confined to the upper 20 m. In the region west of Bornholm the deepest waterlayer (45—50 m.) is also rich in diatoms. The phenomenon is explained in this way, that the heavy bottomwater, highly populated by diatoms, had recently penetrated from Kattegat into the Baltic. In this water with a rather high salinity lives a special group of diatoms (*Chaetoceras decipiens* etc.) which need a salinity of at least 12 ‰. On the whole the author endeavours to state in what degree the distribution of the different kinds of diatoms depends upon the physical conditions in the water and he gives many interesting details on this matter. For the eastern part of the Baltic (salinity 8 ‰) several Thalassiosira-species were characteristic.

Dr. MIELCK gives reports on the distribution of macroplankton (fish-eggs and fish-larvae included). The investigations of the eggs and larvae are of great interest. In order to obtain reliable determinations in such cases where the age of the eggs was not sufficient, eggs caught were placed in glasses for further development and the ripe eggs of fishes caught were fertilized and left also to develop in glasses for comparison.

He shows that some flounders (*Pleuronectes flesus*) have large eggs floating in water of a salinity of at least 10 ‰ and other flounders have small eggs which develop on the bottom in shallower water with lower salinity. He has even at the same place, the Middlebank, caught one flounder with small ripe eggs (diameter 1,0—1.1 mm.) and another one with large eggs (diameter 1.23—1.48 mm.). At most of the stations he found flounder-eggs, with the exception of the stations in the northern part of the middle Baltic and in the water west of Gotland, where no eggs of flounders were caught. The absence of floating eggs in this region may in my opinion be explained by the fact that, as the Swedish investigations have shown, the principal spawning at this place occurs in May. It is also likely, that the flounder in this region has eggs which do not float. The stock of flounder is here at any rate very rich.

Dr. MIELCK also gives many valuable details as to the eggs and larvae of plaice, cod, common dab, herring and sprat.

Dr. STRODTMANN gives an account of the fishery investigations during the cruise. He gives many interesting facts, and establishes the increasing rate of growth of flatfishes; this increase is in his opinion caused not only by the fishing, but also by the changes in the hydrographic conditions, which have taken place during the last years in the southern Baltic.

Dr. A. HAGMEIER writes a short report on the bottomfauna and Dr. H. HERTLING on the food of fishes. K. A. ANDERSSON.

HERBERT HEIDRICH. Die Bedeutung der Scholle für die Plattfischfischerei in der Mittleren Ostsee. — Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung. Neue Folge, Band II, Heft 3, 1926, (48 pages, 16 tables, 5 figures).

Sufficiently detailed statistics from German quarters of the flatfish fishing in the mid-Baltic Sea have not been available for many years, and in order to procure an up-to-date basis for such statistics for use in connection with fishery-biological researches Dr. HEIDRICH, in 1924 and 1925,

has collected comprehensive information to throw light on the importance of, more especially, plaice in the flatfish fishing in this area, this information having been obtained at different harbours along the German Baltic shore. From his material he has arrived at the result that the plaice plays a far greater part than hitherto observed; the latest investigations concerning this question were made by HENKING und FISCHER: (Die Scholle und Flunder im Ostseegebiet, Berlin 1912).

The westernmost harbour examined is Sassnitz; for this harbour the catch of plaice, flounders and dabs during the year from 1st June 1924 to 31st May 1925 amounted to 2500 tons. Of this quantity 49 per cent., or approximately 1200 tons, were plaice, 33 per cent. flounders and 18 per cent. dabs; the author states, however, that market conditions and the like may contribute towards making the percentage catch of plaice so high, as compared with dabs and flounders. In this way Sassnitz has become the most important centre, not only of the flatfish fishing, but also of the plaice fishing along the German Baltic shore, both east and west of Darss.

HEIDRICH'S observations in Swinemünde Bay are rather scanty; but they show, after all, that the flounder preponderates by far, both with regard to number and even more by weight. Out of six catches examined in June 1924 plaice amounted to only 13 per cent. numerically and 11 per cent. by weight of the dabs, plaice and flounders landed. The importance of plaice in the fishing south of Oder Bank is, then, rather small, although not quite inconsiderable. Farther east the flatfish fishing has been investigated from Kolberg, which is a centre for flounder fishing in the Baltic Sea. Large catches of flounders are landed here: approximately 56 per cent. of the total catch of plaice, flounders and dabs, this total being 1500 tons for the year examined — 1st June 1924 to 31st May 1925; the percentage of plaice in this in itself large yield is, however, as great as 29 per cent.

The easternmost place examined is Rügenwaldermünde; the investigation made here with regard to the composition of the total catch only represents the month of June 1925. Plaice is also here an important part of the catch of flatfish, amounting to 19 per cent. of the weight of plaice, flounders and dabs landed.

Information is further given of the back-Pomeranian fishermen's profit from their deepsea fishing near Bornholm which they commenced in the spring 1925; here the plaice fishing amounts to approximately 30 per cent. of the catch and the largest catch occurs in March and April.

Finally the author gives a summary of the yield of the plaice fishing in the Baltic before and after the Great War.

In the first place the author tries to estimate the yield of the plaice fishing along the Pomeranian shore and Rügen; the basis for a reasonably accurate estimate is lacking, but on the strength of information from the different fishing grounds, such as Sassnitz, from which harbour alone a catch of some 1250 tons has been made, he estimates the yield to be rather more than 2000 tons for the year 1924—25.

He then demonstrates very well, by means of a statistical table, how the German plaice fishing formerly had its centre in the western part of the Baltic Sea, in Kiel Bay, and how this centre since 1913 has moved eastwards and is now at Sassnitz.

But when the author then tries to demonstrate, by means of statistics, that a similar development of the plaice fishing from the Danish side, east of the line Gjedser-Darss, had already commenced before the Great War it is to be regretted that the statistical material on the strength of which he forms this opinion is erroneous; it originates from Bulletin Statistique, in which by mistake the Danish fishing in the western part of the Baltic Sea (west of Gjedser-Darss) has been included under the fishing in the eastern part of the Baltic Sea (east of Gjedser-Darss) since 1912, inclusive, while nothing similar has been done with the German fishing. The result is that the Danish plaice fishing in the Baltic Sea proper already shows in 1912 a tremendous rise which is without foundation in actual fact. The development of the Danish plaice fishing in the Baltic Sea proper has, indeed, moved fairly parallel to the German, inasmusch as not until 1919 did the Danish catch exceed 100 tons, as against only about 30 to 40 tons in each of the previous 7 years. It reached a temporary maximum in 1924 with 2009 tons (Cf. Fiskeriberetning for 1909—1925, Copenhagen 1910—1926).

The author more especially seeks the cause of the augmented expansion of the plaice fishing during recent years in the circumstance that the fishing of recent years moves farther and farther out from the shoal water along the shore.

It is to be hoped that statistics of similar nature may be collected yearly in future, so that a solid basis may be at our disposal for the measures to be taken (new size-limits, etc.) with regard to the most economical exploitation of the stock of plaice in the Baltic Sea proper. A. F. B.

BIRGITHE RUUD. Quantitative Investigations of Plankton at Lofoten, March—April, 1922—1924. Preliminary Report. Report on Norwegian Fishery and Marine Investigations, Vol. III, No. 7. Bergen 1926.

Coastal waters are richer in diatom species than the open sea, owing to the nutritive substances brought down from land by river water. Off the Norwegian coast there is a short period in spring when a great quantity of water enters the sea as a result of the melting of the snow on land, and there is transported with it nutritive materials as in the case of river water. The spring flowering of diatoms does not take place here until after the influx of the snow water, and the latter is considered by GRAN to be the cause of the former. Miss RUUD, in this preliminary report, gives the abridged results of a number of examinations of plankton samples collected in the Vest Fjord at Lofoten, during March and April, in the years 1922, 3, 4. Unfortunately, the collections did not cover the whole period of the spring flowering in any one year, but the results obtained support GRAN's conclusions.

The melting of the snow begins towards the end of March but may be delayed until early April — depending upon land temperature — and the spring flowering may be early or late in consequence; this has an important bearing on the chances of survival of the newly-hatched cod — upon which this work is concentrated — for, unless hatching coincides with an abun-