BISCAYAN PLANKTON.

PART VIII.—THE CEPHALOPODA.

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(Communicated by Dr. G. HERBERT FOWLER, *F.L.S.*)

(With 3 Text-figures.)

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THE small collection of Cephalopods entrusted to me for examination by my friend Dr. Fowler consisted entirely of young specimens, many too young to enable the species to be determined with certainty, although the state of preservation was excellent.

Most of the examples I have submitted to my friend Dr. Pfeffer, of Hamburg, who has made a special study of these immature forms, and I am greatly indebted to him for giving me the benefit of his opinion.

The numbers preceded by "H" in square brackets refer to my own register.

ELEDONELLA sp.

Locality : 32 i, July 21, lat. 47° N., long. 7° 38' W.; depth, surface to 100 fathoms; temperature, 52° to 64° F.; one specimen [H 1066].

This specimen is undoubtedly the young of some species of *Eledonella* or possibly *Japetella*; the only noteworthy peculiarity it presents is that the arms of the second pair are a little longer than those of the third. The suckers and the circumoral lip are very dark, almost black. In the centre of the transparent arm is seen a slender black

Fig. 1.

thread, upon which is a fusiform swelling under each sucker (see fig. 1); this is presumably the nerve-cord with a series of ganglia.

The present specimen extends the distribution of the genus to the Eastern Atlantic;
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the previously recorded localities have been as follows :—North of New Guinea ('Challenger,' Station 220); off the Marshall Islands ('Albatross,' Station 220, 1900); in the Gulf of Panama ('Albatross,' Stations 3366, 3415, and 3420, 1891); off the New England Coast ('Albatross,' Station 2099, 1883).

Chun (Verh. deutsch. zool. Ges. vol. xii. pp. 162–182, 1902) has expressed the opinion that *Eledonella* and *Bolitæna* are synonymous, but, so far as I am aware, he has not published the grounds for this view.

ONYCHOTEUTHIS sp.

Locality: 31 b, July 20; lat. 47° 15' N., long. 7° 41' W.; depth, surface to 50 fathoms; temperature, 52° to 64° F.; two specimens [H 1064, 1065].

The appearance of the larger of these two specimens, which measures a little over 5 mm. in length, is shown in the accompanying figure (fig. 2). Of special interest is

Fig. 2.

the small size of the fin in these immature stages, to which attention has already been called by Pfeffer ("Synopsis cegopsid. Ceph.," Mitt. naturhist. Mus. Hamburg, vol. xvii. p. 159, 1900). The tentacles also are seen to be present only as minute rudiments, contrasting strongly with the more developed arms.

TELEOTEUTHIS CARIBBÆA (Lesueur).

Locality: 30 l, July 19; lat. 47° 14' N., long. 7° 58' W.; depth, surface to 50 fathoms; temperature, 52° to 64° F.; two specimens [H 1062, 1063].

This species appears to be one of the commonest and most widely distributed of all pelagic forms. It has been found pretty frequently both in the Atlantic and Pacific Oceans, but the records from the Mediterranean require confirmation.

A character often noticeable in the young stages is a pair of conspicuous chromatophores, which appear as elongated spots in a latero-ventral position halfway along the fin. These are not seen, however, in either of the examples now under notice; they are both very dark in colour, and perhaps the spots have been masked by a rearrangement of the chromatophores.

TELEOTEUTHIS sp.

Localities: 30 *b*, July 19; lat. 47° 14' N., long. 7° 58' W.; depth, surface to 25 fathoms; temperature, 54° to 64° F.; one specimen [H 1058].

35 *w*, July 24; lat. 47° 8' N., long. 7° 54' W.; depth, surface to 25 fathoms; temperature, 54° to 65° F.; one specimen [H 1070].

36 *k*, July 25; lat. 47° 3' N., long. 7° 55' W.; depth, surface to 300 fathoms; temperature, 51° to 66° F.; two specimens [H 1071, 1072].

DORATOPSIS sp.

Locality: 34 *f*, July 23; lat. 46° 43' N., long. 7° 15' W.; depth, 500 to 750 fathoms; temperature, 48° to 49° F.; one specimen [H 1069].

This specimen, which measures not quite 20 mm. in total length, has been identified by Dr. Pfeffer, who possesses a fine series of young forms belonging to this genus.

Fig. 3.

Although it was much distorted I have restored it to the best of my ability, and give an outline sketch (fig. 3), which shows some of its more striking characters. The body is swollen and barrel-shaped, whereas the smallest example which has hitherto been figured (Ficalbi, *Monit. Zool. Ital.* vol. x. 1899, p. 99) has the mantle tubular with almost parallel sides.

CRANCHIA MEGALOPS, Prosch.

Localities: 24 *d*, July 11; lat. 47° 5' N., long. 7° 45' W.; depth, surface to 100 fathoms; temperature, 52° to 63° F.; one specimen [H 1057].

30 *g*, July 19; lat. 47° 14' N., long. 7° 58' W.; depth, surface to 100 fathoms; temperature, 52° to 64° F.; three specimens [H 1059, 1060, 1061].

34 *b*, July 23; lat. 46° 43' N., long. 7° 15' W.; depth, surface to 100 fathoms; temperature, 52° to 65° F., one specimen [H 1067].

This species has been hitherto recorded from the neighbourhood of the Færoe Islands and Greenland; I am not acquainted with any records so far south as those here given. All the examples hitherto examined are very small, and it is highly probable that they are immature and that the fully developed form has still to be discovered.

CRANCHIIDARUM gen. et sp. ?

Locality: 34 *d*, July 23; lat. 46° 43' N., long. 7° 15' W.; depth, surface to 100 fathoms; temperature, 52° to 65° F.; one specimen [H 1068].

This is a small larval form measuring only about 3 mm. in total length; it is impossible to determine the genus to which it should be referred.

EMBRYO.

Locality: 32 *m*, July 21; lat. 47° 0' N., long. 7° 38' W.; depth 0 to 75 fathoms; temperature, 52° to 64° F.

An embryo with yolk-sac attached was brought from this locality.