R. E. SAVAGE. The Plankton of a Herring Ground. Ministry of Agriculture and Fisheries. Fishery Investigations. Ser. II. Vol. IX. No. 1. 1926.

In this paper Mr. SAVAGE gives an account of an investigation with Nansen nets (horizontal, surface, midwater, and bottom hauls) of the plankton of an area off the coast of Northumberland, in July 1922, in an attempt to discover the cause of failure of the herring fishing in that locality.

The plankton on the fishing grounds consisted mainly of Copepoda the predominant species being *Temora longicornis*, with over 63 percent by number of the Copepoda, *Calanus finmarchicus* being next with over 18 per cent. Other species in evidence were *Sagitta*, *Limacina*, *Oikopleura* and *Nyctiphanes Couchi*, which was present in numbers which must be regarded as considerable for townet collections. Larval Decapods, which were plentiful on the shallow water stations between Lowestoft and the fishing grounds, were comparatively scarce on the grounds. The fauna of the grounds in its general composition agreed very well with that recorded by HARDY from the stomachs of North Sea herring during June and July.

Not much light is thrown on the main object of the investigation, namely the cause of the poor fishing, owing no doubt to lack of information as to the normal conditions. It is suggested however that the scarcity of the Copepod plankton may have been the reason, or possibly restricted vertical migration, the herring not rising into the upper layers in which the plankton was poor.

Some interesting tables have been compiled showing the differences of distribution of the plankton in the different layers of water during the hours of night and darkness. Some of the Copepoda gave clear indications of vertical movements, e. g. *Temora*, which was most plentiful at the bottom during the day and moved upwards to midwater and, to a small extent, to the surface during the night. *Calanus* which was also more plentiful at the bottom by day doubled its numbers at midwater during the night without any noticeable increase at the surface, and *Pseudocalanus*, also a bottom form by day, became definitely most abundant at the surface by night. The author compares his results with those recorded from off Plymouth by RUSSELL (in a paper reviewed in Vol. 1 No. 1 of this Journal) pointing out some apparent discrepancies which he, rightly no doubt, puts down to the want of sufficient data.

A note on the change of colour of the plankton from red through pink to white, on a line of stations running eastwards from the fishing grounds, while the composition of the plankton remained the same suggests a subject for investigation which might give interesting results.

G. P. F.

J. PAVILLARD. Report on the Danish Oceanographical Expeditions 1908—1910 to the Mediterranean and adjacent seas. Vol. II. J. 4. *Bacillariales*. With 116 text-figures. Copenhagen. Dec. 15. 1925.

This is an important contribution to our knowledge of the Diatom Flora of the Mediterranean region. Though chiefly a taxonomic study, based on the examination of over one hundred and fifty samples obtained