Notes and Memoranda.

Aphia pellucida. *Nardo.* This species has been hitherto known in the Plymouth district from a single example taken at the surface, south of the Mewstone (*cf.* Cunningham, vol. iii. p. 166). During the present year it has proved to be rather abundant in the estuarine waters, and has also been taken at sea. The following records may be cited:

Lynher River. 14th April. "Deep water" above Waterlake to Anthony passage. More than twenty specimens altogether; most abundant towards the upper part of the area named, where they occurred in company with young herring of similar size and translucency. No large and fully differentiated males were taken on this occasion.

Tamar River. 18th May. Kiln Bay. Two specimens, large male and half grown.

Cawsand Bay. 9th June. Zostera beds. A large male.—E. W. L. H.

Cantharus lineatus. *Mont.* An example, 6¼ inches long, was taken in the seine on the 2nd July, 1897, at the junction of the Tamar and Lynher rivers, *i.e.*, at the upper end of the Hamoaze. Couch remarks that this fish sometimes enters harbours, but I believe it has not been previously observed to ascend estuaries on our coasts. Small examples, such as the present, seem to be of rare occurrence.

E. W. L. H.

Gobius Jeffreysii. *Günther.* (*G. quadrimaculatus.* Day, *nec auct.*). This goby has been recorded from Norway, the Faröe channel, the Hebrides, the Clyde estuary, and the south-west of Ireland. Its range may now be extended to the English Channel, owing to the capture of six specimens, of adult size, in about nineteen fathoms, south of the Plymouth Mewstone, on 30th March, 1897. It is probably common enough in this district, and may have escaped attention partly by its deep-water habitat, and partly from a certain resemblance which it bears to *G. minutus.*—E. W. L. H.

Arnoglossus Grohmanni. *Bonaparte.* A fine male of this species was trawled south of the Plymouth Mewstone on the 30th March,

1897. Two females were trawled in the "Silver Pit" in Gerrans Bay, Falmouth, on the 8th July, 1897. The latter were both full of spawn, but the ova which were exuded on pressure from one of them proved to be not quite ripe. At least three examples have previously been taken by the Laboratory boats in the neighbourhood of Plymouth, and there can be no doubt that the species is a regular, if somewhat rare, member of the local fauna. One of the specimens, a female, came on board in an unusually perfect condition, and I was able to note that the dark markings on the ocular side exhibited the purplish metallic tinge best described (as by Valenciennes in Pomatomus) as *gorge de pigeon*. Another feature of interest is the excessive development of the membrane of the elongated second dorsal ray in one of the females. This feature is not without importance in a due appreciation of the secondary sexual character, and I hope soon to have an opportunity of discussing it at greater length.—E. W. L. H.

Callionymus maculatus. *Bonaparte.* This dragonet must in future be included in the English fish-fauna, since a fully differentiated male was trawled in Falmouth Bay on the 10th July, 1897, at a depth of 30 to 35 fathoms. In British waters it is already known from the Hebrides and Clyde Estuary (Günther) and from the west coast of Ireland (Holt and Calderwood). Other North Atlantic records are from Scandinavia (Fries and Ekström, Lilljeborg, Smitt) and Denmark (Kröyer). Moreau knew of no instance of its occurrence on the Atlantic coasts of France, but it has long been known as common in the Mediterranean.

It is quite possible that the spotted dragonet is fairly common in our seas. It is a small species, and in the North Atlantic does not come into very shallow water. In consequence it is seldom within the reach of the fishing apparatus at a naturalist's disposal. Professional trawlers may probably see it often enough, but cannot be expected to distinguish it from the common dragonet, and in any case would shovel it overboard as soon as possible, since dragonets are credited with toxic properties, which, as a matter of fact, they do not possess.

In the Mediterranean all fish, however small, appear to be saleable. Hence the fishermen use nets of the finest mesh, and the ichthyologist can acquaint himself with the smallest species by simply overhauling the fishmonger's stores. It is therefore no matter for surprise that species which have only recently been added to our list have long been well known to Mediterranean naturalists.—E. W. L. H.

Muræna helena. *Linn.* A fine specimen was brought to the Laboratory on March 3rd, 1897, with the information that it was trawled off the Eddystone, and was just alive when brought on deck. It measured 44·6 inches, or 113·4 cm., and proved to be a male with ripe testes, the milt readily exuding on pressure. The spermatozoa are rather large, but were not measured.

In view of the known existence of sexual dimorphism in the family, the following measurements may be of interest:—

Total length	113·4 cm.
Snout to anus	54·2 „
„ „ gill opening	14 „
„ „ angle of jaw	6 „
„ „ eye	3 „
Length of „	·8 „
Interorbital space (horizontal)	1·9 „
Greatest girth (at gill opening)	26·8 „
Girth in front of anus	23·6 „

In colour the specimen resembled such Mediterranean forms as I have seen, the orange of the anterior ventral region being much less vivid and less extensive than in Couch's figure. The whole body was very soft and flabby, and appeared distended, as though the tissues were undergoing mucoid or colloid degeneration, but such proved to be not the case. The marginal fins were almost entirely masked by the skin and body tissues, the anal, in particular, so much so as not to reach the general ventral surface level. The skin of the abdomen was exceedingly tough, and about ·5 cm. thick. It consisted of an outer white layer, hard and consistent, and a much thicker inner portion, somewhat gelatinous in character. The testis was long and band-like, somewhat crenulate behind. It terminated a little behind the vent posteriorly, extending forward at least half-way along the abdominal cavity. A round wound, about two inches in diameter, and probably caused by a dog-fish, was present on the left side of the tail, involving the loss of the skin and underlying muscles.

Only two records of the occurrence of this fish in British waters have come under my notice, viz., from Polperro and Fowey (Couch). The only specimen measured was just two inches shorter than the Plymouth example.—E. W. L. H.