

XVII.—*Report on the Isopoda and Amphipoda collected by Mr. George Murray, F.R.S., during the Cruise of the 'Oceana' in November 1898**. By ALFRED O. WALKER.

[Plates XVIII. & XIX.]

Contents of Tubes.

ISOPODA.

No. of Net, &c.		
4a.	Nov. 20.	1170 fath.
4c.	"	920 fath.
4f.	"	1275 fath.
4h.	"	1470 fath.
5h.	Nov. 21.	1410 fath.
5l.	"	1710 fath.

In each of these tubes there was one (in 5h two) specimen of the Munnopsid described below. In net 4f there was also an Epicarid larva.

AMPHIPODA.

Lat. 52° 4'·5 N.
Long. 11° 20'·1 W.

1a.	Nov. 19.	Surface.	<i>Parathemisto oblivia</i> (Kröyer). 5 or 6 young.
1b.	"	20 fath.	<i>Parathemisto oblivia</i> (Kröyer). ♀ and young.
1c.	"	50 fath.	<i>Parathemisto oblivia</i> (Kröyer). 4 young.

Lat. 52° 4'·5 N.
Long. 12° 27' W.

2a.	Nov. 19.	270 fath.	<i>Brachyscelus</i> sp. 1 young.
2d.	"	374 fath.	<i>Phronima atlantica</i> , Guérin-Mén. 1 young.
2f.	"	620 fath.	<i>Phronima atlantica</i> ? Too young for identification.
			<i>Scina Rattrayi</i> , Stebbing. 1 young.
2g.	"	650 fath.	<i>Brachyscelus mediterraneus</i> (Claus). 2.

Lat. 52° 27'·6 N.
Long. 15° 40'·0 W.

4b.	Nov. 20.	790 fath.	<i>Vibilia armata</i> , Bovallius. 1.
4e.	"	1170 fath.	<i>Phronima atlantica</i> . 1.
4f.	"	1275 fath.	<i>Vibilia</i> sp. Too young.
4h.	"	1470 fath.	<i>Brachyscelus</i> sp. 1 young.

* See Journ. Geograph. Soc. vol. xiii. no. 2, Feb. 1899, where the method of capture, by open tow-nets in series, is described.

	No. of Net, &c.		
4 j.	Nov. 20.	1570 fath.	
			<i>Orchomenopsis abyssorum</i> (Stebbing). 1.
4 k.	"	1670 fath.	
			Epicarid larva. 2.
			<i>Scina Rattrayi</i> , Steb. 4.
			<i>Cyphocaris anonyx</i> , Boeck. 1 young.
Lat. 52° 18' 1 N. Long. 15° 53' 9 W.			
5 b.	Nov. 21.	500 fath.	
			<i>Scina Rattrayi</i> . 2.
			<i>Brachyscelus mediterraneus</i> ? Too young.
5 c.	"	810 fath.	
			Epicarid larva.
5 d.	"	950 fath.	
			<i>Hyperia Latreillei</i> , M.-Edwards. 1 young.
5 e.	"	1070 fath.	
			<i>Scina Rattrayi</i> . 2.
			<i>Lanceola</i> sp. 1 young.
5 g.	"	1300 fath.	
			<i>Cyphocaris anonyx</i> , Boeck.
5 h.	"	1410 fath.	
			Epicarid larva. 1.
			<i>Scina Rattrayi</i> . 1.
			<i>Orchomenopsis abyssorum</i> (Stebbing). 1.
5 k.	"	1610 fath.	
			<i>Orchomenopsis abyssorum</i> . 1.
5 l.	"	1710 fath.	
			<i>Phronima sedentaria</i> . 1.
5 s.	"	1510 fath.	
			Epicarid larva. 1.
			<i>Scina Rattrayi</i> . 1.
Lat. 52° 20' N. Long. 15° 7' 9 W.			
6 a.	Nov. 22.	150 fath.	
			<i>Hyperia longipes</i> , A. O. W. 1.
			<i>Brachyscelus</i> sp.? 1 young. Length 1 millim.
6 f.	"	510 fath.	
			<i>Scina marginata</i> (Bovallius). 1.
			<i>Scina Rattrayi</i> . 3.
			<i>Vibilia armata</i> , Bovallius. 1.
			<i>Hyperia longipes</i> , A. O. W. 1.
			<i>Cyphocaris anonyx</i> . 2.
6 g.	"	560 fath.	
			<i>Scina Rattrayi</i> . 2.
			<i>Lanceola</i> sp. 1 young.

The following remarks on the distribution of the genera of Amphipoda taken in the tow-nets may not be without interest:—

Hyperia, Latreille, 1823, as defined by Bovallius, 1887.

Universal; from the Arctic to the Antarctic seas.

Parathemisto, Boeck, 1870.

BOVALLIUS: Arctic and Northern temperate regions (*P. OBLIVIA*); North temperate and subtropical Pacific (*P. japonica*); Antarctic region (*P. Batei*); Pacific, lat. 18° S., long. 124° W. (*P. rubescens*).

STEBBING: Pacific, lat. 35° 20' N., long. 153° 39' E. (*P. pacifica*).

Phronima, Latreille.

The distribution of this genus according to Stebbing ('Challenger' Report, pp. 1358-61) is from lat. 60° N. in the Atlantic to lat. 50° 1' S. in the Southern Ocean, and all round the world from east to west.

Brachyscelus, Sp. Bate, 1861, = *Thamyris*, Claus, 1878.

STEBBING ('Challenger' Report): N. Pacific, lat. 24° 49' N., long. 138° 34' E. (*B. CRUSCULUM*); N. Pacific, lat. 35° N., between Japan and Honolulu (*B. CRUSCULUM*); Celebes Sea, lat. 6° 20' N., long. 123° 18' E. (*B. incequipes*); S. Pacific (*B. latipes*); S. Pacific (*B. Bovallii*); Pacific (*B. acuticaudatus*); off St. Vincent, Cape Verde Islands, lat. 16° 49' N., long. 25° 14' W. (*B. MEDITERRANEUS*). All the above were taken on or near the surface. Lat. 58° S., long. 172° W. (*B. antipodes*); Cape of Good Hope (*B. rapax*); Zanzibar (*B. globiceps*); Naples (*B. MEDITERRANEUS*); Atlantic (*B. elegans*).

NORMAN: Faroe Channel, in "towing-net at a depth of several hundred fathoms" (*B. CRUSCULUM*).

Scina, Prestandrea, 1833, = *Tyro*, H. Milne-Edwards, 1840.

BOVALLIUS: the Atlantic (*S. cornigera*), and lat. 1° N., long. 18° W. (*S. gracilis*); North, tropical, and South Atlantic (*S. Sarsi*); South Atlantic, Indian Ocean (*S. atlantica*); Pacific, lat. 18° 10' S., long. 126° W. (*S. longipes*); Lofoten Islands, west coast of Norway (*S. borealis*; also G. O. Sars); North Atlantic, lat. 62° N., long. 15° W. (*S. Clausii*); Mediterranean (*S. marginata*); off Cape Horn (*S. Tullbergi*); Corinto, Nicaragua (*S. pacifica*).

STEBBING ('Challenger' Report): South Atlantic, lat. 19° 6' S., long. 35° 40' W., and New Hebrides (*S. cornigera*).

STEBBING (Trans. Zool. Soc. vol. xiii. part x. pp. 349-371, pls. 51-54): Atlantic, 7° 54' N., long. 17° 25' W. (*S. acanthodes*); Atlantic, lat. 7° 1' N., long. 15° 54' W. (*S. stenopus* and *S. edicarpus*); lat. 1° 55' N., long. 5° 55' E. (*S. RATTRAY*); lat. 4° 26' S., long. 10° 1' E. (*S. concors*); lat. 3° 0' N., long. 7° 43' W. (*S. similis*); lat. 7° 54' N., long. 17° 25' W. (*S. unciipes*); lat. 5° 88' N., long. 14° 20' W. (*S. cornigera*); lat.

7° 11' N., long. 15° 54' W. (*S. atlantica*); lat. 4° 26' S., long. 10° 18' E. (*S. pacifica*).

The above species are recorded from "near the surface" to a depth of 360 fath. (*S. RATTRAYI*).

Lanceola, Say, 1818, as defined by Bovallius.

BOVALLIUS: Gulf-stream (*L. pelagica*); North and South Atlantic (*L. Sayana*); Davis Strait (*L. serrata* and *L. Lovéni*); South tropical Atlantic (*L. felina*); Baffin's Bay, lat. 72° N. (*L. Clausi*).

STEBBING: Pacific, lat. 35° 41' N., long. 157° 42' E. (*L. pacifica*); lat. 35° 45' S., long. 18° 31' W. (*L. sp.*); lat. 37° 29' S., long. 83° 7' W. (*L. sp.*); off Banda Island (*L. sp.*); lat. 1° 47' N., long. 24° 26' W. (*L. æstiva*); lat. 42° 8' N., long. 63° 39' W. (*L. Suhmi*); lat. 50° 1' S., long. 123° 4' E. (*L. australis*).

For Mr. Stebbing's interesting remarks on distribution and depth see 'Challenger' Amphipoda, p. 1317. The specimens taken appear to have come from depths ranging from 360 fath. to 2300 fath.

NORMAN (Ann. & Mag. Nat. Hist., Jan. 1900): North Atlantic, lat. 56° 8', long. 13° 34' W. (*L. Sayana*); Faro Channel, in tow-net sunk 640 fath. (*L. Murrayi*).

Vibilia, H. Milne-Edwards, 1830.

BOVALLIUS: Seas of Asia (*V. Peroni*); Atlantic and Mediterranean (*V. Jeangerardi*); Java (*V. affinis*); South Atlantic, lat. 43° 30' S., long. 9° 50' W. (*V. macropis*); lat. 17° 30' S., long. 2° 30' W. (*V. gibbosa*); North Atlantic, tropical Atlantic (*V. robusta*); coast of Scotland (*V. borealis*); west coast of Greenland (*V. Kröyeri*); South Atlantic, Pacific (*V. longipes*); near the Powell Islands (*V. Edwardsi*); North and South Atlantic, Pacific, and Indian Oceans (*V. viatrix*); tropical Pacific (*V. gracilis*); tropical and South Atlantic (*V. ARMATA*); tropical Atlantic (*V. pyripes*).

STEBBING: lat. 25° 30' N., long. 138° E. (*V. propinqua*); South Atlantic (*V. Milnei*); lat. 37° 29' S., long. 27° 31' W. (*V. sp.*); Cape York (*V. viator*); lat. 48° 18' S., long. 130° 4' E. (*V. australis*); lat. 52° 4' S., long. 71° 22' E. (*V. antarctica*); lat. 52° 20' S., long. 72° 14' E. (*V. sp.*).

CHEVREUX: Mediterranean (*V. erratica*) and North Atlantic (*V. Jeangerardi*, *V. hirondelei*, *V. dentata*, and *V. grandicornis*), (Campagnes de 'l'Hirondelle').

BONNIER: Gulf of Gascony (*V. Bovallii*).

All the 'Challenger' specimens of which the depth is recorded were taken on the surface, as also were *V. erratica* and *V. Jeangerardi* by Chevreux.

GAMMARIDEA.

Lysianassidæ.

Cyphocaris, Boeck and Lütken.

This singular genus has been recorded from the west coast of Greenland (*C. ANONYX*, Boeck) by Hansen, and by Stebbing in the 'Challenger' Report from Tristan d'Acunha, lat. 32° 24' S., long. 13° 5' W., off west coast of South America, lat. 38° 7' S., long. 94° 4' W. (*C. micronyx*), and 400 miles north of the Sandwich Islands (*C. challenger*). As the latter author informs me that he has now merged *C. micronyx* in *C. ANONYX*, this species has a truly enormous range. The 'Challenger' specimens were taken at a depth of 1425 and 1500 fath. respectively. Also taken by the Prince of Monaco in lat. 47° 38' N., long. 22° 13' W., depth 1300 m. (Chevreux, Camp. de 'l'Hirondelle,' 1900, p. 165).

Orchomenopsis, G. O. Sars, 1895*.

This genus was separated by G. O. Sars from *Orchomene* on account of slight differences in structure. It includes two, and perhaps all three, of the 'Challenger' species, and one (*O. robusta*, Sars) from the coast of Norway in 100 fath. The localities of the 'Challenger' species are as follows:—South of Japan, lat. 26° 29' N., long. 137° 57' E., 2425 fath. (*O. musculosus*); east of Buenos Ayres, lat. 35° 39' S., long. 50° 47' W., 1900 fath. (*O. ABYSSORUM*); Kerguelen Island, Betsy Cove, surface, and off Cumberland Bay, 127 fath. (*O. excavatus*). *O. abyssorum* is also recorded by M. Chevreux from lat. 48° 24' N., long. 20° 38' W., depth 2200 m. (Camp. de 'l'Hirondelle,' p. 23).

LIST OF SPECIES.

ISOPODA.

Fam. Munnopsidæ.

? Genus MUNNOPSIS, M. Sars, 1860.

Munnopsis? *Murrayi*, sp. n. (male). (Pl. XVIII. figs. 1-6.)

Anterior division of the body little wider than and about the same length as the posterior.

* Since the above was written, the author has met with two new species in a collection made by Mr. Fougner during the 'Southern Cross' expedition to the Antarctic Seas in 1899-1900, and described in a paper read before the Linnean Society on Dec. 18, 1902. These are *O. nodimanus*, Cape Adare, lat. 71° 18' S., long. 170° 9' W., dredged in 26 fath., and *O. Rossi*, from lat. 78° 35' S., long. 164° 32' W., taken near the surface. M. Chevreux also has described (Bull. Soc. Zool. de France, 1903, tome xxviii. pp. 93-96) two new species from the N. Atlantic.

Head having a triangular projection, on which is a tubercle, behind the bases of the upper antennæ; these have the last joint of the peduncle more than twice as long as the penultimate. Lower antennæ wanting in all the specimens. Mandibles with a prominent molar expansion and divided cutting-edge as in *M. longicornis*, Hansen; palp very large and prominent, with a lamellar terminal joint. Maxillipedes with a prominent lobe on the outer margin of the inner plates; palp with the fourth joint large and rounded.

First body (mesosome) segment rather wider than any of the succeeding three; coxal plates rather large, widening distally, so as to conceal the ends of the segments. The first of the last three segments (metasome) with a large oval tubercle on each side of a central cleft; the two following segments widening successively and marked by a transverse division; the last has also a diagonal depression across each hinder angle. All the segments are rugose.

All the ambulatory legs are wanting except the first joints; these in the first pair of legs are twice as long and half as thick as those of the succeeding three pairs. The natatory legs have the fourth joint much expanded posteriorly and more than twice as large as the fifth joint, *which is furnished with a small dactylus*.

Telson cordate, with a blunt carina; margins smooth.

Uropods small and slender, 2-jointed, the second joint three times as long as the first.

As G. O. Sars has pointed out ('Crust. of Norway, Isopoda,' p. 133), *Munnopsis longicornis*, Hansen ('Isopoden &c. der Plankton Expedition,' p. 8, pl. ii. fig. 1), differs in the structure of the mandibles from the generic description, as does the present species. This also differs from both in the structure of the maxillipedes and in the swimming-legs being provided with a dactylus; so that doubtless a new genus is required for its reception. As, however, it is impossible to define a genus satisfactorily from imperfect specimens, M. Sars's genus must stand provisionally. Unfortunately it rarely happens that these Isopods are taken with their long and brittle appendages perfect.

Seven specimens, probably all males. Length 7 millim.

Net 4*a*, 1170 fath.; 4*c*, 920 fath.; 4*f*, 1275 fath.; 4*h*, 1470 fath.; 5*h*, 1410 fath. (2 specimens); 5*l*, 1710 fath.

The only other Isopods in the collection were a few Epicarid larvæ.

AMPHIPODA.

Tribe HYPERIIDEA.

Genus HYPERIA, Latreille.

Hyperia Latreillei, M.-Edw.

This species is now referred both by G. O. Sars and A. M. Norman to *H. galba* (Mont.).

One young. Length 3 millim. Net 5 d, 950 fath.

Genus HYPERIODES, Chevreux, 1900.

Hyperiodes longipes, Chev.* (Pl. XIX. figs. 7-13.)

Head very large, as long as the first five body-segments united, the frontal outline rather concave, the sides produced downwards in two lobes, of which the lower margin is truncate, with rounded angles. The eyes occupy nearly the whole upper part of the head, and consist of dark red transverse bands.

Mesosome shorter and rather narrower than the metasome, all the segments distinct except the first and second, which are dorsally united, the seventh the widest. Metasome deeper than mesosome, the third segment having the hinder angle bluntly rectangular.

Antennæ short and simple, the tips of the lower reaching just below the produced cephalic lobes.

The first and second gnathopods are almost alike, the second being slightly the larger; the first joint is broad and as long as all the remaining joints, the carpus is produced to about the middle of the propodos; dactylus rather long and slender.

The pereopoda are unusually long and slender for this genus; the first and second are about as long as the fifth, the dactyli long, slender, and slightly curved; the third and

* Since the above description was written, Mons. Chevreux has described the species under the above name in the 'Resultats des Campagnes scientifiques de l'Hirondelle,' fasc. xvi. 1900, p. 143, pl. xvii. fig. 2. The 'Oceana' specimens, however, differ in the form of the telson, which is bluntly triangular. The palp of the first maxillæ is also imperfectly figured, being well developed, with a truncate and spinous terminal margin. The inner plate is armed at the end with strong teeth and setæ, much as in *Hyperietta*, Bovallius, as figured by Stebbing under *H. dilatata* (Chall. Amph. pl. clxxi.). From this genus it differs only in being more laterally compressed. Chevreux's two specimens were taken in lat. 47° 38' N., long. 22° 14' W., in 1300 fath., and lat. 47° 43' N., long. 19° 30' W., in 751 fath., both in Sept. 1888.

fourth are about the same length and much longer than the fifth; the first joints of all are long and narrow, with parallel margins, those of the third and fourth are as long as the next three joints together and about equal to the fifth joint; all the dactyli rather long.

The peduncles of the third uropods are nearly four times as long as the rami, which are about equal to the telson.

The nearest allies of this species are *H. schizogeneios*, Stebbing, and *H. crucipes*, Bovallius; it differs from both in having only two of the mesosome segments coalesced and in the greater length of the peræopoda, the form of their first joint, &c. It is possible that *Lestrigonus rubescens*, Dana, may be the male of this species.

Two females with ova. Length 4.5 millim.

Net 6 a, 150 fath.; 6 f, 510 fath.

Parathemisto oblivia (Krøyer).

Several young, the largest being 7 millim. long.

Nets 1 a, 1 b, 1 c, surface to 50 fath.

This is a common species in the young state on the west coast of Ireland.

Phronima sedentaria, Forskål.

One female. Length 20 millim. Net 5 l, 1710 fath.

Phronima atlantica, Guérin-Ménéville.

One female. Length 12 millim. Net 4 e, 1170 fath.

One young. " 7 " " 2 f, 620 "

" " " 5 " " 2 d, 374 "

The last specimen agrees very nearly with *P. tenella*, Stebbing. All the above, including *P. tenella*, are referred by Chun to *P. sedentaria*. This author (Bibliotheca Zool. vol. vii. 1894-6, Heft xix. p. 110) has the following remarks:—"The young *Phronimas* leave the protecting 'house' at the beginning of summer and sink to great depths. They grow to a length of 10 mm., when the females, after obtaining a 'house' of *Pyrosoma*, *Salpa*, or *Siphonophora*, rise to the surface in the course of the winter. When sexually mature—in spring in the Mediterranean, but in January at the Canary Islands—the males also rise to the surface and visit the females in their 'houses,' reaching the length of 12 mm. and rapidly acquiring their perfect antennæ. They never attain the size of the females, which sometimes measure 40 mm."

It will be observed that the size of the 'Oceana' specimens increases with the depth, which would seem to indicate that in November the young were still descending. None of the specimens was provided with a "house."

Brachyscelus mediterraneus (Claus).

Six young, the largest 8 millim. long, from 650 fath. The type specimen measured $\frac{3}{4}$ inch.

Net 2 *a*, 270 fath.; 2 *g* (2 specimens), 650 fath.; 4 *h*, 1470 fath.; 5 *b*, 500 fath.; 6 *a*, 150 fath.

This species is considered by Canon A. M. Norman (Ann. & Mag. Nat. Hist. ser. 7, vol. v., Jan. 1900, p. 134) to be identical with *B. cruscolum*, Sp. Bate.

Scina Rattrayi, Stebbing.

Scina Rattrayi, Stebbing, Trans. Zool. Soc. London, 1895, vol. xiii. p. 358, pl. liii. A.

Several specimens, the largest being 4 millim. long, including the upper antennæ.

The specimen described by Mr. Stebbing (who has kindly verified these for me) was taken "from a depth of 360 fath. after 9 P.M." in lat. 1° 55' N., long. 5° 55' E. Its nearest ally is *S. Tullbergi* (Bovallius), taken off Cape Horn. It may be distinguished from the northern species as follows:—From *S. Sarsi* (Bov.) by the comparative shortness of its upper antennæ, and from *S. Clausii* (Bov.) and *S. borealis* (G. O. Sars) by the second joint of the third peræopods (fifth legs) being serrate on the *hind* margin only.

Nets 2 *f*, 4 *k*, 5 *b*, 5 *e*, 5 *h*, 5 *s*, 6 *f*, 6 *g*, 500-1670 fath.

Also taken by the Prince of Monaco in 1888 in lat. 47° 42' N., long. 19° 30' W. (Chevreux, Amphipodes de 'l'Hiron-delle,' p. 123), depth 781 m.

Scina marginata (Bov.).

One young, length including antennæ 3.5 millim.

Distinguished by the few teeth on the *front* margin of the stout second joint of the third peræopods and by the thick, "almost tumid" (Bov.), distal joints and short curved dactyli of the last two pairs.

Previously recorded only from Messina (since the above was written recorded by Chevreux, *l. c.*, from lat. 47° 38' N., long. 22° 13' W., depth 1300 m.).

Lanceola sp.

Two specimens too young for identification, viz. :—Net 5 *e*, 1070 fath., 6 millim. ; net 6 *g*, 560 fath., 4 millim.

Most of the species of this genus are very large ; those described by Bovallius range from 10–13 millim. (*L. felina*) to 42 millim. (*L. Sayana*). A species figured in the 'Challenger' Report from a drawing by Willemoes-Suhm is supposed to have been 70 millim. in length.

Vibilia armata, Bovallius.

Net 4 *b*, 790 fath. 1 specimen, 9 millim.
 „ 6 *f*, 510 „ 1 „ 9 „
 „ 4 *f*, 1275 „ 1 „ 3.5 „ Too young to be identified.

V. erratica, Chevreux, from the Mediterranean, is very near to this species, but has the last two segments of the urosome distinct, while in *V. armata* they are coalesced.

Tribe GAMMARIDEA.

Cyphocaris anonyx, Boeck. (Pl. XVIII. fig. 14.)

(= *C. micronyx*, Stebbing.)

Four specimens, of which one from 1300 fath. appears to be an adult male.

4 *k*, 1670 fath. 1 young.

5 *g*, 1300 fath. 1 adult male, 11 millim.

6 *f*, 510 fath. 2 young, 2½ and 3 millim.

There can, I think, be no doubt that Boeck overlooked the very small dactylos of the second gnathopods, the apparent absence of which gave rise to its specific name. The principal apparent difference between this species and *C. micronyx* is that the distal extremities of the first and second peræopods are somewhat more dilated in the latter.

Orchomenopsis abyssorum (Stebbing).

Three specimens, all females.

4 *j*, 1570 fath. 1.

5 *h*, 1410 fath. 1.

5 *k*, 1610 fath. 1.

I have to thank Mr. Stebbing for verifying this species and *Scina Rattrayi*.

Since the above was written, Fascicule xvi. of the Prince of

Monaco's 'Campagnes Scientifiques,' containing the Amphipoda taken by the yacht 'Hirondelle' in 1888, and worked out by Mons. E. Chevreux, has appeared. It is interesting to compare the extract given below, relating to neighbouring parts of the N. Atlantic, with the 'Oceana' results.

Station 253. Sept. 8. Lat. 47° 38' N., long. 22° 13' W.
Depth 1300 metres.

Cyphocaris micronyx, Steb.; *Scina marginata*, Bov.; *Scina incerta*, sp. n.; *Phronima atlantica*, Guérin; *Hyperia galba* (Mont.); *Hyperioides longipes*, gen. et sp. n.; *Euprimus macropus* (Guérin); *Brachyscelus mediterraneus* (Claus).

St. 256. Sept. 9. Lat. 48° 24' N., long. 20° 38' W.
Depth 2200 m.

Orchomenopsis abyssorum (Steb.); *Hyperia galba* (Mont.); *Hyperioides longipes*, Chev.; *Brachyscelus mediterraneus* (Claus).

St. 258. Sept. 10. Lat. 47° 42' N., long. 19° 30' W.
Depth 781 m.

Scina Rattrayi, Steb.; *Phronima atlantica* (Guérin); *Hyperia schizogeneios*, Steb.; *Hyperioides longipes*, Chev.; *Euprimno macropus* (Guérin).

EXPLANATION OF THE PLATES.

PLATE XVIII.

- Fig. 1. *Munnopsis?* *Murrayi*, sp. n. The male seen from above.
Fig. 2. Posterior lip.
Fig. 3. Maxillipedes seen from both sides.
Fig. 4. Pleopod. 4a. The end of the fifth joint and dactylus.
Fig. 5. End of the operculum.
Fig. 6. Uropod.
Fig. 14. *Cyphocaris anonyx*, Boeck. End of propodos of second gnathopod, showing the dactylus.

PLATE XIX.

- Fig. 7. *Hyperioides longipes*, Chevreux, ♀.
Fig. 8. First gnathopod.
Fig. 9. Second gnathopod.
Fig. 10. Telson and third uropods.
Fig. 11. First maxillæ.
Fig. 12. Ditto, showing palp from another side, the plate folded back.
Fig. 13. Second maxillæ.



