

Notes and Memoranda.

Callionymus maculatus. *Bonap.* Since the species was added to the English fauna in the last number of this journal, three specimens have been taken in the neighbourhood of Plymouth. One of these lived for two months in the Aquarium, remaining for the most part half buried in fine gravel. It was only once observed to take a *Nereis diversicolor*, the favourite food, in our tanks, of *C. lyra*, but showed considerable liking for Gammarids.

Phrynorhombus unimaculatus. *Risso.* A male, measuring $4\frac{5}{8}$ inches, was taken four miles south of the Plymouth Mewstone on the 9th May, 1898. It appears to be the only specimen that has been taken near Plymouth since the Laboratory has been in existence.

Motella cimbria. *Linn.* A specimen taken from the stomach of a hake trawled in or off the Bristol Channel, was sent to the Laboratory on the 16th September, 1898. It measures 21.7 cm. ($8\frac{1}{2}$ in.) in total length, and differs from described members of the species in the great length of the first dorsal ray. The length of this structure is 5.2 cm., that of the head being 3.65 cm. I have since seen an Irish specimen with the first ray similarly prolonged.

E. W. L. H.

Sepia elegans. *d' Orb.* (Jatta, "Fauna u. Flora d. Golfes v. Neapel, Cefalopodi" = *S. biserialis*, Verany; Gwyn Jeffreys, Brit. Conch.). During the summer of last year (1897) this species was taken not infrequently on the trawling grounds inside the Eddystone. This year three examples have been brought to the Laboratory. The largest of these, measuring in length 7.5 cm., including the sessile arms, was obtained on the trawling ground off Plymouth, while the others were taken off Bolt Head ($3\frac{1}{2}$ m. S., 33 fms.).

Since there appears to be some confusion with regard to the species of this genus, especially in the use of the name *Sepia elegans*, it is necessary to state that our specimens agree with the figures and description of *S. elegans* given by Jatta in the Naples monograph (the shell in particular is characteristic). They also agree with Gwyn

Jeffreys' description of *S. biserialis*, Verany, which is considered by Jatta to be synonymous with *S. elegans*, d'Orb., as is also *S. rupellaria*, d'Orb., these two latter having no sufficiently important characters to entitle them to separate specific rank. On the other hand, the *Sepia elegans*, de Blainville, of Gwyn Jeffreys' Brit. Conch., is a distinct species equivalent to the *S. orbignyana*, Férussac. This, according to Jatta, is the *S. elegans* of Norman's Revision of the Brit. Moll. (*Ann. and Mag.*, 1890) also. Previous British records for our species are Polperro and Mawgan Porth in Cornwall, Swansea, North Coast of Ireland, and Northumberland. Apparently in some, if not most, cases dead shells only were obtained.

E. W. L. H. and W. I. B.

Mysis longicornis. *Milne Edwards.* This species, which we believe to be an addition to the known fauna of the Atlantic area, was found to be somewhat abundant in Start Bay, S. Devon, at the end of July last (1898). It was taken on fine gravel and sandy ground off Blackpool and Slapton Sands in from 5 to 8 fathoms, in company with *Mysidopsis gibbosa* and *M. Angusta*, these in comparatively small numbers, and single specimens of *Siriella armata*, and of a form approaching, though not agreeing exactly with, *S. Clausii*.

So far as we have been able to ascertain, *M. longicornis* has not previously been obtained outside the Mediterranean, and therein only at Naples (M. Edwards, G. O. Sars, &c.), and according to Carus (*Prod. Faunæ Mediterr.*), at Algiers (Lucas).

This species can hardly be assigned to any of the genera of Mysinae, as defined by Norman ("British Mysidæ," *Ann. and Mag.*, 1892). It would appear to come near to *Neomysis*, with which it agrees in having the third pair of pleopods in the male unmodified, and like the first, second, and fifth pairs differing in no material respect from those of the female.* Were Norman's definition of the sub-family strictly enforced, both would, as a matter of fact, be excluded from the Mysinae by this character.

Mysidopsis angusta. *G. O. Sars.* This species was found in Start Bay on the same ground as *Mysis longicornis* in July, 1898, as noted above. It was taken in the same locality in the early part of the summer of the previous year.

The finding of *Mysidopsis angusta* on the South Devon coast adds considerably to the known range of the species in North-Western European waters, where it had not previously been taken further south than the Dogger Bank (Scott, "Crustacea from the Dogger Bank,

* Compare the figures of Sars: *Middelhavets Mysider*, Pl. X., Fig. 13, and *Monograph over Mysider*, Pl. XXXIV., Fig. 17.

collected by Ernest W. L. Holt," *Ann. and Mag.*, 1894). It was, however, known to occur at Naples (G. O. Sars, *Middelhavets Mysider*).

We hope to prepare a further publication on the Schizopoda of the Plymouth district shortly.

NOTE.—Since the above was written we have found that *Mysidopsis angusta* is recorded from Valencia Harbour, on the west coast of Ireland, by A. O. Walker. (*Trans. Liverpool Biol. Soc.* xii. 1898, p. 164.)

E. W. L. H. and W. I. B.

Malformation of the Mouth in the Common Sea-Bream.—

Yarrell has published in his work on British Fishes (vol. i., p. 110) a sketch of Couch's, which represents an abnormal condition of the mouth in the Common Sea-Bream (*Sparus centrodontus*), caused, according to Yarrell, by the "want of intermaxillary bones." The effect is to give the fish a characteristic "short-nosed" appearance, and to cause the lower jaw to protrude considerably in front of the head. At the same time the mouth is reduced to a small tubular orifice, which leaves the anterior half of the lower jaws permanently exposed. Mr. Dunn, of Mevagissey, recently forwarded to the Laboratory a Bream which exhibited this same abnormality. It was caught in a seine at Mevagissey on September 30th, and in all other respects was in good condition. Its length, from the tip of the lower jaw to the fork of the tail, is $9\frac{1}{2}$ inches; its maximum depth, $3\frac{1}{4}$ inches. The puzzle propounded by Mr. Dunn was how a fish with such a mouth could manage to eat anything, especially as in his specimen the aperture of the mouth is reduced to an even greater extent than in Couch's, the fleshy cheek and nasal membranes having grown forwards and downwards, so as to leave only the teeth on the anterior extremity of the lower jaw exposed, the lateral teeth being completely covered. The aperture of the mouth is spoon-shaped, and measures $\frac{1}{4}$ inch in long diameter, and slightly more than $\frac{1}{8}$ inch across. It is quite incapable of closure or of expansion. As I had seen a similar "short-nosed" Bream at Plymouth earlier in the summer, it would appear that this extraordinary abnormality is curiously common in this species and in this locality—a matter which seemed to merit enquiry. I have, therefore, carefully compared Mr. Dunn's specimen with a normal Bream, and, with Mr. Dunn's assistance, am able, I think, to offer a complete explanation.

The stomach of the abnormal fish was greatly distended with food, which consisted principally of pieces of green algæ, both *Ulva* and *Enteromorpha*, among which were to be found a small number of

Amphipod Crustaceans and the late larva of a shrimp or prawn, which was too much digested to admit of closer identification. The stomach also contained, remarkably enough, the cleanly excised stomach of another fish, which contained Copepods and other small plankton organisms in a sufficiently fresh state to admit of easy identification. The stomach was clearly that of a Clupeoid, with a characteristic tough, gizzard-like pyloric portion, and it is, in fact, the stomach of a pilchard, as I have found by comparison. Mr. Dunn tells me that, along with the abnormal Bream, there were taken in the seine about a dozen other Bream, about 30 Red Mulletts, a few flat-fishes, and about 3000 pilchards. He says that the fishermen were very anxious to see if the pilchards were fat or not, and that, in order to see their condition, the men may have unmeshed and opened one before tucking the seine, and thrown its stomach in the sea. There can be no doubt that this explanation is correct, but it is curious that this bit of jetsam should have fallen to the lot of the fish which was worst provided with organs of prehension. Although, however, the abnormality described undoubtedly deprives the fish of all power of using its teeth, it does not affect its powers of suction; and, as observations in the Aquarium have shown that this means of catching small prey is very commonly employed by fishes, it is no doubt by this means that the abnormal Bream succeeded in securing its supply of Amphipods and other booty.

As regards the structure of the abnormal mouth, Yarrell is right in attributing its main peculiarity to the absence of the intermaxillary (or premaxillary) bone. But in the specimen examined by me this is not the only defect, for one of the maxillary bones, viz., the right, is also wanting, while the left persists. This asymmetry in the abnormality suggests the result of injury rather than a congenital malformation, and confirms a view as to the origin of the abnormality which has been communicated to me in a letter from Mr. Dunn. I will quote his remarks *verbatim* :—

“It is known to our people, when they anchor on certain high rocks, that the Sea Bream, in all its stages, is the most pertinacious, persistent, and obdurate enemy that our Pollack fishers have, never leaving the bait rest one moment, if the Pollack is not in the immediate neighbourhood of the end of the line. This vexes the fisherman very much, and when he feels them tearing and mangling his bait, and making it unfit for Pollack food, in his excitement he often jerks the line with all the might of his arm. Sometimes one of the batch (for there are generally several there) will be hooked on the outside, but if hooked on the top of the mouth his top jaw is sure to be pulled away. This I have seen done more than once.”

Mr. Dunn adds that the specimen forwarded to us was by no means unique, as similar ones occur at Mevagissey from time to time, one of which, caught in 1896, he still preserves. He concludes that the deformity is caused by the fishermen in the above-mentioned way, the injury to the mouth being gradually repaired, although its structure is permanently modified, by the forward growth of the soft cheek tissues, as already described. My observations entirely support this view of the origin of the abnormality.

There is one point to which I will draw attention in conclusion. Hitherto, to the best of my knowledge, this deformity has not been recorded as occurring elsewhere than on the Cornish coast. I should be glad, therefore, if fishermen and sea-anglers generally would be good enough to forward to the Director of this Laboratory any similarly abnormal specimens of the Sea Bream which they may come across, in order that the distribution of the abnormality may be recorded. It would appear to be possible to make use of the facts as evidence in connection with the winter movements of the fish, especially if such specimens should be captured in the early part of the season. In such a case the injury must have been produced in the preceding season, before the winter migration.

WALTER GARSTANG.