathe longicauda*, Philippi, *Archiv f. Naturgesch.* (1840), p. 89, pl. iv. fig. 1.
1866, *Scutellidium tisboides*, Claus, *Die Copepoden fauna von Nizza*, p. 21, pl. iv. figs. 8–15.
1880, „ „ Brady, *Monogr. Brit. Copep.*, vol. ii. p. 175, pl. lxviii. figs. 1–10.
1905, *Psamathe longicauda*, G. O. Sars, *Crustacea of Norway*, vol. v. p. 83, pl. xlix.

A single specimen of this Harpactid was obtained in a plankton gathering collected at Station 27 in 13° 38′ N., 25° 09′ W.

The body in this species is considerably flattened, and there is a distinct break between the anterior and the posterior portions, best seen when viewed from above, the former being expanded, while the latter is narrow (see fig. 16).

The antennules are composed of nine joints; the first three are elongated and moderately stout, and are together about twice the entire length of the remaining six joints: the end joint is slender and rather longer than the three preceding joints combined (fig. 17).

Antennæ with the outer ramus four-jointed and not more than half the length of the inner one; it is also articulated to the outer distal angle of the second basal joint (fig. 18).

Maxillipeds moderately stout; first pair smaller than the second and armed with two claw-like terminal spines (fig. 19). Second maxillipeds robust; the basal joint is provided with a stout plumose seta on its inner distal angle, and the end joint with three stout terminal claws and a small plumose bristle (fig. 20).

The first pair of thoracic legs are moderately stout, and both rami are composed of three joints, but the end joints are extremely small and bear peculiar recurved terminal

spines, as shown in the drawing (fig. 21); the outer ramus is considerably shorter than the inner, and the spiniform seta at the outer angle of the second basal joint is remarkably stout. The next three pairs have both rami also three-jointed, and are of normal form.

In the fifth pair, which were somewhat imperfect, the basal joint was bilobed and moderately expanded; the end joint, which is of a narrow ovate outline, is about three times longer than broad, but, being imperfect, its dimensions could not be accurately made out (see fig. 22).

The specimen—a female—represented by the drawing (fig. 16) measured 0·88 mm. in length. It agrees so closely in size and form and in the structure of its various appendages with the description and drawing of *Psamathe longicauda* given by G. O. Sars in the work referred to above, that I have no hesitation in ascribing it to the same species.

The distribution of *Psamathe longicauda* is apparently extensive, for in addition to the Mediterranean records by Philippi and Claus, it also belongs to the Copepod fauna of Britain and Norway. It has also been reported from Franz Josef Land as well as from the Black Sea. Its occurrence at the *Scotia* Station 27 extends its distribution to the south of the Cape Verde Islands.

Psamathe fucicola, new species. (Pl. VI. figs. 12–19.)

Female.—The female of this species has a general resemblance to *Psamathe longicauda*, Philippi, but is rather smaller. The length of the specimen represented by the drawings is 0·75 mm.

Antennules moderately stout and composed of nine joints; second joint tolerably large, and fully one and a half times longer than the next; the fifth, sixth, and seventh very small; the last two joints are slender, but rather longer than those immediately preceding (fig. 12).

The antennæ, mouth organs, and swimming feet are nearly as in *Psamathe longicauda*.

In the fifth pair the second joint is about three times longer than broad; both the lateral margins are fringed with minute bristles; a small spiniform seta also springs from near the distal end of the inner margin, and another from the apex of the joint (fig. 18). The caudal rami are short and broad (fig. 19.)

Habitat.—Found on floating seaweed—"Gulf-weed"—collected between the Cape Verde Islands and the Azores in June 1904; Station 538, 32° 11′ N., 34° 10′ W.

Remarks.—The Harpactid recorded above has a close resemblance to *Psamathe longicauda*, Philippi, and may be mistaken for that species. It is, however, rather smaller; the proportional lengths of the joints of the antennules are somewhat different; the thoracic legs are rather more slender, and the armature of the fifth pair, especially, differs distinctly from the species referred to.

Genus *Machairopus*, G. S. Brady, 1883.

Machairopus australis, new species. (Pl. VI. figs. 20–28.)

Female.—Body depressed, anterior portion considerably expanded. Length about 1·1 mm.

Antennules elongated and slender and composed of nine articulations; the second and third joints, which are nearly of equal length, are longer than any of the others; the fifth and sixth are also subequal, but very small, while the end joint is narrow and rather longer than the one immediately preceding. Antennæ and mouth organs somewhat similar to those in *Machairopus idyoides*, Brady.

First pair of thoracic legs stout; outer ramus much shorter than the inner one; while the first joint of the inner ramus is considerably longer than the second, as shown by the drawing (fig. 25). The next three pairs are slender.

Fifth pair lamelliform; proximal joint small; end joint elongate ovate, widest anteriorly, the greatest width equal to rather more than one-third of the length; both lateral margins fringed with minute bristles; this joint is also furnished with three apical setæ, the innermost being very short, while the other two are moderately elongated.

Caudal rami short, about as long as the last abdominal segment.

Habitat.—Scotia Bay, South Orkneys; obtained in siftings from some dredged material collected in April 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Machairopus major, new species. (Pl. IV. figs. 14–24.)

Female.—Resembling the species last described, but larger. Length, 1·5 mm.

Antennules composed of nine joints; second and third joints moderately stout, subequal in length and longer than any of the others, the two combined being equal to the entire length of the following six joints; end joint longer than the preceding one (fig. 15).

Mandibles elongated and narrow, the masticatory end obliquely truncate; mandible pulp small and two-branched. First maxillipeds somewhat slender, but the second pair are moderately stout.

All the four pairs of swimming legs are tolerably stout; in the first pair, the outer ramus scarcely reaches to the end of the first joint of the inner ramus; the first and second joints of the inner ramus are nearly of equal length. In the next three pairs, the inner ramus is rather longer than the outer, and the marginal spines of the outer ramus are short and stout. In the fifth pair, the second joint is broadly foliaceous, somewhat ovate in outline and widest near the proximal end, the greatest width being equal to about half the length; a slender seta springs from a notch near the middle of the outer margin, and there are also about four slender and moderately elongated setæ on the bluntly rounded apex of the joint (fig. 23).

Caudal rami short.

Habitat.—South Orkney Islands; collected in April 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species differs from the last in the proportional lengths of some of the joints of the antennules, and in the form and armature of the last pair of thoracic legs. The other thoracic legs are also stouter.

One obvious character by which *Machairopus* may be distinguished from *Psamathe* is found in the armature of the outer branches of the first pair of thoracic legs. In *Psamathe* the terminal spines of both rami are somewhat similar, while in *Machairopus*, only the terminal spines of the outer ramus have their upper margins setiferous, as shown in the drawings.

Fam. Thalestridæ.

Genus *Parathalestris*, G. O. Sars, 1905.

Parathalestris clausi (Norman). (Pl. II. figs. 15–18.)

1869, *Thalestris clausi*, Norman, *Brit. Assoc. Report* (1868), p. 297.
1880, „ „ Brady, *Monogr. Brit. Copep.*, vol. ii. p. 128, pl. lxii. figs. 1–12.
1905, *Parathalestris clausi*, G. O. Sars, *Crust. of Norw.*, vol. v. p. 111, pls. lxv., lxvi.

A single specimen—a male—which undoubtedly belongs to this species, was obtained in a tow-net gathering collected by the *Scotia* at Station 62 on 13th December 1902; Station 61, 4° 15′ S., 33° 38′ W.; earlier on this date, the vessel passed Rocas Light, bearing WSW. about 30 miles, off the north-east coast of South America.

From what is known concerning the distribution of this species, its occurrence so far south appears to be somewhat unusual; its presence in this gathering may have therefore been accidental. It is moderately common round the British and Norwegian coasts, and Dr Canu records it from the French coast.

Parathalestris coatsi, new species. (Pl. III. figs. 7–16.)

Female.—Body depressed and somewhat expanded; thorax and abdomen not clearly defined; forehead broadly rounded, rostrum small, caudal rami short. Length of specimen represented by the drawing about 1 mm.

Antennules composed of nine joints; the first four are tolerably large, but the remaining five are small, their entire length being shorter than the second and third combined. Antennæ moderately stout, the outer ramus two- (or indistinctly three-) jointed.

The mandibles are moderately stout and provided with a small two-branched palp (fig. 10). Second maxillipeds stout; end joint short and armed with a strong and curved terminal claw which is furnished with a few minute spines on its inner edge; the end joint, to which the claw is articulated, has also a few minute spines on the margin on which the claw impinges (fig. 11).

The first pair of thoracic legs are stout and of moderate length; their outer ramus

is armed with elongated and tolerably stout terminal claws, and the setæ on its outer margin and apex are also elongated; the first joint of the inner ramus reaches to near the end of the second joint of the outer one; the end joints are small and the apical claws elongated; there is also a fringe of minute spines along the outer margin in both rami (fig. 12). The second, third, and fourth pairs are nearly as in *Parathalestris clausi* (Norman).

The fifth pair are broadly foliaceous, and both segments are furnished with several spines, all of which are tolerably stout, except the one at the outer distal angle of the inner segment, and the apical one on the outer segment, as shown in the figure (fig. 15).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Only a few specimens were observed; they were in some material washed from zoophytes brought in the trawl-net or dredge.

This species is named in honour of the late Mr James Coats, junior, and of Major Andrew Coats, D.S.O., who were the two chief subscribers to the Expedition. Major Coats is also a member of the Scotia Committee.

Parathalestris affinis, new species. (Pl. III. figs. 17–25.)

Female.—In its general appearance, and also in the structure of some of its appendages, the female of this species is not unlike that of *Parathalestris jacksoni* (T. Scott), recorded from Franz Josef Land, except that the caudal rami are short. The body is elongated, tolerably stout, and tapers slightly towards the posterior end, and the integument is strongly chitinous. Head rounded and furnished with a small rostrum. Caudal rami short, their length about equal to that of the last segment of the abdomen (fig. 17). Length of the specimen represented by the figure about 1·5 mm.

Antennules short, and composed of nine articulations; the first four joints are moderately large, and the upper distal portion of the fourth joint extends forward to near the middle of the next one and carries a tolerably long and stout sensory filament; the sixth joint is rather longer than the preceding one, while the seventh and eighth, which are subequal, are shorter than any of the others; the end joint is about one and a half times the length of that which precedes it; all the joints except the first are moderately setiferous (fig. 18). Antennæ with the outer ramus small and biarticulate.

Mandibles slender and becoming attenuated towards the distal end. Maxillæ strongly developed, the truncated masticatory part armed with several spiniform setæ and extending rather beyond the supplementary lobes (fig. 21).

Maxillipeds small; the second pair short, but with the end joint dilated and armed with a short and rather stout and curved terminal claw (fig. 23).

The first pair of thoracic legs have the inner ramus rather shorter than the outer, and provided with long, terminal, claw-like spines; the end joint of the outer ramus is also armed with several claw-like spines somewhat similar to those of the inner ramus, and an elongated seta springs from its inner distal angle; the second joint of the same ramus has also its outer margin fringed with minute teeth as far forward as

the spine, which spring from near its distal end, while the inner margin of the same joint and the outer margin of the inner ramus are both fringed with delicate hairs, as shown in the drawing (fig. 24). Another feature here is the presence of three small teeth on the transverse end of the first joint of the outer ramus (see fig. 24).

The next three pairs are somewhat similar in structure to the same appendages in *Parathalestris jacksoni* (T. Scott).

The fifth pair are tolerably large and foliaceous; the outer segment, which is broadly ovate in form, is provided with six setæ; five of them spring from the distal half of the outer margin and apex, and one from the lower part of the inner margin; the uppermost three on the outer margin are moderately stout and widely apart, while the two at the apex are slender and close together. The inner portion of the basal joint is shorter than the outer, and is somewhat triangular in outline, being broad at the proximal end, and tapering from thence to the rounded extremity; five setæ spring from the distal end of this inner segment; the three on the inner aspect are moderately stout and placed widely apart; the other two spring from the lower half of the outer margin and are close together; they are smaller than the others (fig. 25).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Only one or two specimens were observed.

Remarks.—The species now described is in its several appendages not unlike the northern form mentioned above, the fifth pair of thoracic legs being remarkably similar; there are, however, a few differences of more or less importance between them —the species referred to being, for example, distinctly larger, and the caudal rami entirely different.

Genus *Idomene*, Philippi, 1843.

Idomene forficata, Philippi. (Pl. III. figs. 1–6; Pl. IV. fig. 1; Pl. IX. fig. 29.)

1843, *Idomene forficata*, Philippi, *Archiv f. Naturgeschichte*, p. 65, pl. iii. fig. 4.
1880, *Dactylopus flavus*, Brady, *Monogr. Brit. Copep.*, vol. ii. p. 116, pl. lvi. figs. 1–11.
1906, *Idomene forficata*, G. O. Sars, *Crust. of Norway*, vol. v. p. 134, pl. lxxxii.

Female.—Body somewhat depressed, expanded in front, but becoming narrower towards the distal end. Length, ·57 mm.

Antennules short and composed of seven joints; the first four joints are tolerably large, but the others are smaller, the penultimate joint being rather shorter than the preceding one, and about half as long as the next. Antennæ with the outer ramus small and biarticulate.

The second maxillipeds are of moderate size; a stout seta springs from the end of the first joint, while the second is armed with a long slender claw, and a small bristle also springs from near the distal end of its inner margin.

The four pairs of swimming feet have both rami three-jointed. The first pair are stout, and the second basal joint is furnished with a stout seta on both the outer and inner margins; the first and second joints of the outer ramus are tolerably large, but

the end one is only about half the length of the preceding joint; inner ramus considerably longer than the outer, and the first joint, which is as long as the entire outer ramus, is widest near the proximal end, but becomes narrower distally; the greatest width is equal to about two-fifths of the length; second and third joints are small; the last is provided with one or two apical setæ, and a moderately stout appendage which terminates in a small hook-like process (fig. 4). The fourth pair are small, and the inner ramus is shorter than the outer one; both rami are furnished with moderately long and slender marginal setæ, and the terminal setæ are also considerably elongated.

Fifth pair small; basal joint not greatly produced interiorly, the interior part broadly rounded and provided with five elongated setæ; the space between the outermost seta and the next one is rather greater than that between the others; second joint subtriangular, and furnished with one seta on the inner margin, two setæ on the outer, and two at the apex (see fig. 29, Pl. IX.).

The male does not differ greatly from the female, but the basal joint of the fifth pair of thoracic legs is only slightly produced interiorly, and bears two instead of five setæ, while the second joint has three instead of two setæ on its outer margin (fig. 6, Pl. III.).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This Antarctic *Idomene* so closely resembles the form described by Philippi from the Mediterranean that I have scarcely any hesitation in referring it to the same species. The only difference of any importance is the small hook-like process at the end of the inner ramus of the first pair of thoracic legs. The occurrence of this species in the Antarctic collections made by the s.y. *Scotia* is of considerable importance. The distribution of *Idomene* extends to the British and Norwegian coasts.

Genus *Dactylopusia*, Norman, 1903.

Dactylopusia frigida, new species. (Pl. II. figs. 19–25.)

Female.—Body moderately stout, and somewhat similar to *Dactylopusia neglecta*, G. O. Sars, in its general appearance. Length, 0·85 mm.

Antennules moderately short and composed of nine joints; the first four are stout and subequal; the sixth is about equal to the fourth, and rather longer than the preceding joint; the seventh and eighth joints are very short, but the terminal joint is about equal in length to the fifth. Antennæ small; outer ramus moderately elongated and composed of three joints, but the middle joint is very small.

Second maxillipeds with the end joint oblong and furnished with a tolerably long slender claw.

In the first pair of thoracic legs the inner ramus is moderately elongated and narrow, but the outer is short and only reaches to a little beyond the middle one; the second joint is nearly twice as long as the first, and the end one is very small. The next three pairs are tolerably stout; in the fourth pair the short inner ramus is some-

what triangular in its general outline, and both the inner and outer margins taper to the narrow distal extremity.

In the fifth pair, the inner portion of the basal joint, which is moderately produced, is transversely truncated, and furnished with about five apical setæ; the second joint is broadly ovate and is provided with six setæ; the three setæ on the inner margin, and one near the end of the outer margin, are tolerably stout, but the other two are somewhat slender. Caudal rami very short.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Dactylopusia ferrieri, new species. (Pl. XII. figs. 14–22.)

Female.—Body tolerably stout and elongated; rostrum short; abdomen somewhat reflexed; caudal rami short (fig. 14). Length about 1 mm.

Antennules short, scarcely reaching to the end of the first cephalothoracic segment, and apparently composed of seven joints, but the articulation between the fifth and sixth joints is not very clearly defined; the first and second joints are moderately robust; the third is narrower than the second, and equal to about one and a half times its length; the other joints are small and subequal, except the sixth, which is scarcely half the length of the one that precedes it; the antennules are tolerably setiferous, and the third joint bears an extremely long sensory filament (fig. 15).

Antennæ, as in *Dactylopusia frigida*.

Maxillipeds small; the first pair are each armed with a stout terminal claw, and are also provided with two small marginal setiferous lobes, as shown in the figure (fig. 17); second pair narrow and elongated, and furnished with slender terminal claws that reach beyond the middle of the joints to which they are articulated (fig. 18).

The first pair of thoracic legs have both rami tolerably stout; the first joint of the inner ramus, which is elongated and reaches nearly to the extremity of the outer ramus, bears a moderately stout seta near the middle of the inner margin; the end joints are very small, and bear stout, terminal, claw-like spines, as shown in the figure (fig. 19); a stout setiferous spine springs from the outer margin of the first and second joints of the outer ramus, and the second joint has also a seta on the inner margin; the end joint of the outer ramus is very short and carries a tolerably stout setiferous spine on the outer margin; it is also furnished with two terminal claw-like spines and two slender and elongated setæ—the inner one being considerably longer than the other; both rami are fringed on their outer margins with small bristles, and stout setiferous spines spring from the distal end of both the outer and inner margins of the second basal joint (fig. 19).

The second, third, and fourth pairs are somewhat similar in structure to the same appendages in *Dactylopusia brevicornis* (Claus), except that the second joint of the inner ramus of the second pair is provided with two setæ on the inner margin, while the same joint in the third and fourth pairs bears only one seta. In the third pair,

the end joint of the inner ramus carries three setæ on the inner margin, two at the apex and a tolerable stout spine at the outer distal angle; but in the fourth pair, the same end joint is furnished with only two setæ on the inner margin (see figs. 20 and 21).

In the fifth pair, which are comparatively small, the basal joint is moderately expanded interiorly and provided with five elongated and rather slender plumose setæ on the broadly rounded distal end; the second joint is small, oblong in form, and about twice as long as wide; the inner margin is nearly straight, but the outer is slightly rounded and fringed with minute setæ; it is also provided with six plumose setæ round the distal end, as shown in the drawing (fig. 22).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species has a slight resemblance to the *Dactylopusia antarctica* of Giesbrecht, from the Belgian Antarctic Expedition, but it differs distinctly from it in the structure of the antennules and of the fifth pair of thoracic legs. Named in compliment to Mr James G. Ferrier, a member of Committee and Secretary to the Expedition.

Dactylopusia perplexa, new species. (Pl. II. figs. 26–30; Pl. VI. figs. 1 and 2.)

Female.—Body moderately stout. Length, 0·8 mm.

Antennules short, robust, and composed of nine joints, the first four of which are moderately large, and the second, third, and fourth are each rather shorter than the preceding one; the next two joints and the last joint are nearly equal in size, and are each fully half as long as the fourth; the seventh and eighth are also nearly equal, but they are shorter than any of the others.

Antennæ stout; outer ramus three-jointed and of moderate length; mandibles with the distal end somewhat attenuated; mandible-palp small and two-branched.

The second maxillipeds are short and rather robust, and they are provided with short but moderately stout terminal claws.

The first pair of thoracic legs are short and stout, and the rami are nearly of equal length; the outer ramus, which is slightly shorter than the other, is armed with short, stout terminal claws; in the outer ramus, the middle joint is about twice as long as the preceding one, but the end joint is small and is provided with tolerably stout terminal claws. The next three pairs are all moderately stout, with short margin spines on the outer rami.

The fifth pair are short, and both segments are somewhat expanded; the inner portion of the basal segment, which reaches to about the middle of the second, bears five setæ on its broadly rounded end; the two inner setæ are short and tolerably stout; the two outer are more slender and are close together, but the middle one, which is also stout, is moderately elongated. The second segment is broadly ovate, the greatest width being equal to about three-fourths of the length; this segment is furnished with three short setæ on the lower half of the outer margin, one on the inner margin, and

two at the apex; the apical setæ are slender, but the others are tolerably stout. Caudal rami short.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Genus *Pseudothalestris*, G. S. Brady, 1883.

Pseudothalestris intermedia, new species. (Pl. IX. figs. 1–4; Pl. XII. figs. 27–29.)

Female.—The female of this species is small, measuring only about 0·4 mm. (about $\frac{1}{60}$ of an inch), and has a general likeness to *Pseudothalestris pygmæa*, Scott.

The antennules are composed of seven joints; the second joint is tolerably large, but the next three are each shorter than the one that precedes it; the two end joints are small, and together are only about equal to the third, as shown in the formula, which gives approximately the proportional lengths of the various joints:

Numbers of the joints	1	2	3	4	5	6	7
Proportional lengths	7	8	7	3	2	3	4

In the first pair of thoracic legs, the two-jointed outer ramus is tolerably short, and the seta on the inner margin of the first joint of the inner ramus springs from slightly below the middle of the joint, instead of from near the proximal end.

The fifth pair of thoracic legs are small; the basal joint is moderately broad, and the produced inner portion is of a triangular form, and furnished with three setæ on the lower half of the inner margin, and with two on the outer margin near the apex: a distinct space also separates these two from the others; the second joint is small, and bears three setæ on the outer margin, one on the inner margin, and one at the apex—these setæ are all tolerably elongated, as shown in the drawing (fig. 5, Pl. XII.).

Male.—In the second pair of thoracic legs of the male, the second joint of the inner ramus is provided with five setæ—two on the inner margin, one near the proximal end of the outer margin, and two at the apex; and the innermost of the two apical setæ forms a stout and claw-like appendage, but the other four setæ mentioned are tolerably slender (see figs. 3 and 3A, Pl. IX.).

Fifth pair small; the inner portion of the basal joint moderately produced, and furnished with a short, stout seta on the inner margin, and with two at the apex, the outer being considerably smaller than the other (see fig. 4, Pl. IX.).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The species described above differs from *Pseudothalestris pygmæa*, Scott, and *Westwoodia minuta*, Claus (both of which it resembles to some extent), in the structure of the female antennules, in the armature of the inner ramus of the second pair of thoracic legs in the male, and in the form of the male and female fifth pair. There are also one or two other points of difference, but those referred to appear to be the most important.

Pseudothalestris assimilis, G. O. Sars, var. *antarctica*, nov. var. (Pl. IX. figs. 5–9.)

A single specimen—a male—closely resembling, if it be not identical with, the male of the species referred to, described by G. O. Sars in his *Crustacea of Norway*, vol. v. p. 141, was obtained in the same gathering with *P. intermedia*, collected in Scotia Bay, South Orkneys, Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. But though agreeing with some of the more important characters of that species, it differed in one or two minor points. In the first pair of thoracic legs the seta on the inner margin of the first of the inner ramus was situated nearer the proximal end of the joint.

The inner produced portion of the basal joint of the fifth pair is narrower, and the second joint is broader, and further, this joint is only provided with five instead of six setæ (see fig. 8). On account of these differences, I am inclined to regard this as a variety of the species it otherwise so closely resembles.

Fam. Diosaccidæ.

Genus *Diosaccus*, Boeck, 1872.

Diosaccus tenuicornis (Claus).

1863, *Dactylopus tenuicornis*, Claus, *Die freileb. Copep.*, p. 127, pl. xvi. figs. 17–23.
1880, *Diosaccus tenuicornis*, Brady, *Monogr. Brit. Copep.*, vol. ii. p. 68, pl. lix. figs. 12–16, pl. lx. figs. 14–18.
1906, *Diosaccus tenuicornis*, G. O. Sars, *Crust. of Norway*, vol. v. p. 146, pl. lxxxix. and xc.

A single specimen—a male—was obtained in a tow-net gathering from Station 85, collected on 22nd December 1902, 23° 8′ S., 39° 40′ W.

Genus *Amphiascus*, G. O. Sars, 1905.

Amphiascus fucicolus, new species. (Pl. IX. figs. 23–28.)

Female.—Somewhat like *Amphiascus similis* (Claus) in general appearance; rostrum prominent; abdomen strongly flexed. Length about 0·8 mm.

Antennules eight-jointed; first and second joints robust and subequal; the next two shorter and not so much dilated; the fifth and seventh joints are smaller than any of the others; the sixth is nearly as long as the fourth, while the last, which is narrow, is about equal in length to the third (fig. 23).

In the first pair of thoracic legs, the outer ramus is considerably shorter than the inner one, and the middle joint is about twice the length of the first (fig. 26). In the fourth pair, the outer ramus is rather longer than the inner one (fig. 27).

The fifth pair of legs are of moderate size and broadly foliaceous; the interior of the basal joint, which is only slightly produced, is provided with two short and three tolerably long slender hairs on the distal margin; the second joint has a subquadriform outline, the length being only a little greater than the width; its distal end is obliquely truncated and furnished with five setæ of unequal lengths—one near the

middle of the outer margin; two, close together, at the apex; and two, also close together, situated nearly intermediate between the apical setæ and the outer one; there is also a seta on the lower half of the inner margin, as shown in the drawing (fig. 28). Tail segments very short.

Habitat.—In siftings from Gulf-weed collected by the *Scotia* off the Canary Islands on 29th June 1904; Station 537, 29° 54′ N., 34° 10′ W.

Fam. Canthocamptidæ.

Genus *Ameira*, Boeck, 1865.

Ameira simulans, new species. (Pl. VII. figs. 23–28.)

Female.—Body resembling *Ameira tau* (Giesbrecht) in its general appearance. Length, 0·6 mm.

Antennules composed of eight joints; the second joint is large and nearly one and a-half times longer than the next, and about twice as long as the fourth joint, but the two end joints are very short. The approximate proportional lengths of the various joints are shown by the formula:

Number of the joints	1	2	3	4	5	6	7	8
Proportional lengths	6	11	8	6	4	5	2	2

The first pair of thoracic legs, and also the following three pairs, are all somewhat similar to those in *Ameira tau* already referred to.

The fifth pair are very small; the inner portion of the basal joint, which is transversally truncated at the end, is furnished with five setæ—four of them on the truncated apex and one on the lower half of the inner margin; the second joint (or segment) is tolerably expanded at the base, and tapers towards the bluntly rounded extremity; this joint is also provided with five setæ, one of which springs from the outer margin, and the other four from the rounded apex.

Caudal rami very short.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The species recorded above has a tolerably close resemblance to *Ameira tau*, described by Dr Giesbrecht in his work *Die freilebenden Copepoden der Kieler Föhrde*, p. 117 (1882), but it differs in one or two important particulars, and especially in the form of the last pair of thoracic legs.

Genus *Parastenhelia*, I. C. Thompson & A. Scott, 1903.

Parastenhelia antarctica, new species. (Pl. IV. figs. 25–33.)

Female.—Somewhat similar to *Parastenhelia anglica*, Norman & Scott, in its general appearance. Length, 0·85 mm.

Antennules composed of nine joints, the first two or three moderately stout, the

others becoming attenuated towards the distal extremity; the second joint is rather onger than the first or third; the fourth, fifth, and sixth are subequal in length, and are each rather shorter than the third; the three end joints are small, but the penultimate one is rather shorter than that on either side (fig. 25). The antennæ are similar to those in *Parastenhelia anglica.*

Mandibles small, tolerably slender, and narrower towards the apex, which is armed with three or four small teeth (fig. 26); mandible-palp very small and two-branched.

First maxillipeds simple; terminal claw moderately stout (fig. 27); second maxillipeds furnished with a stout spiniform bristle near the middle of the inner margin of the penultimate joint, and the terminal claw scarcely reaches beyond the proximal end of the same joint (fig. 28).

All the four pairs of swimming legs are slender. The inner ramus of the first pair is considerably longer than the outer and composed of two joints; the end joint is short, but the first is greatly elongated and furnished with a plumose bristle near the middle of the inner margin, and a few scattered spinules on the distal half of the outer margin; the terminal claws are slender; one is moderately elongated, the other shorter. The middle joint of the outer ramus is also tolerably elongated, and the first and second joints are each furnished with a slender spine near the distal end of the outer margin, and there are also several marginal spinules; the short end joint is armed with two slender terminal claws and two elongated setæ; the second basal joint of this pair has the lower margin fringed with small spinules, and a stout seta springs from both its inner and outer distal angles (fig. 28).

The second, third, and fourth pairs are similar to those in *Parastenhelia anglica* (fig. 29).

Fifth pair small; the inner portion of the basal joint, which is subtriangular in outline, reaches to about the middle of the outer second joint, and bears five setæ of unequal lengths round its distal end; the second joint is broadly ovate, and the outer and inner margins of the proximal portion of the joint are nearly parallel; but the distal end is somewhat rounded and furnished with six setæ arranged as shown in the drawing (fig. 32).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The genus *Parastenhelia* was established by I. C. Thompson & A. Scott in 1903 for two Harpactids from the pearl-oyster beds in the vicinity of Ceylon.* In the species belonging to this genus, the inner ramus of the first pair of thoracic legs is usually elongated and composed of two joints. Besides the two species from Ceylon, and the one now recorded, another is described in the *Crustacea of Devon and Cornwall,* by Canon A. M. Norman & T. Scott, p. 148, pl. x. figs. 10 and 11 *et seq.*

* *Report to the Government of Ceylon on the Pearl-Oyster Fisheries of the Gulf of Manaar*, by W. A. Herdman, D.Sc., F.R.S.; *Supplementary Report on the Copepoda*, by I. C. Thompson & A. Scott (1903), p. 263.

Genus *Phyllopodopsyllus*, Scott, 1896.

Phyllopodopsyllus mossmani, new species. (Pl. V. figs. 1–14.)

Female.—In its general appearance, the female of this species resembles that of *Phyllopodopsyllus bradyi*; there are, however, a few small but obvious differences which, though they may not be of so much importance as to separate this form generically, are yet sufficient to exclude it from any species hitherto described. The length of the specimen represented by the drawing on Pl. V. is 0·71 mm.

Antennules nine-jointed, like those of the type species; the first joint is large and about equal to the combined lengths of the next three joints: these three joints do not differ much in size, but the third and fourth are each rather smaller than the preceding joint; the seventh and eighth are smaller than any of the others, and are together only equal to about half the length of the end joint; the second joint wants the spur-like process with which that joint is armed in both the type species: *Phyllopodopsyllus bradyi* and the *Phyllopodopsyllus furcifer* described by G. O. Sars (fig. 2). The antennæ are similar to those of the type species, as are also the maxillæ, but the mandibles are rather stouter, and the two branches of the mandible-palp do not differ so much in length, the lower branch being in the type species distinctly smaller than the other. The two pairs of maxillipeds are similar to those in the type species (fig. 4).

The swimming legs have the inner rami all two-jointed and the outer rami three-jointed; in the first pair the inner ramus is fully one and a half times longer than the outer one, the first joint being considerably longer than the entire outer ramus; the end joint, which is much smaller than the first, is armed with a stout apical claw and an elongated seta. In the second and third pairs, the inner ramus, which scarcely reaches the end of the second joint of the outer, has the joints subequal. In the fourth pair, the inner ramus is very small, being shorter than the first joint of the outer one (see figs. 7–10).

The fifth pair form each a large foliaceous plate, somewhat oval in outline; its length is equal to about twice the width, its distal end is rounded but the inner portion slightly produced, and it is furnished with several small setæ round the inner margin and apex (fig. 11).

The caudal rami are about equal in length to the last segment of the abdomen, and the principal tail seta, which is somewhat dilated at the base, is long and slender.

Male.—The male is smaller than the female, and measures only about 0·55 mm. in length. The structure of the antennules is modified so that they form effective grasping organs. In the second pair of swimming feet the inner rami are proportionally rather longer than in the female.

The fifth pair are small and normal in structure (fig. 12). The caudal rami are more slender than in the female, and the principal tail seta is not only elongated but is also somewhat stout and spiniform.

With these exceptions, the structure of the male and female is somewhat similar.

Habitat.—Amongst small shells and other things collected on the shores of the Falkland Islands in Port Stanley by the S.Y. *Scotia*; Station 118, 51° 41′ S., 57° 51′ W.

Remarks.—Perhaps the most noticeable difference between the present species and the two already described is the absence of the tooth-like process on the second joint of the antennules. But there is also a slight difference in the form of the fifth pair of thoracic legs of the female, as well as of the caudal rami. Named in compliment to Mr MOSSMAN, meteorologist to the Expedition.

Fam. LAOPHONTIDÆ.

Genus *Laophonte*, Philippi, 1840.

Laophonte rottenburgi, new species. (Pl. VII. figs. 1–6.)

Female.—Body narrow, elongated. Length, 1 mm. ($\frac{1}{25}$ of an inch).

Antennules seven-jointed; first three moderately stout and of nearly equal length; the fourth and fifth joints are short, while the next two are each about twice as long as the fifth. The second joint is produced behind into a stout, blunt-pointed tooth (fig. 1).

Antennæ and mouth-organs somewhat similar to those of the next species.

The first pair of thoracic legs are moderately stout; the outer ramus is composed of three subequal joints, and reaches to about the middle of the first joint of the inner ramus. The inner ramus is tolerably elongated; the first joint is long and narrow, and bears seven or eight widely scattered hairs on the inner margin; the terminal claw is long and tolerably stout (fig. 3). In the next three pairs, the first joint of the inner ramus is very short, but the second is moderately elongated.

In the fifth pair, which are comparatively small, the proximal joint is of moderate size and broadly subtriangular, and the distal end, which reaches beyond the middle of the second joint, is obliquely truncated and furnished with about five setæ; the three on the inner margin are set widely apart, while the two at the outer distal angle of the joint are moderately close together, with a considerable space between them and the nearest of the other three; the second joint is broadly ovate, transversely truncated at the end, and furnished with four setæ on the truncated margin and two on the outer margin, as shown in the drawing (fig. 5).

Caudal rami short.

Habitat.—South Orkney Islands, in siftings from some dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species is easily distinguished from the other species of *Laophonte* described here by the structure of the antennules and of the last pair of thoracic legs. Named in compliment to Dr PAUL ROTTENBURG, a subscriber and one of the members of Committee.

Laophonte australis, new species. (Pl. XI. figs. 10–17.)

Female.—Body slender and elongated; similar to *Laophonte minuta*, Boeck, in general appearance. Length, 0·77 mm. (fig. 10).

Antennules moderately stout and composed of seven articulations. Antennæ with the outer ramus very rudimentary or wanting (see figs. 11 and 12).

Second maxillipeds rather slender; end joint moderately elongated and narrow, widest near the middle; inner margin nearly straight, the outer slightly gibbous; terminal claw long and slender (fig. 13).

Inner ramus of the first pair of thoracic legs elongated; outer ramus three-jointed, and scarcely half the length of the inner, and with the second joint rather longer than the first or third (fig. 14). In the second pair, the inner ramus is moderately stout and composed of two joints, the end one of which scarcely reaches beyond the second joint of the three-jointed outer ramus; the end joint of the outer ramus is tolerably elongated and slender, and about one and a half times longer than the preceding joint (fig. 15).

In the fifth pair, the basal joint is broadly expanded and its inner lobe is obliquely truncated and carries about six setæ along the truncated margin, but the third one from the inside is very small; end joint small, ovate, and furnished with five setæ on the subtruncated end, as in the drawing (fig. 16), width being equal to about two-thirds of the length; the end of this segment is obliquely truncated and provided with six setæ, arranged as shown in the drawing (fig. 14).

Caudal rami about as long as the last abdominal segment.

Habitat.—Scotia Bay, South Orkneys, in siftings from dredged material, collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

This species may be distinguished from the others by the structure and armature of the antennules and of the first and fifth pairs of thoracic legs.

Laophonte exigua, new species. (Pl. VII. figs. 16–22.)

Female.—Body small, narrow, elongated. Length, 0·62 mm.

Antennules composed of seven joints; second and third joints subequal and moderately long, fourth and fifth small; but the sixth and seventh, which are nearly equal, are each about twice as long as the fifth joint. Antennæ and mouth organs nearly as in *Laophonte wiltoni*.

The inner ramus of the first pair of thoracic legs is long and slender, but the outer is very short and composed of only two joints. In the next three pairs, the inner ramus is short, moderately stout, and composed of two nearly equal joints, the first joint being slightly larger than the other.

The fifth pair are small, and the inner portion of the basal joint scarcely reaches the middle of the second joint, and is furnished with four setæ. The second joint has the apex broadly but irregularly rounded, and furnished with six setæ, three on the inner aspect and three on the outer, with a distinct space between each group of three.

Caudal rami as long as the last abdominal segment: each ramus ends in a tolerably stiff and moderately long bristle, and one or two smaller setæ (fig. 17).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The present form has at first sight a superficial resemblance to *Laophonte minuta*, Boeck, but a closer examination reveals certain differences in the structure and armature of the first and fifth pairs of thoracic legs, as well as one or two other anatomical details sufficient to exclude it from that species.

Laophonte wiltoni, new species. (Pl. VII. figs. 7–15.)

Female.—Body slender and elongated and somewhat similar to the species described above in its general appearance. Length of the specimen represented by the drawing is about 0·9 mm.

The antennules are composed of seven joints, and the first three are tolerably large and subequal; the fourth and fifth are very short, while the next two, which are nearly of equal size, are each about one and a half times as long as the fifth. Antennæ and mouth organs nearly as in the species previously described.

The first pair of thoracic legs are tolerably slender, the outer ramus, which reaches to the middle of the first joint of the inner ramus, is three-jointed, and the middle joint is rather longer than the first or third. The next three pairs are somewhat similar to those in *Laophonte australis*.

In the fifth pair, the basal joint is somewhat narrow and subtriangular in outline, and reaches to beyond the middle of the second joint; it is provided with six setæ, three of which spring from the inner margin and two from the outer margin, and one is articulated close to the apex. The second joint is moderately expanded, the greatest width more than half the length; distal end produced, triangular in form and provided with one seta on the inner margin, one at the apex, and five on the outer margin.

Caudal rami as long as the last segment of the abdomen.

Habitat.—Scotia Bay, South Orkneys, in some siftings from dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species is rather smaller than any of the other *Laophontes* described here, and it may be distinguished from them not only by its size but also by the structure of the first pair of thoracic legs, and by other, though perhaps less obvious, differences. The species is named in compliment to Mr D. W. Wilton, one of the naturalists who took part in the Scottish National Antarctic Expedition.

Genus *Laophontodes*, T. Scott, 1894.

Laophontodes whitsoni, new species. (Pl. VIII. figs. 1–8.)

Female.—Body narrow, elongated, and tapering slightly towards the distal extremity; the animal has a general resemblance to the female of *Laophontodes typicus*, T. Scott, but is rather more slender, and the caudal rami are short, whereas in the species men-

tioned they are elongated. The length of the specimen represented by the drawing (fig. 1) is 0·62 mm. ($\frac{1}{40}$ of an inch).

Antennules tolerably slender, and composed of five joints, the penultimate being very small. Antennæ small; outer ramus wanting.

Mandibles and other mouth-organs nearly as in *Laophontodes typicus*; the second maxillipeds are slender, and are each provided with a long and slender terminal claw.

The first pair of thoracic legs resemble those of the species mentioned, and the next three pairs are also similar to those in the same species. In the second, third, and fourth pairs, the inner ramus is short, two-jointed, and very slender, the first joint being very small; the inner ramus of the pair is, however, proportionally rather more elongated than the others.

In the fifth pair, the basal joint is rather longer than the second one, and both are provided with a few setæ.

Caudal rami short, scarcely longer than the last segment of the abdomen.

Habitat.—Scotia Bay, South Orkneys, in some siftings from dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The form described above may be at once recognised from any previously described species by its short caudal rami; it is also rather more slender and elongated than any of those previously described.

Its occurrence in the *Scotia* collections is a further indication of, in some respects, the close similarity between the Copepod fauna of the Antarctic and that of our northern seas. G. O. Sars has recorded three species of *Laophontodes* from the coasts of Norway, and two of them also occur in British waters. Moreover, one of these northern forms (*Laophontodes typicus*) was also collected by Dr Bruce as far north as Franz Josef Land. All the three northern species are provided with long caudal rami, and are thus readily distinguished from the one now described. This species is named in compliment to Mr Thomas B. Whitson, a member of Committee and Honorary Accountant to the Expedition.

Fam. Cletodidæ.

Genus *Orthopsyllus*, Brady & Robertson, 1873.

Orthopsyllus linearis (Claus). (Pl. IX. figs. 10–22.)

1866, *Liljeborgia linearis*, Claus, *Die Copepoden-fauna von Nizza*, p. 22, t. ii. figs. 1–8.
1873, *Orthopsyllus linearis*, Brady & Robertson, *Ann. and Mag. Nat. Hist.*, vol. xii. p. 138.
1880, *Cletodes linearis*, Brady, *Monogr. Brit. Copep.*, vol. ii. p. 95, pl. lxxx. figs. 1–14.
1909, *Orthopsyllus linearis*, G. O. Sars, *Crust. of Norway*, vol. v. p. 289, pl. cxcix.

Female.—The body, viewed from above, is narrow and elongated; the posterior margins of the segments are dentated; rostrum blunt and slightly produced. Caudal rami short; each ramus is provided with a stout and tolerably elongated terminal bristle. The specimen represented by the drawing (fig. 10) measures about 1·7 mm. in length.

The antennules are short and composed of four joints; the second joint is armed

with a tolerably stout, short, but prominent tooth on the lower aspect, while the third joint carries a moderately long sensory filament. Antennæ small; outer ramus uni-articulate. Mandibles small and provided with a small one-branched palp.

Thoracic legs small. In the first pair, the inner ramus is rather longer than the outer, and the proximal joint is nearly twice as long as the end one. In the next three pairs, the inner ramus is very short, and the proximal joint extremely small (see figs. 16–19).

The fifth pair has the basal joint tolerably broad and lamelliform, and produced interiorly to near the end of the second joint; the distal half of the inner margin of the basal joint is obliquely and somewhat unevenly rounded, and furnished with five setæ, three on the inner margin and two at the apex; the second joint is moderately narrow, its width at the widest part being scarcely equal to half the length: this joint bears six setæ; the apical seta is tolerably stout and elongated, but the one on either side of it is small; the other three setæ, which are of moderate length, spring from the outer margin, as shown in the drawing (fig. 20).

Male.—In the male, the antennules are modified to form grasping organs. The inner ramus of the second pair of thoracic legs is three-jointed, and the second joint is produced into a long and tolerably stout spiniform appendage (fig. 21). In the fifth pair, which are very small, the basal joint is scarcely produced interiorly, and is provided with two short setæ; the outer joint is short and narrow, and furnished with three small setæ on the outer margin and two at the apex (fig. 22).

Habitat.—Scotia Bay, South Orkneys, in siftings from some dredged material collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—This species, though not very common, has apparently an extensive distribution. Professor G. O. Sars records it from Skjærstad Fjord in Norway—just within the Arctic Circle, and Dr G. S. Brady from a few British localities. Dr Claus obtained the species in the Mediterranean, and it also occurred in collections from the Gulf of Guinea brought home by the telegraph steamer *Buccaneer*. After a careful examination of the South Orkney specimens, I am unable to discover any essential difference between them and those described by the authors mentioned above.

Tribe *CYCLOPOIDA*.

Fam. Oithonidæ.

Genus *Oithona*, Baird, 1843.

Oithona plumifera, Baird.

1843, *Oithona plumifera*, Baird, "Notes on British Entomostraca," *Zoologist*, vol. i. pp. 193–197.

This species was observed in gatherings from various stations, extending from Station 11, 23° 50′ N., 21° 34′ W., in the North, to Station 68 in the South Atlantic, Pernambuco, 7° 42′ S., 34° 32′ W. Its distribution, which is widely extended, reaches to at least as far north as the British Islands.

Oithona minuta, T. Scott.

1894, *Oithona minuta*, T. Scott, *Trans. Linn. Soc.*, Ser. 2, "Zool.," vol. vi. p. 90, pl. ix. figs. 14–25.

This somewhat rare form was observed in only a single plankton sample collected at Station 66 in 7° 09′ S., 34° 30′ W.—that is, between two of the stations where *Calanopia americana*, Dahl, was obtained. The specimens from which the species was described were obtained in Bananah Creek, at the mouth of the river Congo, and in Loanda Harbour.

Oithona similis, Claus.

1866, *Oithona similis*, Claus, *Die Copepoden fauna von Nizza*, p. 14.
1902, „ „ Giesb., *Expéd. Antarct. Belge* (1897–1899), "Copepoda," p. 28.

The only stations where this species was met with were 102 and 116, in 36° 31′ S., 51° 56′ W., and 49° 35′ S., 57° 40′ W. respectively; Station 116 was the last station but one before reaching the Falkland Islands. *Oithona similis* was obtained in many of the plankton samples collected by the S.Y. *Belgica* during its visit to the Antarctic in 1897–1899. These samples were collected between lat. 69° 48′ S. and lat. 71° 24′ S., and long. 81° 19′ W. and long. 89° 12′ W. The distribution of this species is very extensive, and it is usually of more or less frequent occurrence all over the North Sea, as well as in the North Atlantic.

Fam. Cyclopidæ.

Genus *Cyclopina*, Claus, 1863.

Cyclopina belgicæ, Giesbrecht. (Pl. I. figs. 2–13.)

1902, *Cyclopina belgicæ*, Giesb., *Expéd. Antarct. Belge*, "Copep.," p. 3, pl. vii. figs. 1–15.

A few specimens of a *Cyclopina* that agrees generally with *Cyclopina belgicæ*, Giesbrecht, were obtained in one of the gatherings collected by the *Scotia* in Scotia Bay, South Orkneys, in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

In the female of this species, the antennules are composed of eighteen articulations; the first three joints are tolerably large, and do not differ greatly in size, but the second is rather smaller than the one on either side; the next three are very short, more so than any of the others; the seventh and eighth are larger; the remaining ten joints are small, but the last two are rather longer than those immediately preceding (fig. 3).

The end joint of the posterior antennæ is provided with several geniculated setæ at its apex, and there are also one or two setæ near the middle of the upper margin; the end joint is about twice as long as the third, while the third is rather longer than the second (fig. 4).

The mandibles have their masticatory edge truncated and armed with several tolerably large teeth (fig. 5).

The other mouth organs and the swimming feet do not differ very much from those

in *Cyclopina littoralis*, G. S. Brady. The fifth pair in the female has the end joint elongated and narrow; it is about three times longer than broad, and its armature comprises four setæ, three terminal and one near the middle of the outer margin (fig. 12).

As stated above, these *Scotia* specimens agree fairly well with GIESBRECHT's description and figures of his *Cyclopina belgicæ*, and are therefore ascribed to that species.

Genus *Euryte*, Philippi, 1843.

Euryte similis, new species. (Pl. I. figs. 14–22.)

Description of the Female.—The female of this species somewhat resembles that of *Euryte robusta*, Giesbrecht, in its size and general appearance (fig. 14).

The antennules are tolerably stout, and composed of twenty-one joints; the first joint is robust and about twice the length of the second, while the second is about one and a half times as long as the third; the next six joints are very short, and the others, though somewhat longer than those immediately preceding, are also tolerably short and are all more or less of similar size, except the end joint, which is rather longer than the penultimate one (fig. 15). The posterior antennæ closely resemble those of *Euryte robusta*, Giesbrecht.

Both pairs of maxillipeds, which are moderately stout, also resemble those of the species mentioned. The first pair have the basal joint furnished near the distal end with a spine which is gibbous at the base and with a furcated process; the end joints, which terminate abruptly, bear several tolerably stout, elongated, and slightly curved apical spines (fig. 17). The second maxillipeds are four-jointed; the third joint is short, but the others are of moderate length; the last one is narrow, and armed with two apical claws of unequal length (fig. 18).

The first four pairs of swimming feet are nearly all similar to those of *Euryte robusta*; both branches are moderately stout and three-jointed, and the inner is rather longer than the outer branch; in all the four pairs, the end joint of the inner branch is provided with dagger-shaped spines, but with no setæ; in the first, third, and fourth pairs, the number of spines on the end joint of the inner branch is seven, while the end joint of the second pair bears only five, arranged as shown in the drawings. In the fourth pair, the end joint of the outer branch is armed with nine dagger-shaped spines, three on both the inner and outer margins and three at the apex; the end joint of the outer branch in the third pair is also similarly armed (figs. 19–21).

The fifth pair are similar to those of *Euryte longicauda*, Philippi (fig. 21). The third and fifth segments of the abdomen are nearly of equal length and rather longer than the fourth segment; furcal segments about one and a half times the length of the last abdominal segment (fig. 22).

Remarks.—*Euryte longicauda*, Philippi, has been recorded from the Mediterranean, the Black Sea, and the coasts of France, Britain, Norway, and East Greenland. It has

been obtained with other interesting Crustacea in collections made by Dr Bruce in Franz Josef Land, and G. M. Thomson records a variety (*E. longicauda* var. *antarctica*, G. M. Thom.) from New Zealand; and another species—*E. robusta*, Giesbrecht—is recorded from the Mediterranean. The form described above resembles the species last referred to, but appears to differ in one or two minor points, such as in the armature of the first and fourth pairs of thoracic legs and in the proportional lengths of the abdominal segments.

Habitat.—Scotia Bay, South Orkneys, June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Fam. Lichomolgidæ.

Genus *Lichomolgus*, Thorell, 1859.

Lichomolgus fucicola, G. S. Brady. (Pl. XII. figs. 23–26.)

1872, *Macrocheiron fucicolum*, Brady, *Nat. Hist. Trans. Northumb. and Durham*, vol. iv. p. 434, pl. xviii. figs. 9–18.

1880, *Lichomolgus fucicola*, Brady, *Mon. of the Free and Semi-parasitic Copepoda of the British Islands*, vol. iii. p. 41, pl. lxxxv. figs. 1–11.

A few specimens of this species were obtained from some floating seaweed collected by the s.y. *Scotia* in July 1904; Station 539, 33° 53′ N., 32° 27′ W. The roughly serrated margin of the strongly curved claws—terminal claws—with which the female antennæ are armed, seems to be characteristic of this *Lichomolgus* (see fig. 24).

The antennules are composed of seven joints, the third joint being the smallest (fig. 23). The inner branch of the fourth pair of thoracic legs is short and biarticulate, the two joints being subequal, and the end one furnished with two terminal setæ.

The fifth pair are uniarticulate, tolerably elongated, and narrow (fig. 25). Caudal rami about as long as the last abdominal segment.

The distribution of *Lichomolgus fucicola* appears to be extensive. It has been recorded from several British localities, usually from the laminarian zone, where it lives apparently about the roots and among the fronds of the seaweeds, such as *Laminaria*. This is one of the more easily identified members of the genus.

Genus *Pseudanthessius*, Claus, 1889.

Pseudanthessius fucicolus, new species. (Pl. XII. figs. 1–13.)

Description of the Female.—In its general appearance, the female of this species resembles *Lichomolgus hirsutipes* from the Firth of Forth, and, but for the difference in the structure of the fourth pair of swimming feet, it might be referred to that genus.

The antennules, which are composed of seven joints, have the second one rather longer than the others, while the third is the smallest; the next four joints gradually

decrease in length, as indicated by the formula, which shows approximately the proportional lengths of all the joints:

Proportional lengths of the joints	11	21	7	15	11	10	9
Numbers of the joints	1	2	3	4	5	6	7

The second joint bears three small teeth on its upper edge, as shown in the drawing (fig. 2).

Antennæ moderately stout, and armed with an elongated and slightly curved terminal spine and a few moderately long setæ.

Mandibles and maxillæ somewhat resembling those of the *Lichomolgus* mentioned above.

The first maxillipeds are also somewhat similar to those of the same species.

The second maxillipeds are each composed of two joints of nearly equal length; the second joint is narrow at the proximal end, but increases in width towards the distal extremity, which is obliquely truncated; the external part of the truncated end appears to be slightly hollow, and armed with four short spines, while the inner angle is produced into a stout spiniform tooth (fig. 6).

The first and second pairs of swimming feet are somewhat similar to those of other species of the Lichomolgidæ. In the third pair, the end joint of the outer ramus carries five dagger-shaped spines round the outer margin and apex, and five setæ on the inner margin. A dagger-shaped spine also springs from the outer distal angles of the first and second joints, while the second has also a seta on its inner edge. The inner ramus has the end joint furnished with three dagger-shaped spines and two setæ, while the second joint bears two setæ and the first one seta on the inner margin, as shown in the drawing (fig. 9).

In the fourth pair, the inner ramus is uniarticulate, rather longer than the first joint of the outer ramus, and carries two setæ at the apex; there is also a small but distinct tooth near the middle of the inner margin (fig. 10).

The fifth pair consist each of a single, elongated, narrow joint which bears two setæ at its distal end.

Abdomen narrow, elongated, the penultimate segment rather shorter than that on either side. Caudal rami short, about equal in length to the last abdominal segment (fig. 12).

The male differs from the female in being provided with larger second maxillipeds, which are each armed with a moderately long and slender terminal claw; the end joint is also fringed with minute bristles, as shown in the drawing (fig. 7). The genital segment of the abdomen is also considerably enlarged (fig. 13). The length of the female is fully one millimetre, but the male is rather smaller.

Habitat.—Obtained from Gulf-weed collected by the *Scotia* in June and July 1904, between Stations 499 and 553, St Helena, 15° 57′ S., 5° 40′ W., to Tuskar Rock, 51° 13′ N., 7° 20′ W.

Fam. Asterocheridæ.

Genus *Asterocheres*, Boeck, 1859.

Asterocheres suberites, Giesbrecht, var. *antarctica*, nov. var. (Pl. VI. figs. 3–11.)

Like *Asterocheres suberites*, Giesbrecht, in general appearance. Length, ·94 mm.

Antennules composed of twenty-one joints, moderately elongated and slender; first joint stouter and longer than any of the others, the second to the eleventh very short, especially the last two; each joint is also somewhat narrower than the one that precedes it; the twelfth to the eighteenth are of moderate length and subequal, the three end joints rather small, but the penultimate one is somewhat longer than either of the other two. The formula shows approximately the proportional lengths of the various joints:

Number of the joints	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Proportional lengths of joints	21	4	3	3	3	3	3	3	2	3		5	7	7	7	8	9	9	4	5	4

Antennæ moderately slender and armed with a long claw-like spine; the first and fourth joints short, the second and third elongated; outer ramus small, uniarticulated, and bearing two or three short terminal bristles (fig. 3).

Siphon short, somewhat triangular; mandibles styliform; maxillæ and maxillipeds nearly as in *A. suberites*, Giesbrecht.

The four pairs of swimming legs also resemble those of the species named. The fifth pair are very small and uniarticulate. The caudal furca are rather longer than the last segment of the abdomen, and about equal to the length of the penultimate segment (fig. 11).

Habitat.—Scotia Bay, South Orkneys, June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Remarks.—The species recorded above so closely resembles *Asterocheres suberites*, Giesbrecht, as to be scarcely separable from it. There is a slight difference in the form of the siphon; the outer marginal spines of the exopods of some of the swimming feet are stouter, and the fifth pair of feet are distinctly smaller. One or two other slight differences may be observed, as, for example, in the proportional lengths of the joints of the antennules, and of the abdominal segments, but this Antarctic form can scarcely be regarded as more than a variety of *A. suberites*.

Fam. Artotrogidæ.

Genus *Artotrogus*, Boeck, 1859.

Artotrogus proximus, new species. (Pl. XI. figs. 1–9.)

Description of the Female.—The outline of the female, seen from above, is suborbicular; the cephalothoracic segment is greatly expanded, and forms the largest portion of the animal; the remaining thoracic segments are comparatively small; the abdomen is also small, but the genital segment of the abdomen is larger than the other segments, and is produced backwards on each side so as partly to enclose them, as

shown in the drawing (fig. 1); the length of the specimen represented by this drawing is 2 mm. The siphon is short and subtriangular, and the mandibles are elongated and slightly dentated on the inner edge near the apex (fig. 4).

The antennules are composed of nine joints; the second joint is small, but the first and third are elongated; these three joints are together about half the entire length of the antennule; the next four joints are small, while the end one is about as long as the preceding two joints combined; a moderately long sensory filament springs from near the extremity of the end joint (fig. 2). The antennæ are composed of three joints; the first is elongated, and bears a small secondary branch; the other two are shorter, and the end one is furnished with a long, slender appendage, slightly hooked at the apex (fig. 3).

The mandibles and maxillæ are somewhat similar to the same organs in *Artotrogus orbicularis*, Boeck.

The first and second maxillipeds and the first three pairs of swimming feet are also similar to those of the species mentioned. In the fourth pair of thoracic legs, the inner ramus is more slender and rather shorter than the outer, and the end joint is provided with a single plumose seta on the inner margin; the same joint is furnished with two apical setæ, which are also plumose, and there is a minute bristle on the outer margin (fig. 8).

The fifth pair are small, uniarticulate, and furnished with two terminal setæ of unequal length (fig. 9).

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Two specimens occurred in a small sample of siftings from trawled material. The species approaches so near to *Artotrogus orbicularis*, Boeck, both in its general form and in the structure of its appendages, that there was at first some doubt as to whether it should be regarded as a distinct species. A careful examination, however, reveals certain differences, which it may be as well meanwhile to recognise, as, for example, the difference in the armature, and to some extent also in the structure of the antennæ; the difference in the form of the siphon; the rather more slender maxillipeds; the difference in the form of the fifth pair of thoracic legs and in the structure of the abdomen. These differences, while in themselves inconsiderable, are, I think, when taken together, sufficiently important to warrant the separation of this Antarctic *Artotrogus* under a distinct name.

Fam. Sapphirinidæ.

Genus *Sapphirina*, J. V. Thompson, 1829.

Sapphirina ovatolanceolata, Dana.

1849, *Sapphirina ovatolanceolata*, Dana, *Proc. Amer. Acad.*, Boston, vol. ii. pp. 8–16.

The only gatherings in which this *Sapphirina* was observed were collected at Stations 14, 32, 36, and 49, 21° 28′ N., 22° 40′ W., to 1° 53′ N., 27° 26′ W., and at Station 60, 3° 25′ S., 33° 13′ W., and Station 105, 38° 45′ S., 53° 30′ W. Only a few specimens were noticed.

Sapphirina gemma, Dana.

1849, *Sapphirina gemma*, Dana, *op. cit.*, vol. ii. pp. 8–61.

This species occurred in gatherings from two stations widely separated from each other, viz., Station 15, 20° 34′ N., 23° 12′ W., and Station 104, 37° 05′ S., 52° 22′ W.

Sapphirina iris, Dana.

1849, *Sapphirina iris*, Dana, *op. cit.*, vol. ii. pp. 8–61.
1863, „ *salpæ*, Claus, *Die freilebenden Copepoden*, p. 152.

The gatherings in which this species was met with were collected at Stations 26, 49, 72, 98, 102, 104, and 105, 14° 33′ N., 25° 09′ W., to 38° 45′ S., 53° 30′ W.; it occurred only sparingly.

Sapphirina angusta, Dana.

1849, *Sapphirina angusta*, Dana, *op. cit.*, vol. ii. pp. 8–61.

This rather distinct *Sapphirina* was obtained in gatherings from Stations 35, 36, 98, 102, 104, and 105, 9° 5′ N., 25° 28′ W., to 38° 45′ S., 53° 30′ W.

Sapphirina lactens, Giesbrecht.

1893, *Sapphirina lactens*, Giesb., *Fauna u. Flora des Golfes von Neapel*, Monogr. xix., "Pelag. Copep.," p. 619, pl. lii. figs. 15, 16, 30 *et seq.*

The only gathering in which this species was met with was from Station 104 in 37° 05′ S., 52° 22′ W.

Sapphirina vorax, Giesbrecht.

1891, *Sapphirina vorax*, Giesb., *Atti Accad. Lincei*, Roma (4), Rend., vol. vii. See also *Fauna u. Flora des Golfes von Neapel* (1893), p. 619, pl. lii. figs. 23, 28 *et seq.*

This species occurred very sparingly in three gatherings collected at Stations 12, 13, and 104, 22° 19′ N., 22° 07′ W., to 37° 05′ S., 52° 22′ W.

Sapphirina auronitens, Claus.

1863, *Sapphirina auronitens*, Claus, *op. cit.*, p. 153.

This also occurred very sparingly in gatherings from three stations, viz., from Stations 12, 13, and 44, 22° 19′ N., 22° 07′ W., to 3° 42′ N., 26° 26′ W.

Sapphirina nigromaculata, Claus.

1863, *Sapphirina nigromaculata*, Claus, *op. cit.*, p. 152, pl. viii.

The gatherings in which this species was observed were collected at Stations 12, 29, and 85, 22° 19′ N., 22° 07′ W., to 23° 8′ S., 39° 40′ W.

Sapphirina intestinata, Giesbrecht.

1891, *Sapphirina intestinata*, Giesb., *op. cit.* (4), Rend., vol. vii. p. 478.

This species was collected at Stations 26, 44, and 90, 14° 33′ N., 25° 09′ W., to 26° 50′ S., 42° 20′ W., and was apparently not very common.

Sapphirina opalina, Dana.

1849, *Sapphirina opalina*, Dana, *Proc. Amer. Acad.*, Boston, vol. ii. pp. 8–61.

The only gathering in which this species was obtained was from Station 59, 2° 30′ S., 32° 42′ W.

Sapphirina gastrica, Giesbrecht.

1891, *Sapphirina gastrica*, Giesb., *op. cit.* (4), Rend., vol. vii. p. 478.

This species was collected at Stations 7, 8, and 12, 26° 23′ N., 20° 20′ W., to 22° 19′ N., 22′ 07° W., but only a few specimens were observed.

Sapphirina stellata, Giesbrecht.

1891, *Sapphirina stellata*, Giesb., *op. cit.* (4), Rend., vol. vii. p. 478.

This *Sapphirina* was obtained in a gathering collected at Station 28, 13° 07′ N., 25° 09′ W.

Sapphirina darwinii, Haeckel.

1864, *Sapphirina darwinii*, Haeckel, *Zeitschr. med. Naturw.* (Jena), 1 Bd. p. 105, pls. ii. and iii.

The only gathering in which this species was observed was that from Station 68A in the South Atlantic—Pernambuco bearing 12 miles W., 8° 00′ S., 34° 34′ W.

Genus *Saphirella*, T. Scott, 1894.

Saphirella abyssicola, T. Scott. (Pl. IV. figs. 2–4.)

1894, *Saphirella abyssicola*, Scott, *Trans. Linn. Soc.* (2, "Zool."), vol. vi. p. 126, pl. xiii. figs. 57, 58, pl. xiv. figs. 5–10.

This species, which appeared to be of rare occurrence in the *Scotia* collections, was obtained in a gathering from Station 68A—Pernambuco bearing 12 miles W., 8° 00′ S., 34° 34′ W.

Genus *Copilia*, Dana, 1849.

Copilia mirabilis, Dana.

1852, *Copilia mirabilis*, Dana, *U.S. Explor. Exped.*, 1838–1842 ("Crust."), vol. xiii p. 1232, pl. lxxxvi.

This species was observed in gatherings from the following twelve stations: 12, 14, 18, 22, 25, 26, 27, 29, 33, 35, 36 and 85, 22° 19′ N., 22° 07′ W., to 23° 8′ S., 39° 40′ W.

Copilia denticulata, Claus.

1863, *Copilia denticulata*, Claus, *Die freilebenden Copepoden*, p. 161, Taf. 25, figs. 14–20.

This species was only met with in a gathering from Station 36, 8° 42′ N., 25° 28′ W.

Fam. Oncæidæ.

Genus *Oncæa*, Philippi, 1853.

Oncæa venusta, Philippi.

1843, *Oncæa venusta*, Phil., *Wiegman's Archiv für Naturgesch.* (1843), p. 62, pl. iii. fig. 3.

This species was observed in gatherings from Stations 18, 25, 36, 49, 56, and 62, 19° 59′ N., 23° 34′ W., to 4° 15′ S., 33° 38′ W.

Oncæa mediterranea, Claus, var.

1863, *Antaria mediterranea*, Claus, *Die freilebenden Copepoden*, p. 159, Taf. 30.

The only gatherings in which this form occurred were from three stations in the South Atlantic, viz., 55, 64, and 93, 0° 22′ S., 31° 00′ W., to 30° 5′ S., 45° 28′ W.

Oncæa conifera, Giesbrecht.

1891, *Oncæa conifera*, Giesb., *Atti Accad. Lincei*, Roma (4), vol. vii. p. 8.

This species, which appeared to be of more frequent occurrence than the two just referred to, was observed in gatherings from Stations 14, 18, 19, 26, 29, 32, and 33, 21° 28′ N., 22° 40′ W., to 9° 40′ N., 25° 28′ W., in the North Atlantic, and at Stations 56, 59, 62, and 90 in the South Atlantic, 0° 42′ S., 31° 20′ W., to 26° 50′ S., 42° 20′ W.

Fam. Corycæidæ.

Genus *Corycæus*, Dana, 1845.

Corycæus venustus, Dana.

1849, *Corycæus venustus*, Dana, *Proc. Amer. Acad.*, Boston, vol. ii. p. 8.

This *Corycæus* occurred sparingly in gatherings from three stations in the South Atlantic, viz., 90, 93, and 95, 26° 50′ S., 42° 20′ W., to 32° 15′ S., 47° 30′ W.

Corycæus ovalis, Claus.

1863, *Corycæus ovalis*, Claus, *Die freilebenden Copepoden*, p. 158.

The only gathering in which this species was obtained was from Station 44, 3° 42′ N., 26° 26′ W.

Corycæus obtusus, Dana.

1852, *Corycæus obtusus*, Dana, *Crust. U.S. Expl. Exped.*, p. 1214, pl. lxxxv. fig. 6.

With the exception of *Corycæus speciosus* this appeared to be the most commonly distributed member of the genus in the *Scotia* collection. It was observed in gatherings from about twenty-seven stations, ranging from Stations 13, 15, and 19, North Atlantic, 21° 58′ N., 22° 26′ W., to 19° 12′ N., 24° 08′ W., to 85, 90, and 95, South Atlantic, 23° 8′ S., 39° 40′ W., to 32° 15′ S., 47° 30′ W., but it was nowhere very plentiful.

Corycæus flaccus, Giesbrecht.

1891, *Corycæus flaccus*, Giesb., *Atti Accad. Lincei*, Roma (4), vol. vii. p. 480.

This tolerably distinct species was met with, though somewhat sparingly, in gatherings collected at Stations 7, 12, 15, 22, 85, and 86, 26° 23′ N., 20° 20′ W., to 24° 26′ S., 40° 25′ W.

Corycæus rostratus, Claus.

1863, *Corycæus rostratus*, Claus, *op. cit.*, p. 480.

The only gatherings in which this *Corycæus* was obtained were collected at Station 26, 14° 33′ N., 25° 9′ W., and Station 95, 32° 15′ S., 47° 30′ W., the one in the North, and the other in the South Atlantic.

Corycæus speciosus, Dana.

1849, *Corycæus speciosus*, Dana, *Proc. Amer. Acad.*, Boston, vol. ii. pp. 8–61.

This fine species was of frequent occurrence in the *Scotia's* tow-net collections; the remarkably divergent caudal rami made it easily recognised. It was observed in gatherings from thirty-six different stations, ranging from Stations 7 and 12 in the North Atlantic to Stations 93 and 95 in the South, 26° 23′ N., 20° 20′ W., to 32° 15′ S., 47° 30′ W.

Corycæus longistylis, Dana.

1849, *Corycæus longistylis*, Dana, *op. cit.*, vol. ii. pp. 8–61.

This species occurred sparingly in gatherings from Stations 7, 11, 12, 13, and 14, 26° 23′ N., 20° 20′ W., to 21° 28′ N., 22° 40′ W.

Corycæus carinatus, Giesbrecht.

1891, *Corycæus carinatus*, Giesb., *op. cit.* (4), vol. vii. p. 481.

This *Corycæus* was observed in gatherings from twenty-five different stations, extending from Stations 11, 13, and 15 to 88, 90, and 94, 23° 50′ N., 21° 34′ W., to 30° 25′ S., 45° 45′ W. The species was apparently more or less uniformly distributed throughout the area traversed by the *Scotia* between the limits stated.

Corycæus longicaudis, Dana.

1849, *Corycæus longicaudis*, Dana, *op. cit.*, vol. ii. pp. 8–61.

The distribution of this species appeared to be somewhat limited; the only gatherings in which it was met with were those collected at Stations 25, 27, 29, 30, and 31, 15° 15′ N., 25° 09′ W., to 11° 10′ N., 25° 20′ W.

Corycæus elongatus, Claus.

1863, *Corycæus elongatus*, Claus, *Die freilebenden Copepoden*, p. 157, pl. xxiv. figs. 3 and 4.

This species occurred very sparingly at Station 11, 23° 50′ N., 21° 34′ W., and Station 85, 23° 8′ S., 39° 40′ W.

Tribe *CALIGOIDA*.

Genus *Dysgamus*, Steenstrup & Lütken, 1861.

Dysgamus atlanticus, Steenstrup & Lütken. (Pl. XIII. fig. 13.)

1861, *Dysgamus atlanticus*, Steenstrup & Lütken, *Bidrag til Kundskab om det aabne Havs Snyltekreb og Lernæer*, p. 368, Tab. iv. fig. 8.

Only the males of *Dysgamus* have apparently been observed hitherto, and it is doubtful if the genus can be considered a valid one till females are obtained.

The specimens on which the genus was founded were taken, probably while

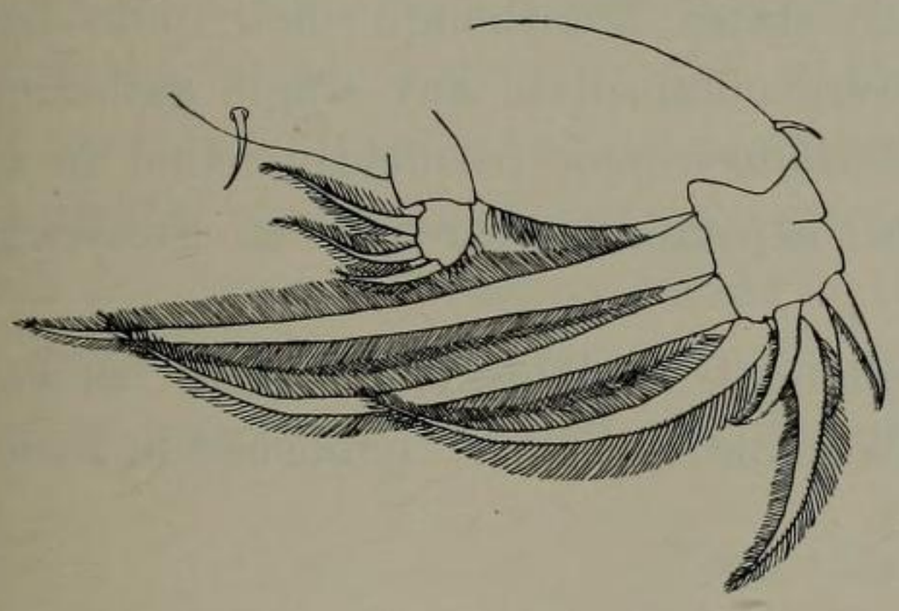


FIG. 1.—Foot of first pair.

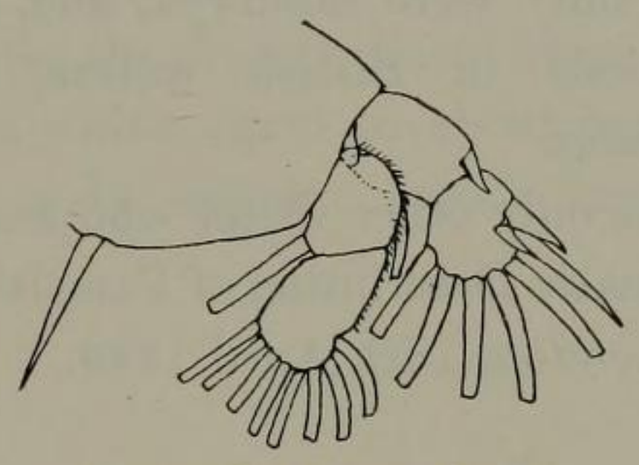


FIG. 2.—Foot of second pair.

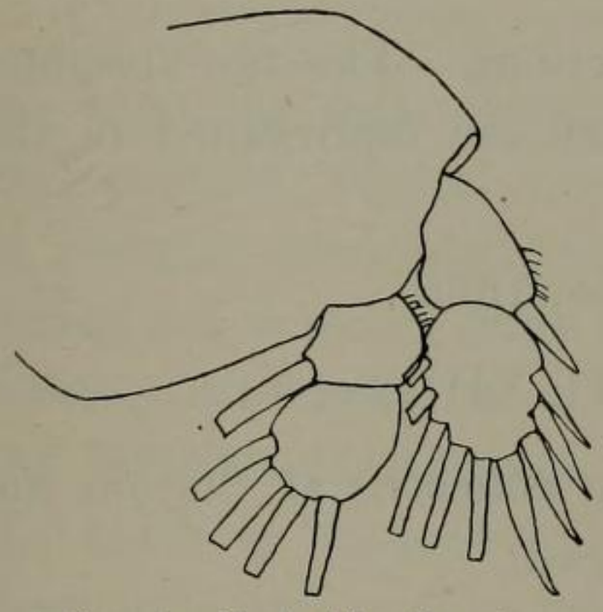


FIG. 3.—Foot of fourth pair.

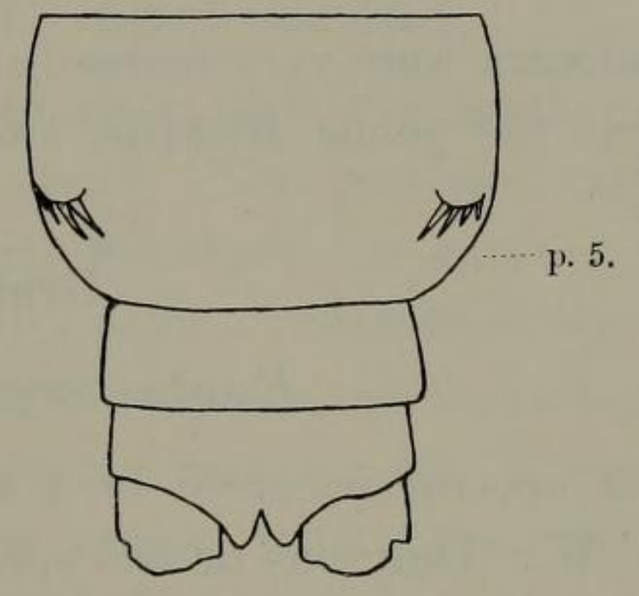


FIG. 4.—Abdomen and fifth pair of feet.

Dysgamus atlanticus, Steenstrup & Lütken.

swimming freely at the surface, at several places in the North Atlantic, between lat. 8° and 28° N., and long. 21° and 36° W.

This species has a close resemblance to *Caligus* in its general form and colour; the frontal plates are, however, without lunules or sucker-disks. The carapace is broadly ovate and depressed, but the last two thoracic as well as the abdominal segments are short and comparatively narrow. The first four pairs of thoracic legs are all two-branched, and the branches two-jointed; the first pair has the inner branch very small, but in the other three pairs the branches are subequal; there is, as in *Caligus*, a fifth pair, very minute but quite distinct (see text-figures annexed). The eyes, though visible, are not very conspicuous. The *Scotia* specimens were collected in the Atlantic at the

following stations: 25, 31, 44, 79, 82, 83, and 98. The first two stations are north of the equator, viz., 15° 15′ N., 25° 09′ W., and 11° 10′ N., 25° 20′ W. The other stations are south of the equator, Station 98 being in 34° 02′ S., 49° 07′ W. The *Scotia* specimens differ somewhat from the drawings given by Steenstrup & Lütken in the work referred to, in having the abdominal portion rather stouter and shorter, but they agree so well otherwise that I have little hesitation in ascribing them to their species. Charles Branch Wilson, in his work on "American Copepoda parasitic on Fishes," * describes a *Dysgamus*, of which he obtained a single specimen, and his drawings show it to be not unlike the specimens collected by the *Scotia;* this *Dysgamus* he ascribes to a new species, *Dysgamus ariommus*, and speaks of the fifth legs as being entirely lacking, whereas in the *Scotia* specimens the fifth pair, as already stated, are, though small, quite distinct.

Only one, or at most two, specimens were obtained in any single gathering, and males only were observed, and, like the *Caligus ropax* frequently found in tow-net collections in British waters, they were captured apparently as free-swimming organisms.

The only other writer who records *Dysgamus* is Dr Bassett-Smith in his work "A Systematic Description of Parasitic Copepoda found on Fishes," published in *Proc. Zool. Soc. London*, 18th April 1889.

CLADOCERA AND OSTRACODA.

Cladocera were very scarce in the *Scotia* collections. The few specimens observed belong to the genus *Evadne*, two species of which are represented in the collection, viz. :—

Genus *Evadne*, Lovén, 1836.

Evadne tergestina, Claus. (Pl. XIII. fig. 14.)

This species occurred in a tow-net gathering collected at Station 85, 23° 8′ S., 39° 40′ W. Only one or two specimens were noticed.

Evadne spinifera, P. E. Müller. (Pl. XIII. fig. 15.)

E. spinifera was also obtained in the gathering from Station 85, 23° 8′ S., 39° 40′ W, and was equally scarce with the species previously mentioned.

OSTRACODA.

The Ostracoda observed in the *Scotia* collections belong chiefly to the two groups Podocopa and Myodocopa, and include representatives of the families Cypridæ, Cytheridæ, Cypridinidæ, and Conchœciadæ.

* "North American Parasitic Copepods belonging to the Family Caligidæ: Part II. The Trebinæ and Euryphorinæ," *Proc. U.S.A. National Museum*, vol. xxxi. p. 713, pl. xx. figs. 62–70.

PODOCOPA.

Fam. Cypridæ.

Genus *Macrocypris*, G. S. Brady, 1868.

Macrocypris maculata, G. S. Brady. (Pl. XIV. figs. 1 and 2.)

1865, *Cytherideis maculata*, Brady, *Trans. Zool. Soc.*, vol. v. p. 367, pl. lvii. fig. 12, *a–b*.
1880, *Macrocypris maculata*, Brady, *Ostracoda of the "Challenger" Exped.*, p. 44, pl. i. fig. 2, *a–d*.

Habitat.—Scotia Bay, South Orkneys; collected April 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. Several specimens were obtained; they varied somewhat in size. One of the larger specimens measures 1·5 mm. in length; height rather less than half the length, highest in the middle; dorsal margin arcuate, sloping about equally towards both ends, but the posterior is rather narrower than the other; lower margin slightly concave and sinuate, especially towards the front. Seen from above, the shell is elliptical in outline, widest in the middle, width equal to about one-third of the length, tapering equally to each end; both ends narrow; colour brownish. This species appears to be widely distributed.

Fam. Cytheridæ.

Genus *Cythere*, O. F. Müller, 1785.

Cythere inornata, new species. (Pl. XIV. figs. 9 and 10.)

Shell, seen from the side, oblong; height equal to about half the length; dorsal margin nearly straight, ventral margin slightly incurved. The posterior extremity slopes at first abruptly downwards, then becomes boldly rounded; the anterior end is somewhat similar, but is rather more produced, especially below. Seen from above, the shell is moderately tumid, widest in the middle, greatest width equal to rather more than half the length, sides evenly rounded, but tapering rather more towards the anterior end, which is wedge-shaped. Shell surface rough, with numerous small circular pits and setiferous papillæ between. Length of shell about 1·2 mm.

Habitat.—Scotia Bay, South Orkneys, June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Cythere quadridens, new species. (Pl. XIV. figs. 15 and 16.)

Shell, seen from the side, oblong, highest in front, the height equal to rather more than half the length; anterior end boldly rounded; posterior extremity truncated above, slightly produced below the middle, and provided with about four more or less distinct tooth-like projections. The dorsal margin shows a slight elevation immediately over the anterior hinge, thence it slopes backwards to the posterior extremity in a nearly straight line, where it is abruptly angulated; lower margin slightly excavated behind the anterior extremity, and thence converges gently backwards. Seen from above, the shell is widest behind the middle, greatest width scarcely equal to half the

length; the margins taper gently towards the bluntly rounded anterior end, but behind they converge somewhat abruptly, the posterior extremity being slightly produced and expanded; the dorsal margin also shows a slight foliation. The general surface of the shell is sculptured with numerous small rounded pits. Length of the shell about ·85 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Cythere latibrosa, new species. (Pl. XIV. figs. 3 and 4.)

This form, seen from the side, is somewhat similar in its general outline to that described above, but differs in the following particulars: it is higher in front in proportion to the length, the dorsal slope is rather greater, and the shell sculpture is rather different. Seen from above, the shell is somewhat tumid, the outline very irregularly hastate, greatest width equal to about half the length; lateral margins incurved in the middle, converging gently in front, and abruptly behind; both extremities somewhat truncated, the posterior end rather more so than the other, and with two or three tooth-like projections. Surface of the shell sculptured with numerous irregular and angular excavations. Length, ·74 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

This species has a somewhat close resemblance to *Cythere wyville-thompsoni*, G. S. Brady, but the anterior serrations observed in that species are wanting in this, and the armature of the posterior end also differs.

Cythere foveolata, G. S. Brady. (Pl. XIV. figs. 7 and 8 (♂), and figs. 13 and 14 (♀).)

1880, *Cythere foveolata*, Brady, *Ostracoda of the "Challenger" Exped.*, p. 75, pl. xiii. 5, *e–h*.

Shell of the female tumid; seen from the side, subrhomboidal, highest in the middle, greatest height rather more than half the length; both ends obliquely rounded; dorsal margin gently rounded in the middle part, then sloping somewhat steeply towards each end, but more distinctly so in front; ventral margin slightly sinuate in front, and curving upwards behind. Seen from above, the shell is broadly ovate, widest in the middle, greatest width equal to about half the length; sides slightly arcuate in the middle, converging rapidly to the pointed anterior extremity, but abruptly rounded behind. Shell surface marked all over with closely set and conspicuous excavations, and with the hinge line somewhat prominent. The outline of the male is more compressed and angular. Length, female ·77 mm.; male ·74 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

The *Scotia* specimens differ slightly from those recorded by Dr Brady in being somewhat larger and in the general contour being also slightly different, but notwithstanding these differences, I am inclined to consider them as belonging to Brady's species.

Cythere antarctica, new species. (Pl. XIV. figs. 5 and 6.)

Shell, seen from the side, elongated, highest over the posterior hinge, greatest height equal to rather more than half the length; the dorsal margin slopes steeply backwards from the highest point, and more gently towards the front, and with a shallow notch near the anterior extremity; posterior end boldly rounded and somewhat produced below; anterior end truncated above, rounded below, with a small subcentral projection separating the upper from the lower portion; ventral margin incurved and sinuous. The shell, seen from above, widest in front, the greatest width equal to rather less than half the length; sides not very boldly rounded, converging gently backwards to the sharp-pointed posterior end; anterior extremity blunt and slightly produced. Shell surface thickly covered with minute circular pits. Length, ·7 mm.

Habitat.—Scotia Bay, South Orkney Islands; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Cythere peregrina, new species. (Pl. XIV. figs. 11 and 12.)

Shell, seen from the side, oblong, highest behind the middle, greatest height scarcely equal to half the length; dorsal margin sloping gently from behind the middle in a nearly straight line towards the front, but the hinder slope is shorter and steeper; both ends evenly and not very boldly rounded; ventral margin slightly and evenly convex. Shell tumid when seen from above, widest in the middle, width equal to half the length; sides rather boldly arcuate and converging towards both ends; both extremities acuminate. Shell covered with numerous and extremely fine lines extending longitudinally over its surface. Length about ·75 mm., but varies to some extent; one or two rather larger specimens reach to about 1 mm. in length.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Genus *Xestoleberis*, G. O. Sars, 1865.

Xestoleberis reniformis, G. S. Brady. (Pl. XIV. figs. 17 and 18.)

1907, *Xestoleberis reniformis*, Brady, *National Antarctic Exped.: Natural History*, vols. iii.–v., "Ostracoda," p. 6, pl. i. figs. 4, 5.

A few specimens—adult and (?) young—of a *Xestoleberis* occurred among other Ostracoda collected in Scotia Bay, South Orkneys; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. They so closely resemble the form described by Dr Brady in his paper on the "Ostracoda of the English National Antarctic Expedition" that I ascribe them to the same species. They differ a little from the description and figures given by Brady, but the peculiar outline of the shell, both when seen from the side and from above, seems to be characteristic of the species. Length of specimen represented by the drawings, ·62 mm.

Genus *Cytherura*, G. O. Sars, 1865.

Cytherura ornata, new species. (Pl. XIV. figs. 19–21.)

Carapace moderately tumid; seen from the side, subrhomboidal, highest in front of the middle, greatest height equal to rather more than half the length; dorsal margin well rounded, sloping more steeply in front than behind; ventral margin flexuous; anterior margin broadly rounded, obscurely crenulate; posterior extremity somewhat produced in the middle to a blunt angular point. Seen from above, the sides are evenly and not very strongly convex, widest in the middle, greatest width equal to half the length; anterior extremity somewhat acuminate, posterior end forming a short angular projection. Surface of the shell ornamented with minute excavations and lines, as shown in the drawing (fig. 19). Length, ·54 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Cytherura porrecta, new species. (Pl. XIV. figs. 22 and 23.)

Carapace elongated; seen from the side, oblong, about equal in height at both ends, greatest height less than half the length; dorsal and ventral margins sinuous; anterior end boldly and evenly rounded; posterior extremity produced in the middle line into a prominent subtriangular and blunt-pointed beak; a sinuous and moderately conspicuous longitudinal fold extends backwards along the middle line, then curves round to meet the ventral margin. Seen from above, shell outline sagittate, widest in front of the middle, width rather less than half the length; sides sinuate, abruptly rounded behind, converging in front; anterior end acuminate; posterior extremity produced into a prominent beak. Shell surface covered with numerous small and rounded excavations. Length, ·45 mm.

Habitat.—This small form was obtained in the same gatherings from *Scotia* with those described above; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Cytherura sculptilis, new species. (Pl. XIV. figs. 24 and 25.)

Shell somewhat like *Cytherura similis*, Brady & Norman; seen from the side, broadly ovate, highest just in front of the middle, height equal to more than half the length; dorsal margin strongly arched, sloping towards the anterior end; anterior slope flattened; posterior slope evenly rounded and terminating in the posterior angulation; ventral margin arcuate behind, flexuous in front; anterior extremity bluntly rounded, the margin obscurely crenulated; posterior extremity produced and somewhat acuminate below the middle, lower edge sloping backwards in a curved line continuous with the ventral margin. Shell, seen from above, broadly elliptical, widest in the middle, width rather less than half the length; sides evenly rounded, converging more gradually behind than in front; both extremities somewhat acuminate. Shell surface

ornamented with fine but irregular reticulations, and with the interspaces minutely punctate; there are also small whitish papillæ where the lines intersect. Length of the specimen represented by the drawing, ·5 mm., but another specimen measured only ·53 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Genus *Paradoxostoma*, Fischer, 1855.

Paradoxostoma retusum, G. S. Brady. (Pl. XIV. fig. 26.)

1890, *Paradoxostoma retusum*, Brady, *Trans. Roy. Soc. Edin.*, vol. xxxv. p. 513, pl. iv. fig. 20.

Shell, seen from the side, oblong, narrower in front than behind, highest behind the middle; height rather less than half the length; dorsal margin moderately convex, evenly rounded except near the posterior extremity, where it becomes slightly flexuous; anterior end narrow, evenly rounded; posterior extremity produced above the middle into a bluntly rounded beak, thence, sloping downwards and forwards in a nearly straight line, it merges into and becomes continuous with the sinuated ventral margin. Seen from above, compressed, widest in the middle, about four times longer than wide; sides evenly rounded, the front end somewhat obtuse, the posterior extremity acuminate. Shell smooth, semitransparent, with a few faint impressed lines at the posterior end (fig. 26). Length, ·78 mm.

Habitat.—Scotia Bay, South Orkneys; collected June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

The *Scotia* specimens differ slightly from the form described by Dr Brady in their larger size, as well as to a small extent in their general outline; the peculiar conformation of the posterior extremity is, however, quite characteristic of the species referred to.

Paradoxostoma antarcticum, new species. (Pl. XIV. figs. 27 and 28.)

Carapace ovate; seen from the side, highest behind the middle, height scarcely equal to half the length; dorsal margin boldly arched, forming a continuous even curve backwards to the blunt angulation of the posterior extremity, but with a longer slope to the front than to the rear; anterior end narrow and rounded; posterior obliquely truncated, slightly produced above, thence sloping downwards and forwards to meet the ventral margin, which is slightly convex. Shell, seen from above, compressed, fusiform, widest behind the middle, fully three times longer than broad; extremities equal and acuminate. Surface of shell smooth, with small, round, indistinct markings scattered over it. Length, ·8 mm.

Habitat.—Scotia Bay, South Orkneys; collected in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

Paradoxostoma læve, new species. (Pl. XIV. figs. 29 and 30.)

Shell, seen from the side, elongate, subovate, higher behind than in front, greatest height just behind the middle, and equal to fully two-fifths of the length; anterior extremity subangular, narrowly rounded; greatest projection below the middle; posterior end obtusely rounded, dorsal margin evenly but not very boldly arcuate, sloping gradually towards the front and more convex behind; ventral margin slightly sinuate in front of the middle. Seen from above, the outline is narrowly ovate, the greatest width, which is near the centre, is equal to about one-third of the length; the sides are flatly arcuate, and both extremities subacuminate; valves smooth, polished, with a few scattered opaque white points. Length about ·65 mm.

Habitat.—Obtained in the same gatherings with those described above, collected in Scotia Bay, South Orkney Islands, in June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W.

MYODOCOPA.

Fam. Cypridinidæ.

Genus *Philomedes*, Liljeborg, 1853.

Philomedes assimilis, G. S. Brady. (Pl. XIII. figs. 16 and 17.)

1907, *Philomedes assimilis*, Brady, *National Antarctic Exped.*: "Ostracoda," p. 5, pl. i. figs. 16–21, pl. ii. figs. 1–6.

One or two specimens of a *Philomedes*, which I ascribe to the species mentioned, occurred in a small sample of dredged material from Scotia Bay, collected in April 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. The length of the specimen represented by the drawing (fig. 16) is 1·8 mm.

Genus *Asterope*, Philippi, 1840.

Asterope australis, G. S. Brady. (Pl. XIII. figs. 18 and 19.)

1890, *Asterope australis*, Brady, *Trans. Roy. Soc. Edin.*, vol. xxxv. (pt. ii.), p. 515, pl. ii. figs. 1, 2.
1898, ,, ,, ,, *Trans. Zool. Soc.*, vol. xiv. (pt. viii.), p. 431, pl. xliii. figs. 1–8.
1906, *Cylindroleberis australis*, G. W. Müller, *Die Ostracoden der "Siboga" Exped.*, p. 14.

This species was obtained in a small gathering of dredged material collected in Scotia Bay, South Orkneys, on 3rd June 1903; Station 325, 60° 43′ 42″ S., 44° 38′ 33″ W. The length of the specimen—a female—represented by drawing (fig. 18) is 2·75 mm.

Asterope oculata, G. S. Brady. (Pl. XIII. figs. 20 and 21.)

1902, *Asterope oculata*, Brady, *Trans. Zool. Soc.*, vol. xvi. p. 179, pl. xxi. figs. 6–13.

This species occurred in a small gathering collected off Gough Island on 22nd April 1904; Station 461, 40° 20′ S., 9° 56′ 30″ W. The size of the specimen represented by the drawing (fig. 20) is 1·8 mm. Dr Brady records *A. oculata* from Trincomalee, Ceylon.

Fam. Halocypridæ.

The Halocypridæ being for the most part pelagic in their habits, are widely dispersed throughout the Atlantic, Pacific, and Indian Oceans, but appear to be more frequent in tropical regions. The species recorded here are chiefly from these regions, and were collected by the s.y. *Scotia* on the outward voyage to the Antarctic; no Halocypridæ were observed in the collections from the South Orkneys.

Genus *Halocypris*, Dana, 1852.

Halocypris inflata, Dana. (Pl. XIII. figs. 29–31.)

1852, *Halocypris inflata*, Dana, *U.S. Explor. Exped.*, 1837–1842, vol. xiii. p. 1301, pl. xci. fig. 8.
1852, ,, *brevirostris*, Dana, *op. cit.*, p. 1303, pl. xci. fig. 9.
1906, ,, *inflata*, G. W. Müller, "Ostracoda," "*Siboga*" *Exped.*, p. 2.

This species was obtained in gatherings from Stations 21, 26, and 59, the first in 18° 28′ N., 24° 28′ W., the last in 2° 30′ S., 32° 42′ W. The specimen represented by the drawing measures 1·65 mm. The species is widely distributed in the Atlantic, the Pacific, and Indian Oceans, and appears to be subject to some amount of variation, and has been described under several names (*cf.* G. W. Müller, *op. cit.*).

Halocypris globosa, Claus. (Pl. XIII. fig. 32.)

1874, *Halocypris globosa*, Claus, "Die Fam. Halocypriden," *Schriften Zool. Inhalt*, Heft i. (Wien, 1874), p. 7, Taf. 3, figs. 36 and 39.
1906, *Halocypris globosa*, G. W. Müller, *op. cit.*, p. 2.

H. globosa was obtained in a gathering from Station 16, 20° 29′ N., 23° 16′ W., collected 29th November 1902. In this species the shell has a short rotund form; seen from the side, the dorsal margin is flattened, but the lower is boldly arched in the form of a semicircle, the depth across the middle being equal to about four-fifths of the length. The specimen represented by the drawing (fig. 32) measured ·85 mm.

Genus *Conchœcia*, Dana, 1852.

Conchœcia spinirostris, Claus. (Pl. XIII. fig. 26.)

1874, *Conchœcia spinirostris*, Claus, "Die Fam. Halocypriden," p. 6, Taf. 1, figs. 1, 6*a*, 8; Taf. 2, figs. 11, 14, 15.
1890, *Conchœcia porrecta*, Claus, *Arbeit. Zool. Institut Wien*, vol. ix., Heft i., p. 12; Heft iii. (1891), p. 61, Taf. 7.
1896, *Conchœcia spinirostris*, Brady & Norman, *Trans. Roy. Dublin Soc.* (N.S.), vol. v. p. 689, pl. lx. fig. 22.
1906, *Conchœcia spinirostris*, G. W. Müller, "Ostracoda," "*Siboga*" *Exped.*, p. 7.

This widely distributed species occurred in surface gatherings from Stations 14, 16, and 59; the first in 21° 28′ N., 22° 40′ W., the last in 2° 30′ S., 32° 42′ W., collected

November and December 1902. According to Dr G. W. Müller, *C. spinirostris*, Claus, and *C. porrecta*, Claus, are forms of the same species.

Conchœcia procera, G. W. Müller. (Pl. XIII. figs. 27 and 28.)

1891, *Conchœcia variabilis* (pr. prt.), G. W. Müller, *Zool. Jahrb.*, Abtheil Syst., vol. v. p. 273, Taf. 28, figs. 27, 38.
1894, *Paraconchœcia oblonga*, Claus, *Denkschriften d. Akad. Wien*, vol. lxi. p. 3, Taf. 3, figs. 21–23 (non *C. oblonga*, Cl., 1890, 91).
1894, *Conchœcia procera*, G. W. Müller, *F. Fl. Neapel*, vol. xxi. p. 228, pl. iii. figs. 47, 48, 50, 58.
1906, „ „ *idem*, "Ostracoda," "*Siboga*" *Exped.*, p. 4.

Specimens which I have ascribed to this species were obtained in a surface tow-netting collected at Station 14, 21° 28′ N., 22° 40′ W., on 28th November 1902. The specimen represented by the drawing measured about 1·5 mm.

Conchœcia elegans, G. O. Sars.

1865, *Conchœcia elegans*, G. O. Sars, *Forhandl. Vidensk.-Selsk. Chr.*, p. 117.
1891, *Paraconchœcia gracilis*, Claus, *Die Halocypriden des atlantischen Oceans und Mittelmeeres*, p. 66, pl. xii.
1896, *Conchœcia elegans*, Brady & Norman, *Trans. Roy. Dublin Soc.* (N.S.), vol. v. p. 684, pl. lx. fig. 23, pl. lxv. figs. 11–22.
1906, *Conchœcia elegans*, G. W. Müller, "Ostracoda," "*Siboga*" *Exped.*, p. 4.

A single specimen of this species occurred in a surface gathering collected at Station 14, 21° 28′ N., 22° 40′ W., 28th November 1902. This species has been found fairly common in Loch Etive, Scotland, and is said to be very abundant among the Lofoten Islands down to 300 fathoms (G. O. Sars), while Dr Claus reports it as having been taken at a depth of 1500 metres in lat. 37° 45′ N., long. 13° 38′ W. *C. elegans* is also a Mediterranean species. Dr G. W. Müller gives its distribution as extending to lat. 35° in the South Atlantic.* *Paraconchœcia gracilis*, Claus, is considered by Dr G. W. Müller to be identical with *C. elegans*, G. O. Sars.

Genus *Euconchœcia*, G. W. Müller, 1890.

Euconchœcia chierchiæ, G. W. Müller. (Pl. XIII. figs. 22–25.)

1890, *Euconchœcia chierchiæ*, G. W. Müller, "Ueber Halocypriden," *Zool. Jahrb.*, Bd. v. p. 227, pl. xxviii. figs. 1–10 (1890).
1894, *Halocypris aculeata*, T. Scott, *Trans. Linn. Soc.: Zool.*, ser. 2, vol. vi. p. 142, pl. xv. figs. 5, 6, 33, 34, 38.
1902, *Euconchœcia chierchiæ*, G. S. Brady, *Trans. Zool. Soc.*, vol. xvi. p. 190, pl. xxiv. figs. 9–15.

A few specimens of this species occurred in a surface gathering collected at Station 49, 1° 53′ N., 27° 26′ W., and at Station 68, 7° 42′ S., 34° 32′ W., off Pernambuco, in December 1902.

* "Sie findet sich weiter im nördlichen und südlichen Atlantischen Ocean bis zu 35° südlicher Breite," *Nordisches Plankton*, vii., "Ostracoda," p. 4 (1901).

ALPHABETICAL INDEX TO GENERA AND SPECIES.

EXPLANATION OF PLATES.

Plate I.

Parathalestris affinis, sp. n.

Fig. 1. Foot of fourth pair.

Cyclopina belgica, Giesbrecht.

Fig. 2. Female, dorsal view.
„ 3. Antennule.
„ 4. Antenna.
„ 5. Maxilla.
„ 6. Mandible and palp.
„ 7. First maxilliped.
„ 8. Second maxilliped.
„ 9. Foot of first pair.
„ 10. „ second pair.
„ 11. „ fourth pair.
„ 12. „ fifth pair.
„ 13. Abdomen and caudal rami.

Euryte similis, sp. n.

Fig. 14. Female, dorsal view.
Fig. 15. Antennule.
„ 16. Antenna.
„ 17. First maxilliped.
„ 18. Second maxilliped.
„ 19. Foot of first pair.
„ 20. „ second pair.
„ 21. „ fourth pair.
„ 22. „ fifth pair.

Tisbe gracilipes, sp. n.

Fig. 23. Antennule, female.
„ 24. Antenna.
„ 25. Second maxilliped.
„ 26. Foot of first pair.
„ 27. „ fourth pair.
„ 28. „ fifth pair.
„ 29. Abdomen and caudal rami.

Plate II.

Bradya proxima, sp. n.

Fig. 1. Female, side view.
„ 2. Antennule, female.
„ 3. Antenna.
„ 4. Mandible.
„ 5. Second maxilliped.
„ 6. Foot of third pair.
„ 7. „ fourth pair.
„ 8. „ fifth pair, female.
„ 9. Abdomen and caudal rami.

Ectinosoma antarctica, Giesbrecht.

Fig. 10. Antennule, female.
„ 11. Antenna.
„ 12. First maxilliped (*a*); second maxilliped (*b*).
„ 13. Foot of fifth pair, female.

Parathalestris clausi (Norman).

Fig. 14. Second maxilliped.
Fig. 15. Foot of first pair.
„ 16. „ second pair.
„ 17. „ fifth pair, male.

Dactylopusia frigida, sp. n.

Fig. 18. Antennule, female.
„ 19. Antenna.
„ 20. Second maxilliped.
„ 21. Foot of first pair.
„ 22. „ fourth pair.
„ 23. „ fifth pair, female.
„ 24. Abdomen and caudal rami.

Dactylopusia perplexa, sp. n.

Fig. 25. Antennule, female.
„ 26. Antenna.
„ 27. Mandible and palp.
„ 28. Foot of first pair.
„ 29. „ fifth pair, female.

Plate III.

Idomene forficata, Philippi.

Fig. 1. Female, seen dorsally.
„ 2. Outer ramus of antenna.
„ 3. Second maxilliped.
„ 4. Foot of first pair.
„ 5. „ fourth pair.
„ 6. „ fifth pair, male.

Parathalestris coatsi, sp. n.

Fig. 7. Female, seen dorsally.
„ 8. Antennule, female.
„ 9. Antenna.
„ 10. Mandible and palp.
„ 11. Second maxilliped.
„ 12. Foot of first pair.

Parathalestris coatsi—contd.

Fig. 13. Foot of second pair.
„ 14. „ fourth pair.
„ 15. „ fifth pair, female.
„ 16. Abdomen and caudal rami.

Parathalestris affinis, sp. n.

Fig. 17. Female, seen dorsally.
„ 18. Antennule, female.
„ 19. Antenna.
„ 20. Mandible.
„ 21. Maxilla.
Fig. 22. First maxilliped.
„ 23. Second maxilliped.
„ 24. Foot of first pair.
„ 25. „ fifth pair.

Tisbe austrina, sp. n.

Fig. 26. Antennule, female.
„ 27. Antenna.
„ 28. Second maxilliped.
„ 29. Foot of first pair.
„ 30. „ fifth pair, female.

PLATE IV.

Idomene forficata, Philippi.

Fig. 1. Antennule, female.

Saphirella abyssicola, T. Scott.

Fig. 2. Female, seen dorsally.
„ 3. Antennule, female.
„ 4. Mandible (*a*), maxilla (*b*).

Porcellidium affine, Quidor.

Fig. 5. Female, seen dorsally.
„ 6. Male, seen dorsally.
„ 7. Antennule, female.
„ 8. Antenna.
„ 9. Foot of first pair.
„ 10. „ fifth pair, female.
„ 11. „ fifth pair, male.
„ 12. Abdomen and caudal rami, female.
„ 13. „ „ male.

Machairopus major, sp. n.

Fig. 14. Female, dorsal view.
Fig. 15. Antennule, female.
„ 16. Mandible and palp.
„ 17. Maxilla.
„ 18. Second maxilliped.
„ 19. Foot of first pair.
„ 20. „ second pair.
„ 21. „ third pair.
„ 22. „ fourth pair.
„ 23. „ fifth pair, female.
„ 24. Abdomen and caudal rami.

Parastenhelia antarctica, sp. n.

Fig. 25. Antennule, female.
„ 26. Mandible.
„ 27. First maxilliped.
„ 28. Second maxilliped.
„ 29. Foot of first pair.
„ 30. „ second pair.
„ 31. „ fourth pair.
„ 32. „ fifth pair, female.
„ 33. Abdomen and caudal rami.

PLATE V.

Phyllopodopsyllus mossmani, sp. n.

Fig. 1. Female (♀), and male (♂), side view.
„ 2. Antennule, female.
„ 3. Antennule, male.
„ 4. Antenna.
„ 5. Mandible and palp.
„ 6. Second maxilliped.
„ 7. Foot of first pair.
„ 8. „ second pair, female.
„ 9. „ second pair, male.
„ 10. „ fourth pair.
„ 11. „ fifth pair, female.
„ 12. „ fifth pair, male.
„ 13. Abdomen and caudal rami, female.
Fig. 14. Abdomen and caudal rami, male.

Harpacticus piriei, sp. n.

Fig. 15. Foot of fifth pair, female.

Psamathe longicauda, Philippi.

Fig. 16. Female, seen dorsally.
„ 17. Antennule, female.
„ 18. Antenna.
„ 19. First maxilliped.
„ 20. Second maxilliped.
„ 21. Foot of first pair.
„ 22. „ fifth pair, female.

Plate VI.

Dactylopusia perplexa, sp. n.

Fig. 1. Second maxilliped.
„ 2. Foot of fourth pair.

Asterocheres suberites, Giesbrecht, var.

Fig. 3. Antennule, female.
„ 4. Antenna.
„ 5. First maxilliped.
„ 6. Second maxilliped.
„ 7. Siphon.
„ 8. Foot of first pair.
„ 9. „ second pair.
„ 10. „ fourth pair.
„ 11. Abdomen and caudal rami.

Psamathe fucicola, sp. n.

Fig. 12. Antennule, female.
„ 13. Antenna.
Fig. 14. Mandible and palp.
„ 15. Maxilla.
„ 16. Foot of first pair.
„ 17. „ fourth pair.
„ 18. „ fifth pair.
„ 19. Abdomen and caudal rami.

Machairopus australis, sp. n.

Fig. 20. Antennule, female.
„ 21. Antenna.
„ 22. Mandible and palp.
„ 23. First maxilliped.
„ 24. Second maxilliped.
„ 25. Foot of first pair.
„ 26. „ second pair.
„ 27. „ fourth pair.
„ 28. „ fifth pair.

Plate VII.

Laophonte rottenburgi, sp. n.

Fig. 1. Antennule, female.
„ 2. Second maxilliped.
„ 3. Foot of first pair.
„ 4. „ third pair.
„ 5. „ fifth pair, female.
„ 6. Abdomen and caudal rami.

Laophonte wiltoni, sp. n.

Fig. 7. Female, dorsal view.
„ 8. Antennule, female.
„ 9. Antenna.
„ 10. Second maxilliped.
„ 11. Foot of first pair.
„ 12. „ second pair.
„ 13. „ fourth pair.
„ 14. „ fifth pair.
„ 15. Abdomen and caudal rami.

Laophonte exigua, sp. n.

Fig. 16. Antennule, female.
„ 17. Antenna.
„ 18. Foot of first pair.
„ 19. „ second pair.
„ 20. „ fourth pair.
„ 21. „ fifth pair, female.
„ 22. Abdomen and caudal rami.

Ameira simulans, sp. n.

Fig. 23. Antennule, female.
„ 24. Second maxilliped.
„ 25. Foot of first pair.
„ 26. „ fourth pair.
„ 27. „ fifth pair, female.
„ 28. Abdomen and caudal rami.

Plate VIII.

Laophontodes whitsoni, sp. n.

Fig. 1. Female, dorsal view.
„ 2. Antennule, female.
„ 3. Antenna.
„ 4. Second maxilliped.
„ 5. Foot of first pair.
„ 6. „ second pair.
„ 7. „ fourth pair.
„ 8. „ fifth pair, female.

Pseudozosime browni, sp. n.

Fig. 9. Female, dorsal view.
„ 10. „ side view.
„ 11. Antennule, female.
„ 12. Antenna.
„ 13. Maxilla.
„ 14. First maxilliped.
„ 15. Second maxilliped.
„ 16. Foot of first pair.
„ 17. „ second pair.
„ 18. „ fourth pair.
„ 19. „ fifth pair, female.

Harpacticus fucicolus, sp. n.

Fig. 20. Antennule, female.
„ 21. Antenna.
Fig. 22. Second maxilliped.
„ 23. Foot of first pair.
„ 24. „ fifth pair, female.

PLATE IX.

Pseudothalestris intermedia, sp. n.

Fig. 1. Antennule, female.
„ 2. Second maxilliped.
„ 3. Foot of second pair, male; third inner ramus of left foot.
„ 4. Fifth pair, female.

Pseudothalestris assimilis, var. *antarctica*.

Fig. 5. Second maxilliped.
„ 6. Foot of first pair.
„ 7. „ second pair, male.
„ 8. Foot of fifth pair, male.
„ 9. Abdomen and caudal rami.

Orthopsyllus linearis, Claus.

Fig. 10. Female, dorsal view.
„ 11. Antennule, female.
„ 12. Antenna.
„ 13. Mandible and palp.
„ 14. First maxilliped.
Fig. 15. Second maxilliped.
„ 16. Foot of first pair.
„ 17. „ second pair, inner ramus.
„ 18. „ third pair, inner ramus.
„ 19. „ fourth pair.
„ 20. „ fifth pair, female.
„ 21. „ third pair, male, inner ramus.
„ 22. „ fifth pair, male.

Amphiascus fucicolus, sp. n.

Fig. 23. Antennule, female.
„ 24. Antenna.
„ 25. Second maxilliped.
„ 26. Foot of first pair.
„ 27. „ fourth pair.
„ 28. „ fifth pair, female.

Idomene forficata, Philippi.

Fig. 29. Foot of fifth pair, female.

PLATE X.

Alteutha dubia, sp. n.

Fig. 1. Female, seen dorsally.
„ 2. Antennule, female.
„ 3. Antenna.
„ 4. Second maxilliped.
„ 5. Foot of first pair.
„ 6. „ fourth pair.
„ 7. „ fifth pair, female.
„ 8. Abdomen and caudal rami.

Alteutha austrina, sp. n.

Fig. 9. Female, dorsal view.
„ 10. Antennule, female.
„ 11. Second maxilliped.
„ 12. Foot of first pair.
Fig. 13. Foot of fourth pair.
„ 14. „ fifth pair, female.
„ 15. Abdomen and caudal rami.

Paralteutha typica, gen. et sp. n.

Fig. 16. Female, dorsal view.
„ 17. Antennule, male.
„ 18. Antenna.
„ 19. Mandible and palp, male.
„ 20. Second maxilliped.
„ 21. Foot of first pair.
„ 22. „ fourth pair.
„ 23. „ fifth pair, female.
„ 24. „ fifth pair, male.
„ 25. Abdomen and caudal ramus.

PLATE XI.

Artotrogus proximus, sp. n.

Fig. 1. Female, dorsal view.
„ 2. Antennule, female.
„ 3. Antenna.
„ 4. Mandible.
„ 5. Maxilla.
„ 6. First maxilliped.
„ 7. Second maxilliped.
„ 8. Foot of fourth pair.
„ 9. „ fifth pair, female.

Laophonte australis, sp. n.

Fig. 10. Female, side view.
„ 11. Antennule, female.
„ 12. Antenna.
„ 13. Second maxilliped.
„ 14. Foot of first pair.
„ 15. „ second pair.
„ 16. „ fifth pair, female.
„ 17. Abdomen and caudal rami.

Harpacticus piriei, sp. n.

Fig. 18. Antennule, female.
„ 19. Antenna.
„ 20. Second maxilliped.
„ 21. Foot of first pair.
Fig. 22. Foot of second pair.
„ 23. „ third pair.
„ 24. „ fourth pair.
„ 25. Abdomen and caudal rami.

PLATE XII.

Pseudanthessius fucicolus, sp. n.

Fig. 1. Female, dorsal view.
„ 2. Antennule, female.
„ 3. Antenna.
„ 4. Mandible.
„ 5. Maxilla.
„ 6. First maxilliped.
„ 7. Second maxilliped.
„ 8. Foot of first pair.
„ 9. „ third pair.
„ 10. „ fourth pair.
„ 11. „ fifth pair.
„ 12. Abdomen and caudal rami, female.
„ 13. Abdomen and caudal rami, male, a = fifth foot.

Dactylopusia ferrieri, sp. n.

Fig. 14. Female, side view.
„ 15. Antennule, female.
Fig. 16. Maxilla.
„ 17. First maxilliped.
„ 18. Second maxilliped.
„ 19. Foot of first pair.
„ 20. „ second pair.
„ 21. „ fourth pair.
„ 22. „ fifth pair.

Lichomolgus fucicola, Brady.

Fig. 23. Antennule, female.
„ 24. Antenna.
„ 25. Foot of fourth pair.
„ 26. Abdomen and caudal rami.

Pseudothalestris intermedius, sp. n.

Fig. 27. Foot of first pair.
„ 28. „ second pair.
„ 29. „ fifth pair.

PLATE XIII.

Fig. 1. *Calanopia americana*, Dahl. Antennule, ♂.
„ 2. „ „ „ Foot of first pair.
„ 3. „ „ „ „ fourth pair.
„ 4. „ „ „ „ fifth pair, ♀.
„ 5. „ „ „ „ fifth pair, ♂.
„ 6. „ „ „ Abdomen and caudal rami, ♂.
„ 7. *Pleuromamma gracile* (Claus). Fifth pair of feet, ♀.
„ 8. „ „ var. *Esterleyi*, nov. Foot of second pair, ♀, basal part.
„ 9. „ „ „ „ Fifth pair of feet, ♀.
„ 10. „ „ „ „ Abdomen, ♀, side view.
„ 11. *Clytemnestra scutellata*, Dana, ♀. Terminal joints of antennule.
„ 12. „ „ „ Last abdominal segment and caudal rami.
„ 13. *Dysgamus atlanticus*, Stp. and Ltk., ♂. Dorsal view.
„ 14. *Evadne tergestina*, Claus. Side view.
„ 15. „ *spinifera*, P. E. Müller. Side view.
„ 16. *Philomedes assimilis*, Brady, ♀. Side view.
„ 17. „ „ „ Post abdomen.
„ 18. *Asterope australis*, Brady, ♀. Side view.
„ 19, „ „ „ Post abdomen.
„ 20. „ *oculata*, „ Side view.
„ 21. „ „ „ Post abdomen.
„ 22. *Euconchœcia chierchiæ*, G. W. Müller, ♀. Side view.
„ 23. „ „ „ Antennule.
„ 24. „ „ „ Post abdomen.

Fig. 25. *Conchœcia spinirostris*, Claus, ♂. Side view.
„ 26. „ „ „ Post abdomen.
„ 27. „ *procera*, G. W. Müller, ♂. Side view.
„ 28. „ „ „ Post abdomen.
„ 29. *Halocypris inflata*, Dana, ♀. Side view.
„ 30. „ „ „ Antennule.
„ 31. „ „ „ Post abdomen.
„ 32. „ *globosa*, Claus, ♀. Side view.

Plate XIV.

Fig. 1. *Macrocypris maculata*, G. S. Brady. Side view.
„ 2. „ „ „ Seen from above.
„ 3. *Cythere latibrosa*, sp. n. Side view.
„ 4. „ „ „ Dorsal view.
„ 5. „ *antarctica* „ Side view.
„ 6. „ „ „ Dorsal view.
„ 7. „ *foveolata*, Brady, ♂. Side view.
„ 8. „ „ „ Dorsal view.
„ 9. „ *inornata*, sp. n. Side view.
„ 10. „ „ „ Dorsal view.
„ 11. „ *peregrina* „ Side view.
„ 12. „ „ „ Dorsal view.
„ 13. „ *foveolata*, Brady, ♀. Side view.
„ 14. „ „ „ Dorsal view.
„ 15. „ *quadridens*, sp. n. Side view.
„ 16. „ „ „ Dorsal view.
„ 17. *Xestoleberis reniformis*, Brady. Side view.
„ 18. „ „ „ Dorsal view.
„ 19. *Cytherura ornata*, sp. n. Side view.
„ 20. „ „ „ Dorsal view.
„ 21. „ „ „ Ventral view.
„ 22. „ *porrecta* „ Side view.
„ 23. „ „ „ Dorsal view.
„ 24. „ *sculptilis*, sp. n. Side view.
„ 25. „ „ „ Dorsal view.
„ 26. *Paradoxostoma retusum*, Brady. Side view.
„ 27. „ *antarcticum*, sp. n. Side view.
„ 28. „ „ „ Dorsal view.
„ 29. „ *lævе*, sp. n. Side view.
„ 30. „ „ „ Dorsal view.

Note.—I am indebted to my son, Andrew Scott, A.L.S., for the drawings mentioned below—viz., all the figures on Plate V. except figure 15 ; figures 1–19 on Plate VIII. ; and figures 1–9 on Plate XI. Also for the undernoted figures on Plate XIV., viz., figures 3–8, 13–16, and 19–23.

ADDENDA.

Oithona frigida, Giesb., *Expéd. Antarct. Belge*, "Copep.," p. 29, pl. vi. In a *Scotia* gathering, 0–200 fathoms, lat. 69° 22′ S., 26° 36′ W., 28th February 1903, Station 273.

Lepeophtheirus nordmanni, M.-Edw.

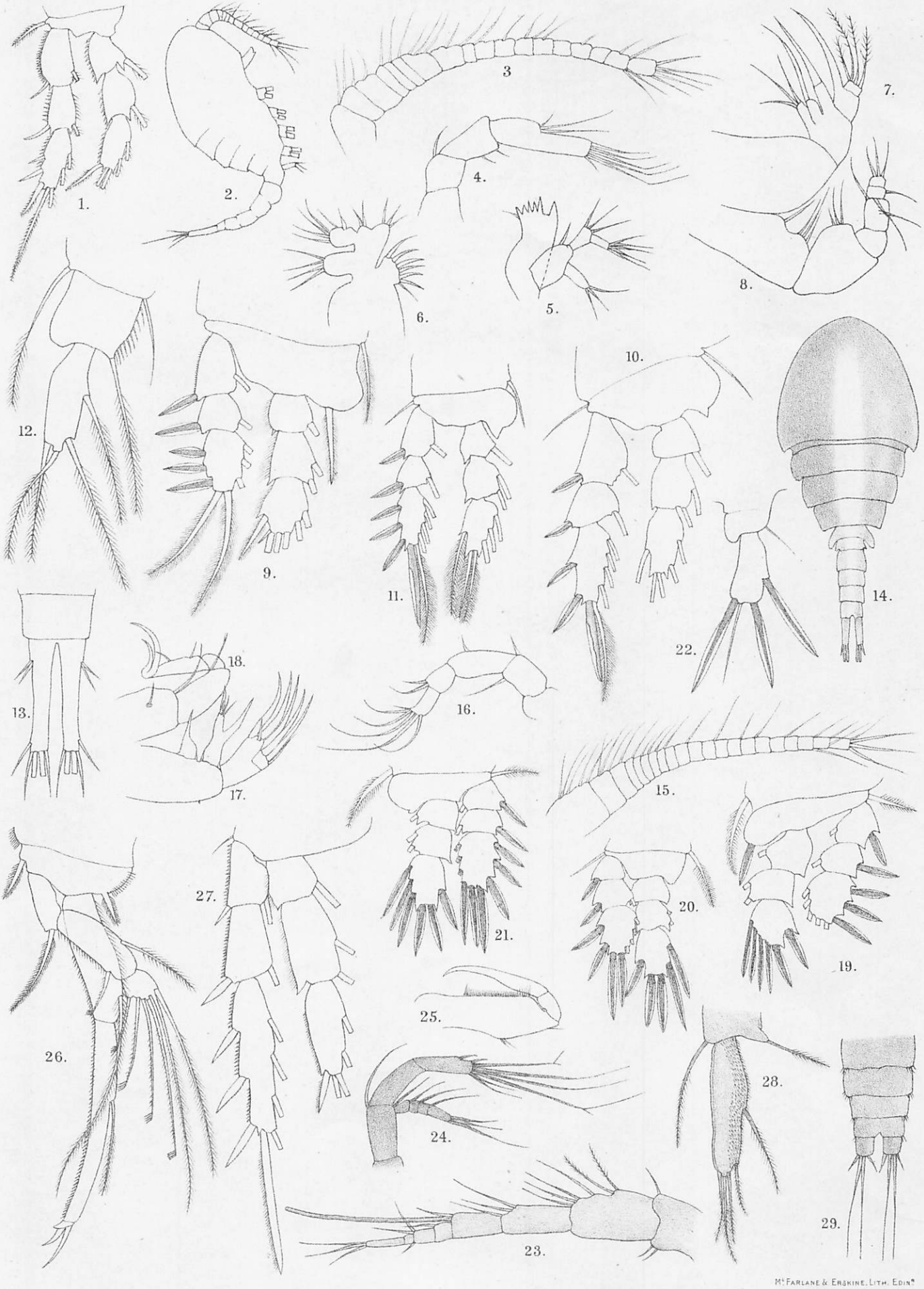
Cecrops latreillii, Leach.

These two parasitic Copepods were obtained on a short Sunfish, *Orthagoriscus mola* (Lin.), captured in lat. 39° 1′ S., long. 53° 40′ W., the first on the skin, the other on the gills, 1st January 1903, Station 107.

Alebion carchariæ, Kröyer. This species was obtained on a shark, *Carcharias*, sp., captured in lat. 9° 23′ N., long. 25° 31′ W., on 5th December 1902, Station 34.

One or two specimens of *Labidocera lubbocki*, Giesb., were obtained in a gathering from the South Atlantic, but the exact locality is somewhat uncertain.

SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE I.



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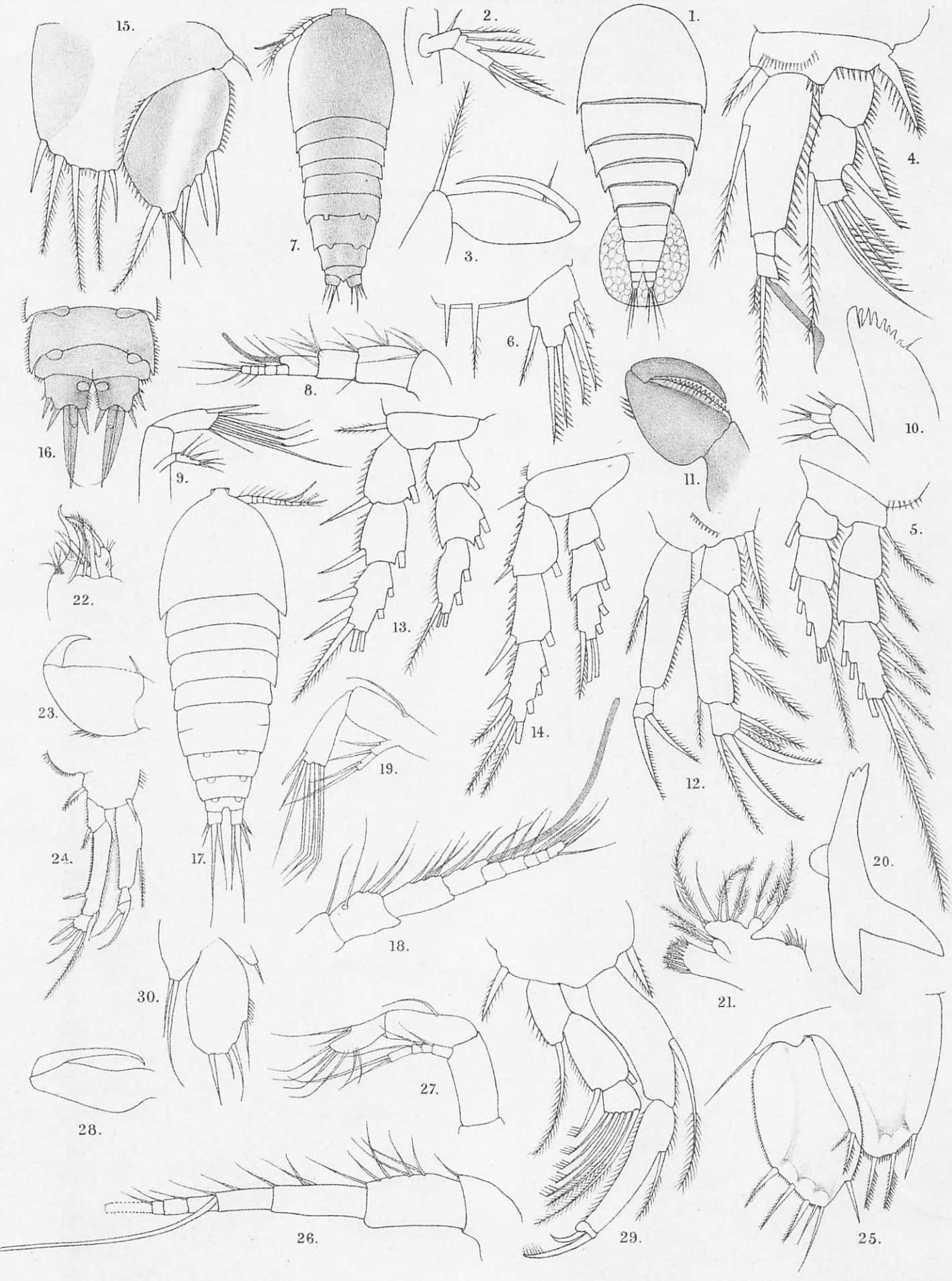
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE II.

M^c FARLANE & ERSKINE, LITH: EDIN^R

SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE III.



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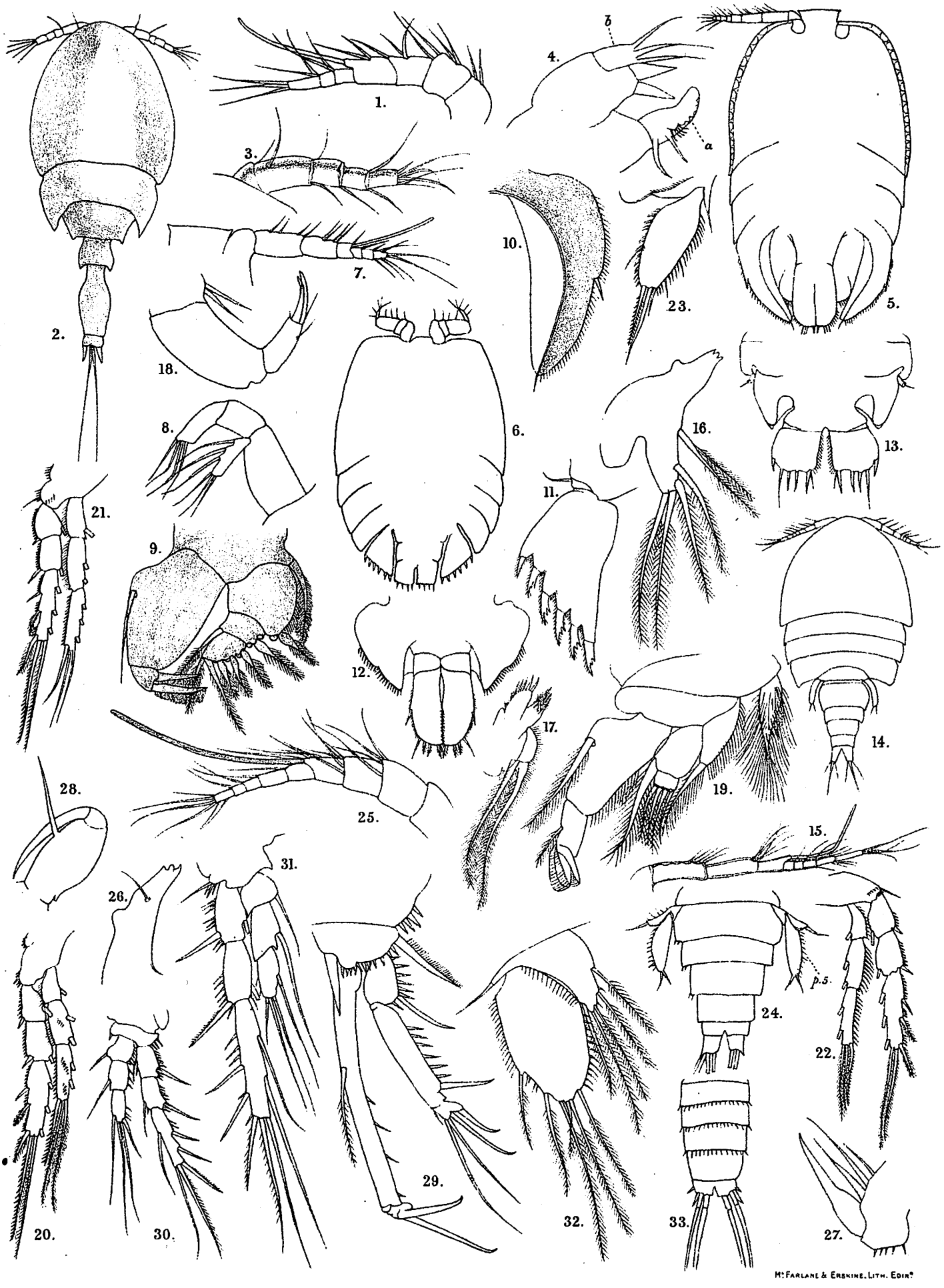
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE IV.



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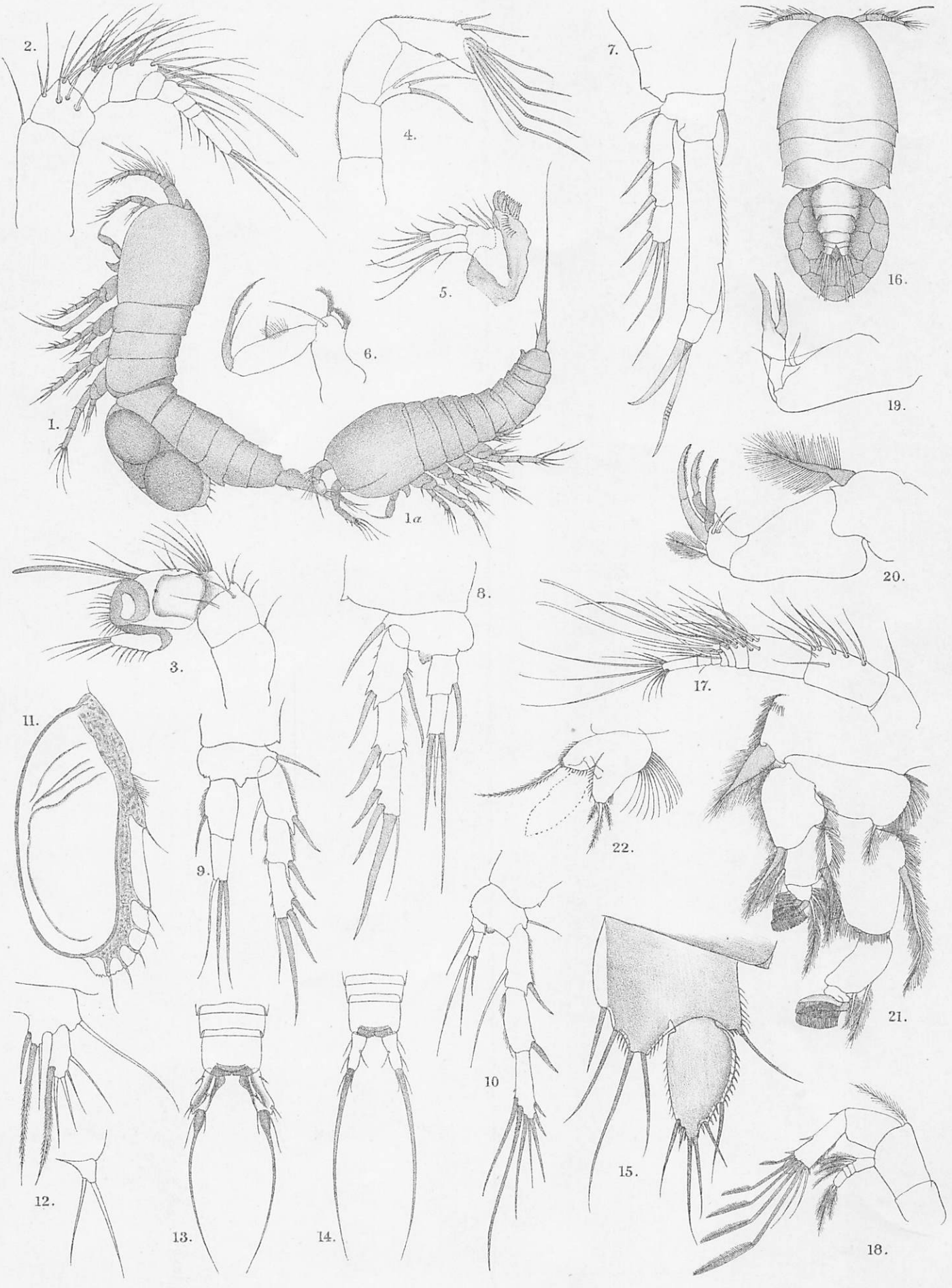
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE V.



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SCOTT: "SCOTIA" ENTOMOSTRACA—PLATE VI.

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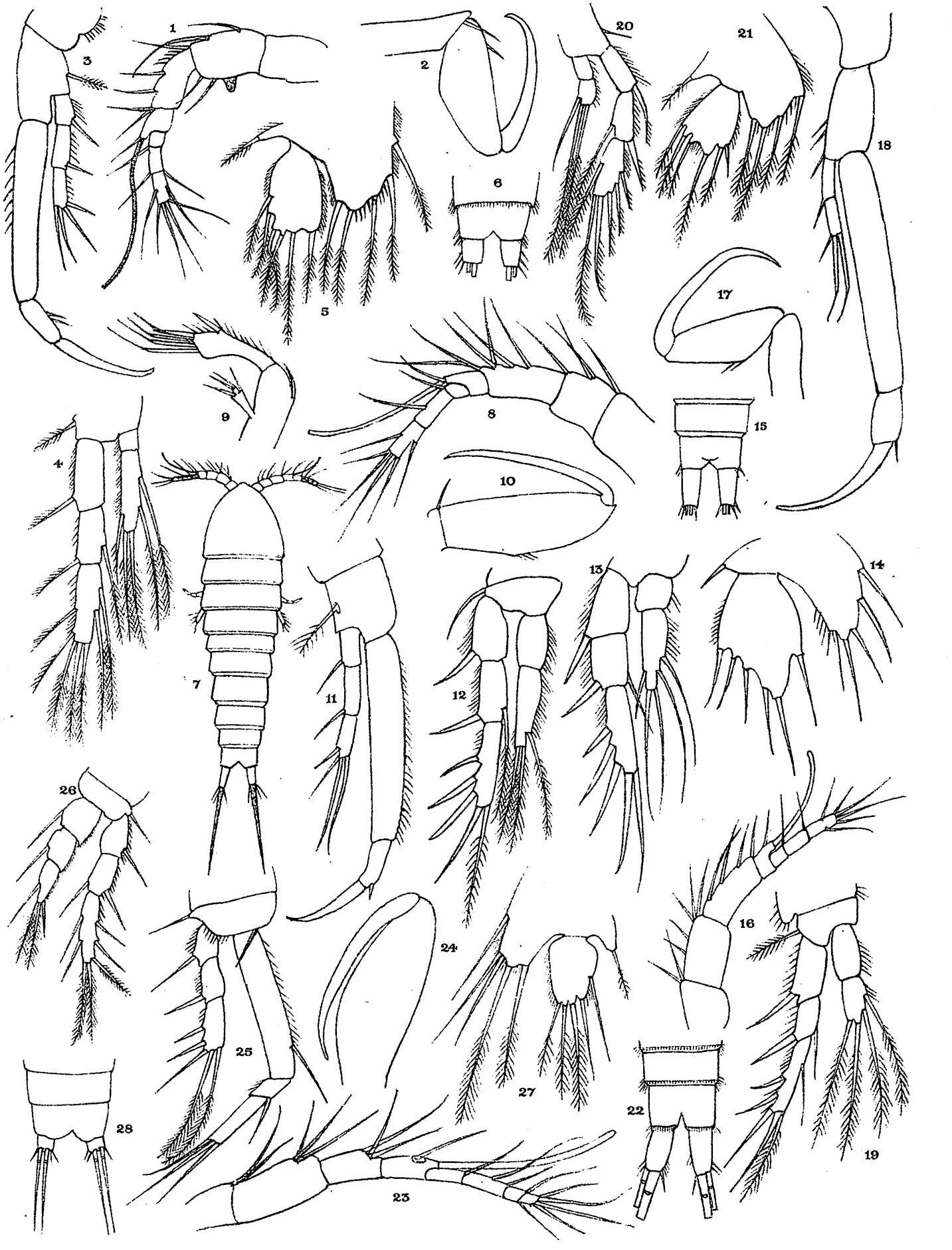
SCOTT: "SCOTIA" ENTOMOSTRACA—PLATE VII.



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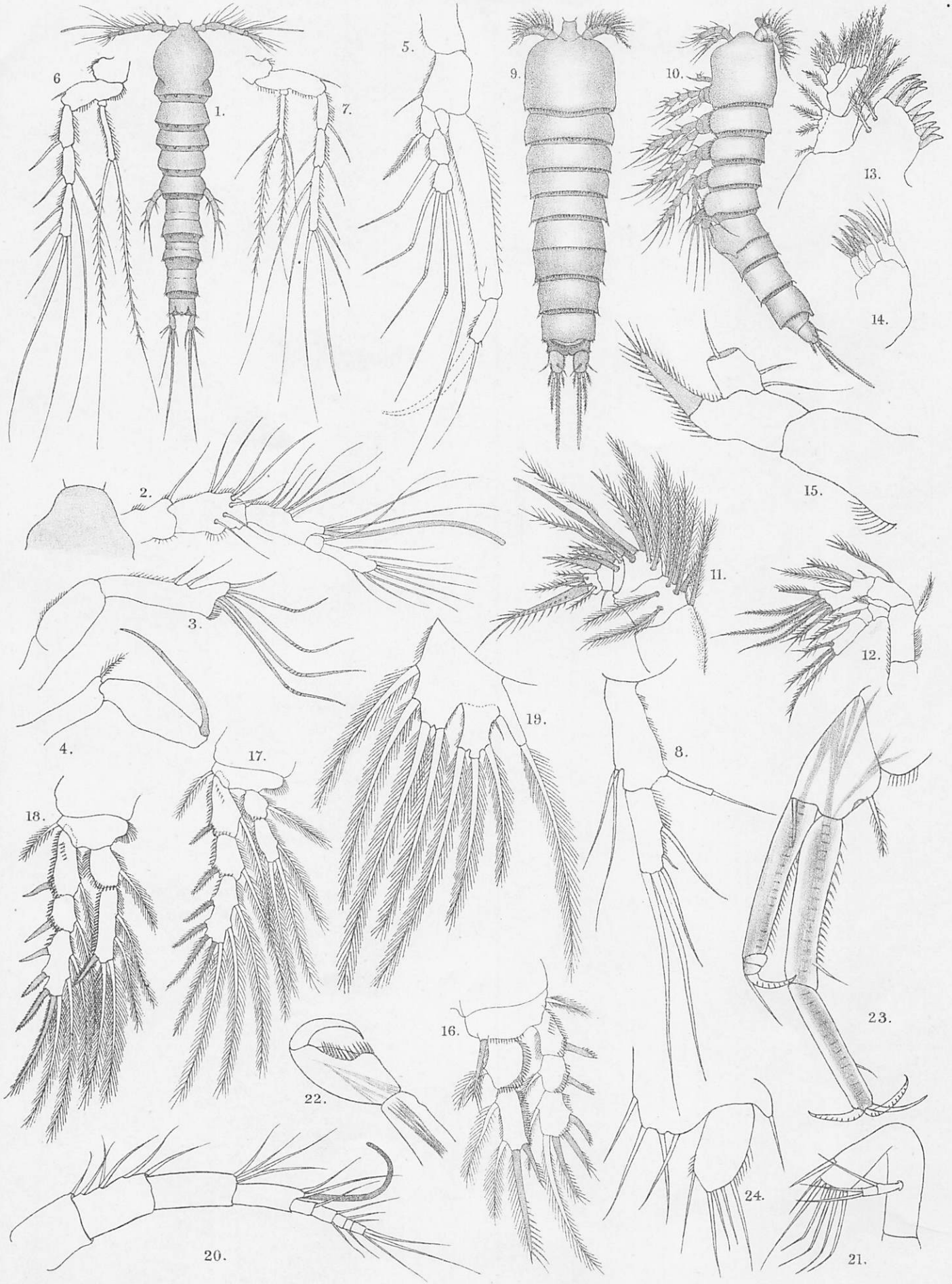
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE VIII.



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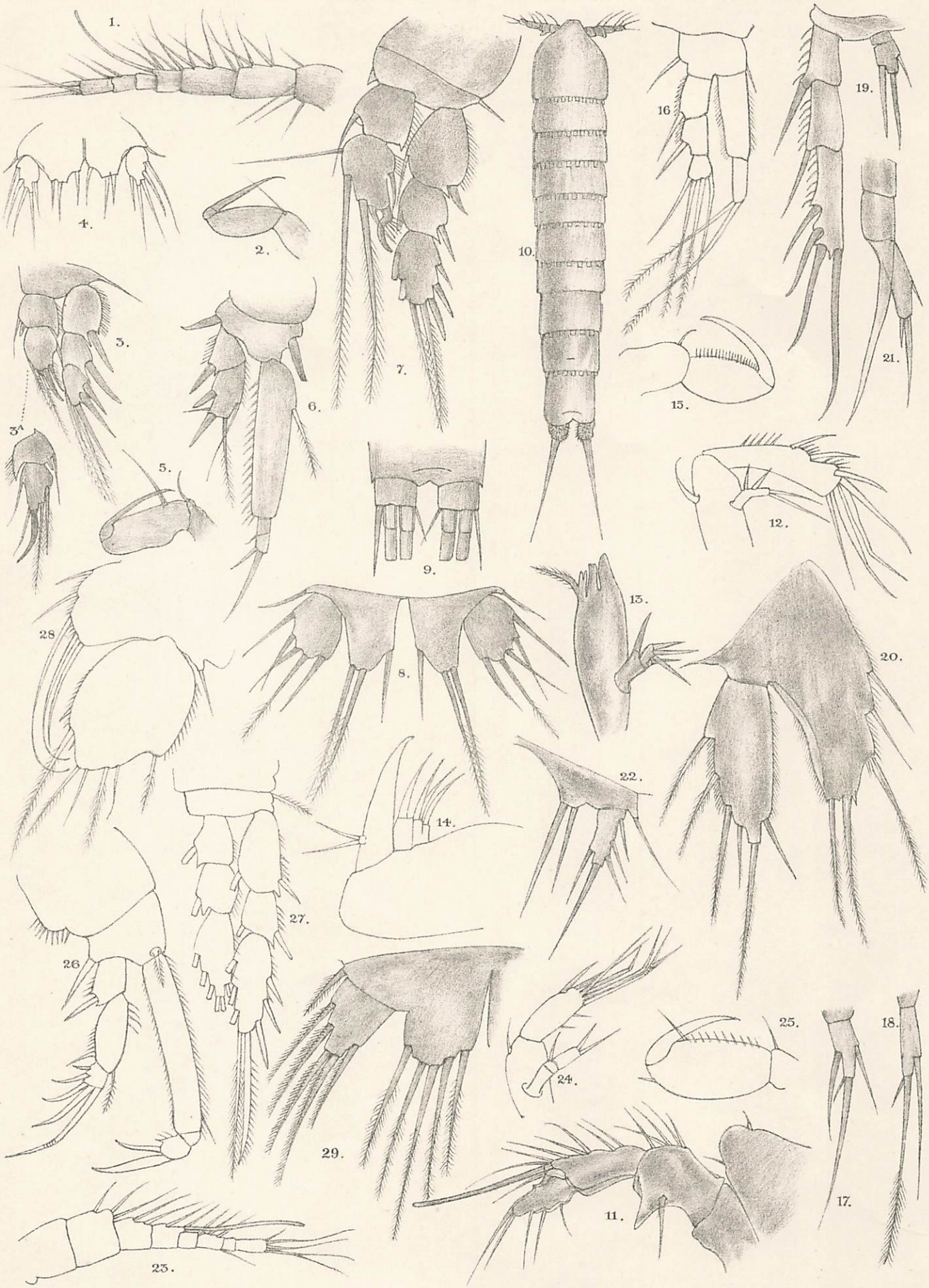
SCOTT: "SCOTIA" ENTOMOSTRACA—PLATE IX.



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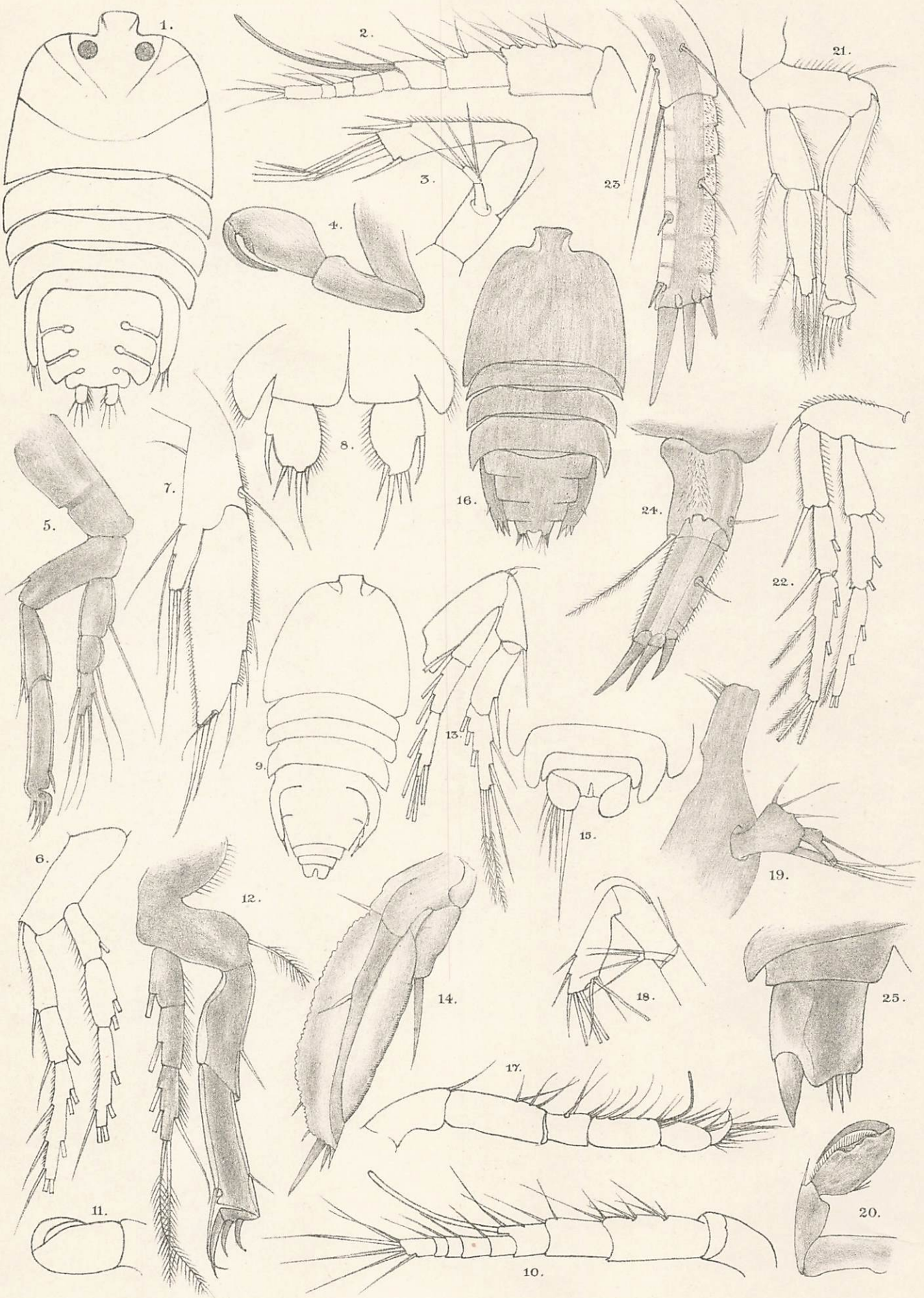
SCOTT: "SCOTIA" ENTOMOSTRACA—PLATE X.



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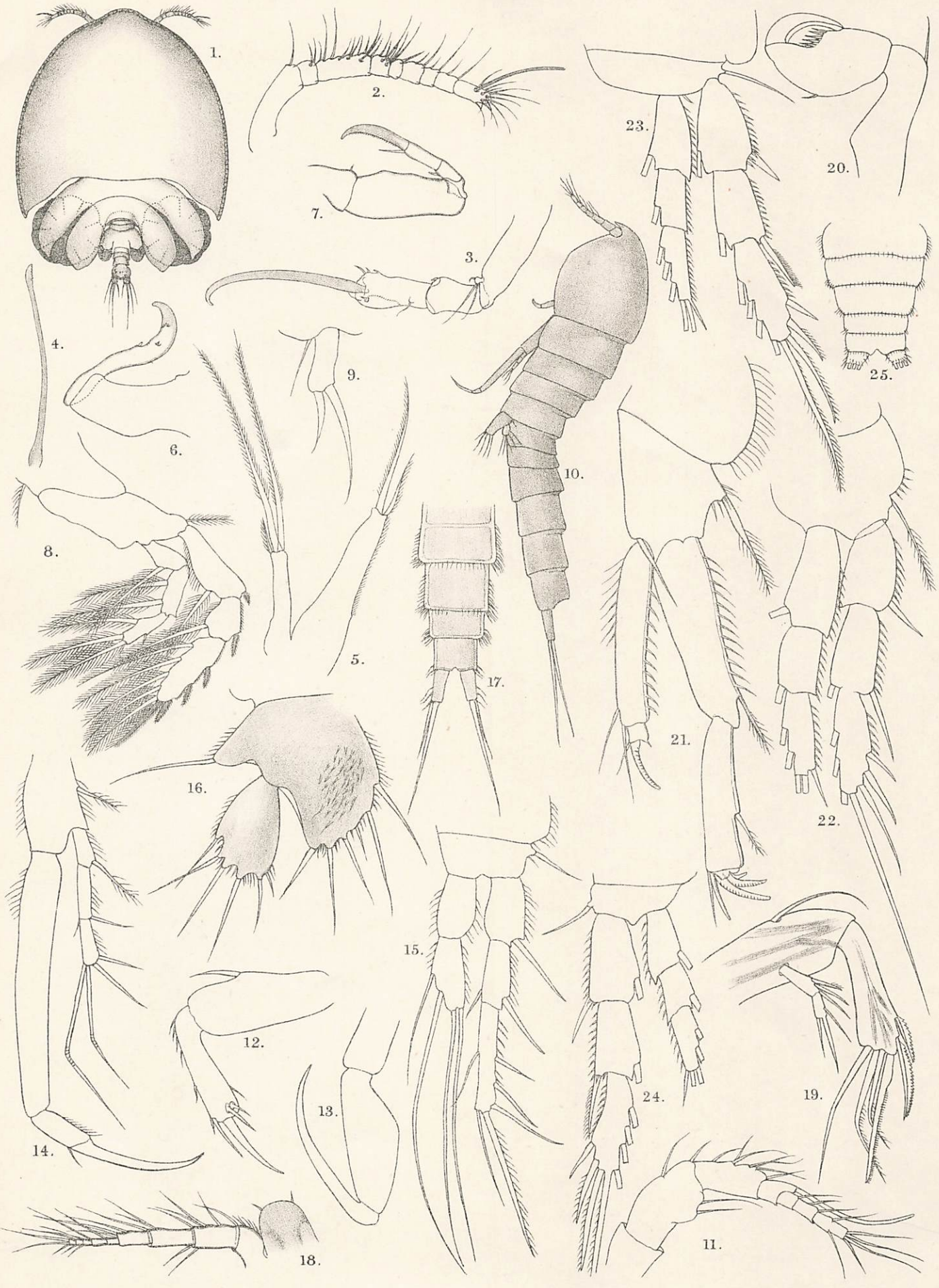
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE XI.



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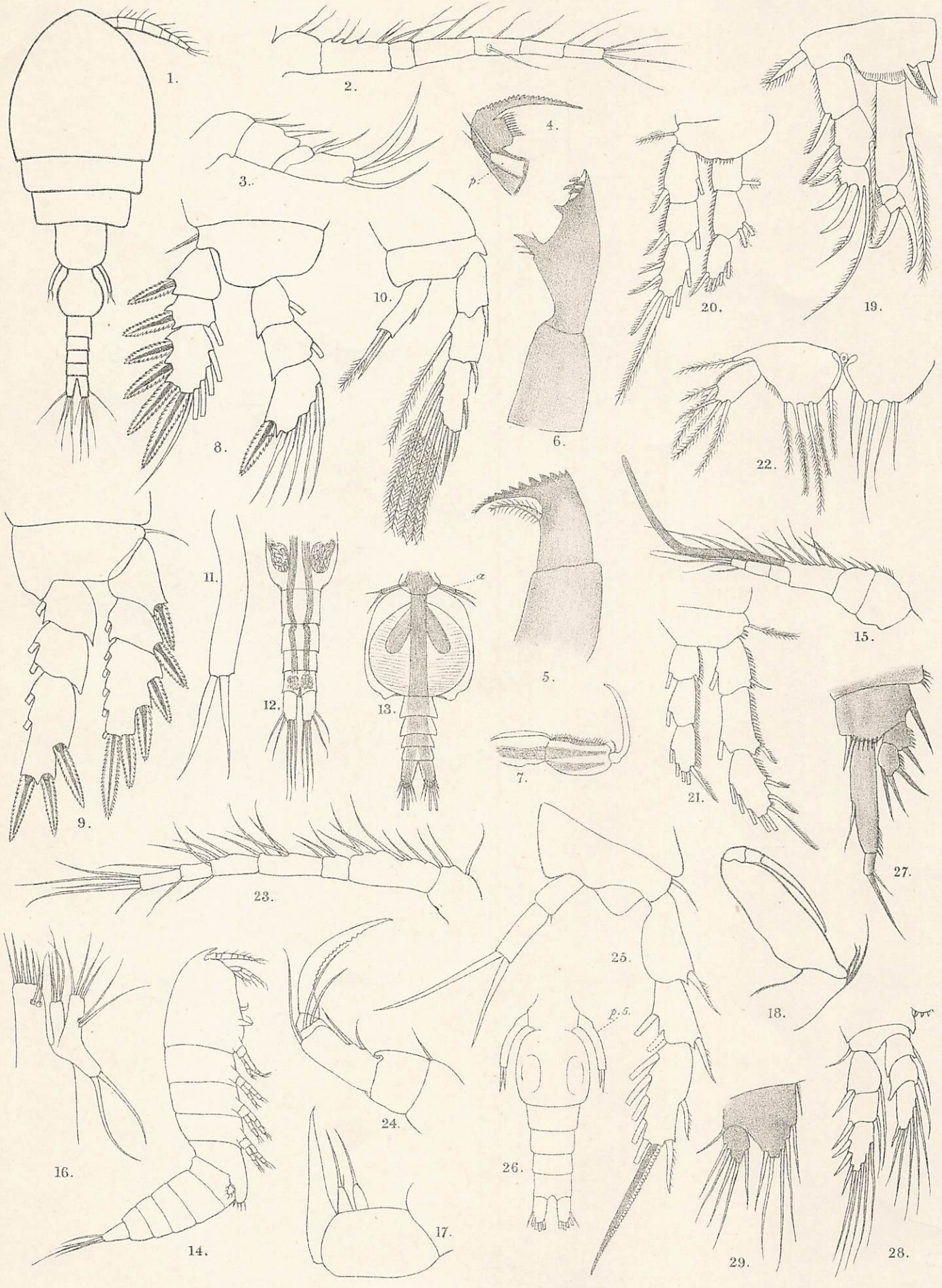
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE XII.



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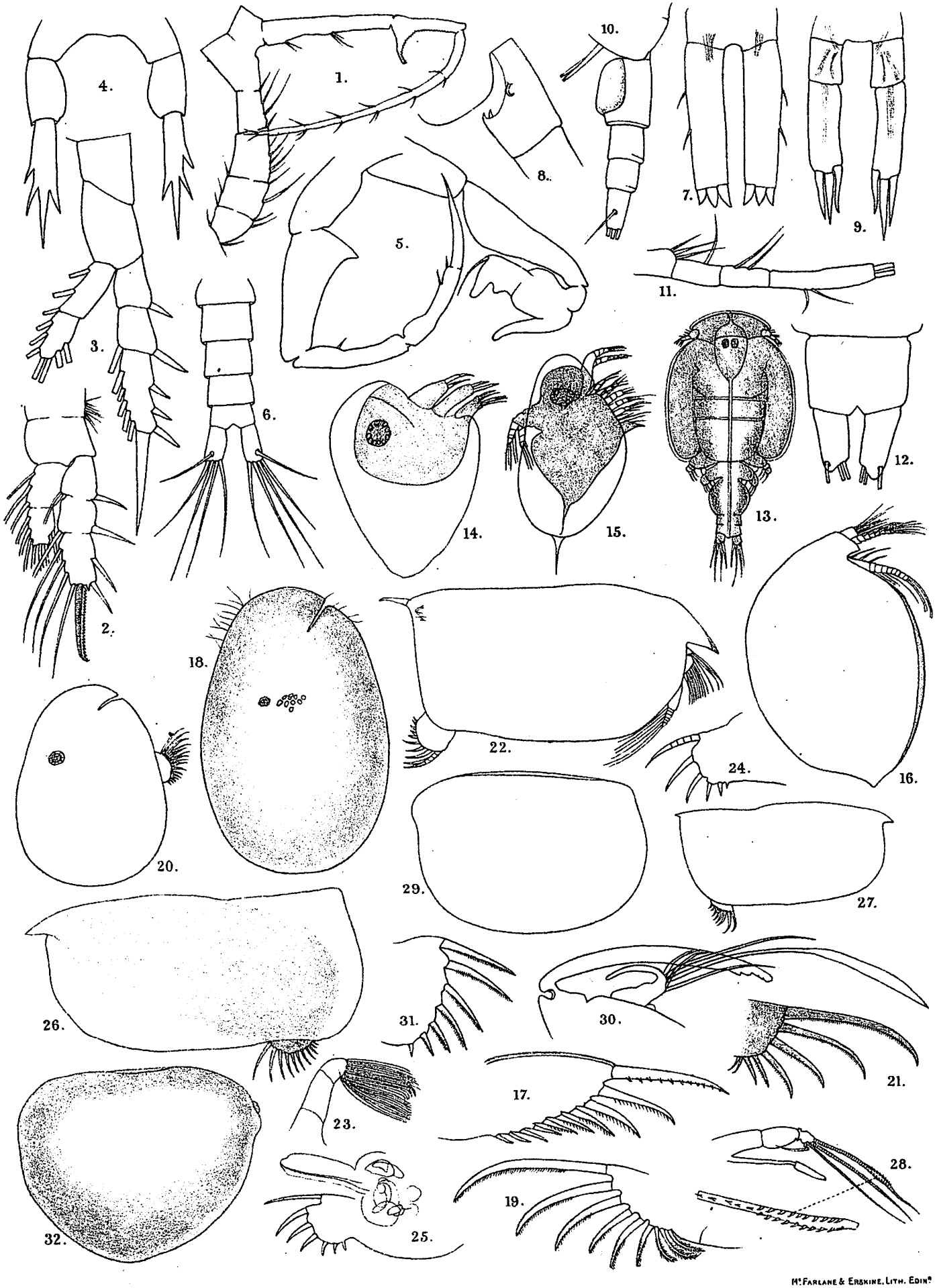
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE XIII.



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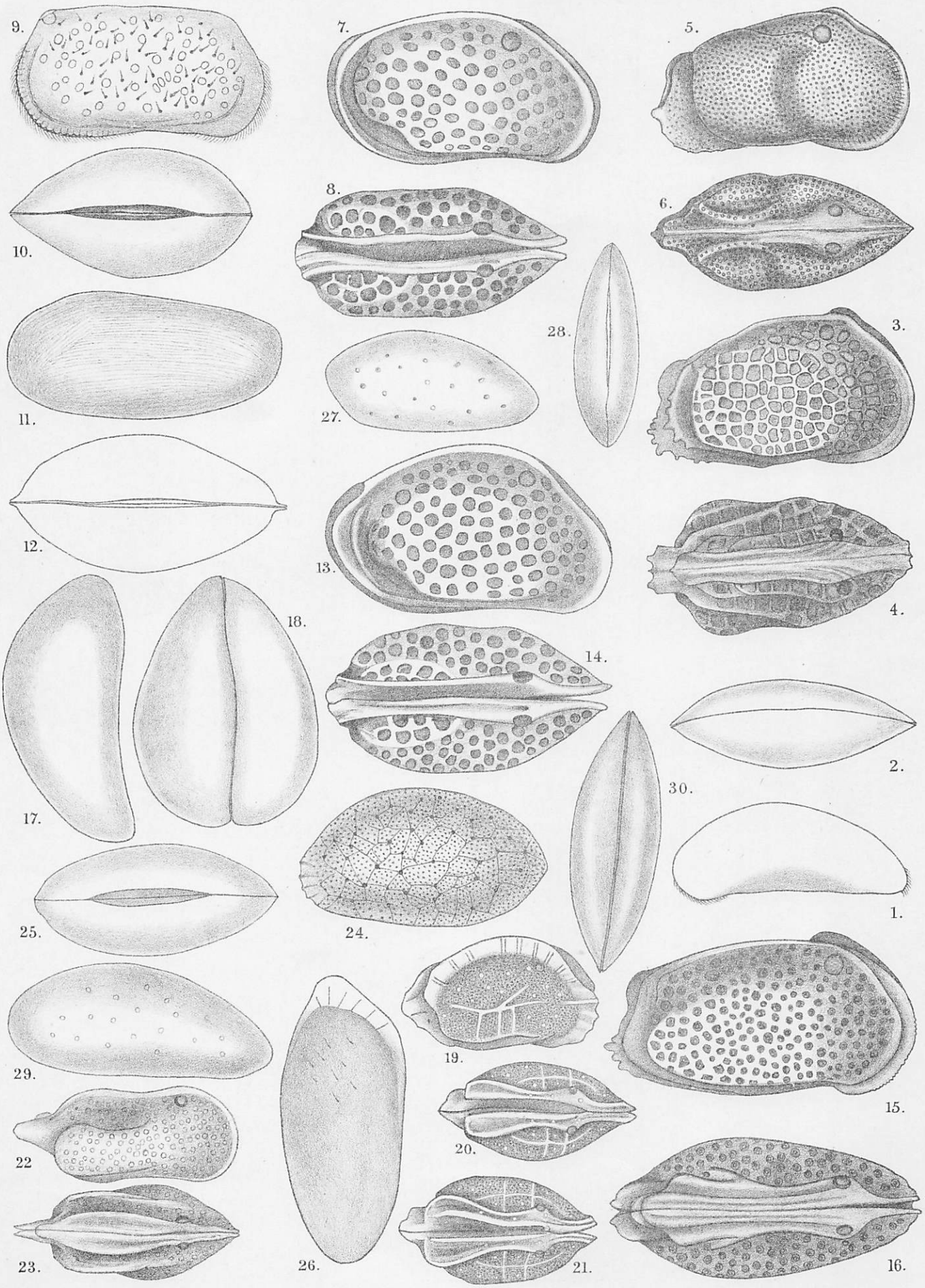
SCOTT: "SCOTIA" ENTOMOSTRACA.—PLATE XIV.



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