

XXIX.—A Month on the Trondhjem Fiord.

By the Rev. Canon NORMAN, M.A., D.C.L., F.R.S., &c.

[Continued from p. 164.]

[Plate XII.]

[THE reader is requested to make the following corrections in the preceding Table of Distribution :—

- P. 162, for *Heteromysis* read *Hemimysis*.
 for *Chiomysis* read *Heteromysis*.
 P. 163. The S in column 14 should be opposite *Eudorella truncatula*
 instead of *E. emarginata*.
 P. 164, column 13. Put N instead of P opposite *Campylaspis costata*.]

This Table of Distribution of the Higher Crustacea of Norway contains one hundred and seventy-eight species. The distribution of these species may be summed up as follows :—

Species which occur both to the north and to the south of Norway	90
Species known only to the north of Norway	19
Species known only to the south of Norway	104
Species here recorded only as Norwegian	25

 178

But of these last twenty-five species *Bythocaris Payeri*, Heller, has a wide distribution in the great depths of the cold area of the North Atlantic, and *Euphausia pellucida*, Dana, is an oceanic form with world-wide distribution; and although this species is not marked in the Mediterranean column, it should have been so, since *Euphausia Mülleri*, Claus, is a synonym.

Deducting these two species, we have twenty-three remaining which are as yet unknown beyond the Norwegian seas.

Of the 178 Norwegian species, 121 are known in British seas and 57 reach the Mediterranean, while 44 occur on the N.E. coast of North America. A study of the table will show that the species common to Norway and N.E. America are, with the exception of *Carcinus menas*, *Eupagurus Bernhardus*, and *Crangon vulgaris*, either Arctic or deep-water forms.

The Isopoda of Norway differ in general character from those of the British sea by the fact that the family Sphæromidæ is only represented by the single species *Limnoria lignorum*; this family is altogether unknown in the Arctic seas, and in Denmark only two forms occur, *Limnoria lignorum* and *Sphæroma rugicauda*. On the other hand, the

families Tanaidæ, Munnidæ, and Munnopsidæ are largely represented in Norway; the first of these has been little studied in our own seas, while the two latter families are lovers of a soft muddy bottom and, for the most part, of a considerable depth of water, conditions rarely met with on or off our coasts; but there can be no doubt that our fauna will hereafter be enriched by many additions in these three interesting groups.

The Norwegian seas are very rich in Amphipoda, and here again many groups are more largely represented than in British seas on account of the greater depth of water and the nature of the bottom of the fiords; but there can be no question that the much larger number of Amphipods known in Norway as compared with the British fauna is due in no small degree to the fact that the Norwegian Amphipoda have been more thoroughly studied than the British. The following is a comparative statement of the number of Amphipoda at present known in Norway, Denmark, Britain, and the Mediterranean; the species of Norway are from Sars and Boeck, those of Denmark are taken from Meinert's works, those of Britain are from my own computation (including some unrecorded species), those of the Mediterranean are on the authority of Claus, Della Valle, and Mayer.

	Norway.	Denmark.	Britain.	Mediterranean.
Hyperina	9	1	10	21
Gammarina	333	107	214	106
Caprellina	17 (?)	5	12	16
	<hr/> 359	<hr/> 113	<hr/> 236	<hr/> 143

When we pass to the consideration of the Entomostraca, we find that these, with the exception of one group, have been more studied and are better known in the British fauna and in that of the Mediterranean than in Scandinavia. With respect to Copepoda of the latter country the only papers we have are those of Boeck, published many years ago. The Ostracoda of the Norwegian seas have, however, been worked at both by Professor G. O. Sars and myself. One hundred and eighteen species of marine Ostracoda are now known from that coast * and one hundred and forty-six from our own †.

* Norman (A. M.), "Notes on the Marine Crustacea Ostracoda of Norway," *Ann. & Mag. Nat. Hist.* ser. 6, vol. vii. 1891, p. 108.

† Norman and Brady, "Mon. Marine and Freshwater Ostracoda of the North Atlantic and North-western Europe," Section L, Podocopa, *Trans. Roy. Dublin Soc.* ser. 2, vol. iv. 1889, p. 63. To the species of Podocopa there enumerated are added those of the other sections of the group.

BRACHYURA.

1. *Portunus depurator*, Linn.
One small specimen, Trondhjem.

ANOMURA.

2. *Eupagurus pubescens*, Kröyer.
Trondhjem and Rödberg.

3. *Galathea strigosa*, Linn.

Two young examples, Laminarian zone, Rödberg.

Professor M. Sars found this species as far north as the North Cape ('Oversigt over de i den Norsk-arctiske Region forekommende Krebsdyr,' 1858).

4. *Galathodes tridentatus*, Esmark.

? 1852. *Galathea serricornis*, Lovén, Öfv. Vet.-Akad. p. 22 (? junior).

1856. *Galathea tridentata*, Esmark, Skand. Naturf. Møte, p. 230.

1882. *Galathodes tridentata*, G. O. Sars, "Oversigt af Norges Crustaceer, I," Vidensk.-Selsk. Forhand. Christ. p. 43 (separate copy), pl. i. fig. 3.

On the precipices at Rödberg down to 300 fathoms, as well as in similar localities in Kors and Hardanger Fiords.

This species would seem to feed on *Lophohelia prolifera*. It is usually found clinging to that coral or met with in its immediate neighbourhood.

MACRURA.

5. *Calocaris Macandreae*, Bell.

In 150-300 fathoms, Trondhjem and Rödberg; also Oster Fiord, near Bergen, 400 fathoms, and off Batalden, near Florö, 200-300 fathoms.

6. *Cherophilus nanus*, Kröyer.

Trondhjem, 150 fathoms.

This is *Crangon bispinosus*, Westwood.

7. *Pontophilus*, sp.

I did not find any mature specimen of this genus, but an example occurred in the postlarval stage (see G. O. Sars, "Bidrag til Kundskaben om Decapodernes Forvandlinger, III. Fam. Crangonidae," Archiv f. Mathem. og Naturv. 1890, pl. iv. figs. 19, 20), in which the telson and second leg are as