

## On the Occurrence of large Numbers of Larval Herring at the Surface.

A Letter from

Mr. Matthias Dunn.

“MEVAGISSEY, 26th January, 1898.

“It may interest you to know that on Friday, 14th January, the weather being very fine, and the wind from the S.E., as the fishing-boat *Sea Belle* (Mr. Blamey, master), was proceeding to the pilchard ground some four or five miles south of the Deadman headland, when about two miles from land they fell in with masses of muddy brown matter in strings, some of which were three or four hundred yards long and from two to seven feet wide, floating quite on the surface. They had not proceeded far along these lanes or path-like forms on the sea before they observed that pilchards were feeding on them ravenously; so they tacked their boat among them for a mile or more, and the further they went the more abundant were the pilchards. About four miles from land and in thirty fathoms of water the anxious gulls indicated the outmost limit of these strangely coloured bands, and here the pilchards were the most plentiful, almost rabid in their mad rush on the lessening streaks, causing the water to boil and whirl violently. Certainly some of the shoals of pilchards could not have had less than thirty to sixty thousand fish in them, for they coloured the water a dark red when concentrated on the brown matter.

“Of course our fishermen expected a more than ordinary catch of pilchards when setting their nets; but, strange to tell, with the decline of the light, having fed to repletion, they sank down below the nets, and the catch was a small one, amounting to some two or three thousand fish.

“Mr. Blamey, being anxious to know what the pilchards had been so fond of, brought me in a quantity of this floating matter, which proved to be young herrings in their first stage, with the yolk still large. In the bucket they were quite transparent, although, as already stated, of a decided brown colour when packed together in millions, and crowding in long lanes. Several other of our fishermen, although some miles from the *Sea Belle*, saw these young herrings with pilchards feeding on them under like conditions.

“MATTHIAS DUNN.”

Mr. Dunn's letter requires no introduction ; I have merely to say that some well-preserved material forwarded to me proves the correctness of his identification. The larval herring are at most a few days old, some appearing to be quite recently hatched. Mr. Dunn also sent, at my request, some pilchards taken about the same place a few days later. This fish decomposes very rapidly, and in any case larval herring would be hardly recognisable after being subjected a few hours to the action of the gastric secretions. Though I found no larvæ, the stomach of one pilchard contained unmistakable herring ova, some of which contained far advanced embryos. The fish must therefore have been feeding on the herring spawn at the bottom, a habit of the pilchard previously unknown, at any rate to myself. I do not know of any previous record of the presence of such enormous numbers of very early herring larvæ at the surface, nor of their serving as food to the pilchard. Considering the importance of both species, Mr. Dunn's evidence is most valuable.

E. W. L. H.