

and CHOUCHAK's reagent, and as it takes no account of the arsenite, originally present in the water, but oxidised during the course of the analysis and possibly co-precipitated with phosphate. The authors record some experiments which seem to support this criticism, if it be assumed that MATTHEWS' results were obtained by precipitation of a solution "not actually warmed, but probably warm from its previous treatment".

They point out that RABEN's results, which are higher than those found by workers in this country, are probably vitiated by the inclusion of arsenate with the ammonium phosphomolybdate.

They make the following statement in the Summary:— (3) "Arsenic in sea-water exists mainly in the form of arsenite. The arsenate present, if any, has hitherto been included in the results obtained for phosphate".

The presence of arsenites in sea-water would explain the increase, after oxidation, of substances reacting like phosphate in these tests; but there is no information available at present to show to what extent the presence of oxidisable arsenic or of oxidisable phosphorus accounts for the increase.

In view of the interest taken in the natural occurrence of such a potent substance as arsenic in any of its combinations, a systematic survey of the arsenic content of sea-water throughout the year is desirable. It would add much to the value of such an enquiry if the method of differentiating arsenite from arsenate when present in minute proportions in sea-water could be brought to a still greater state of perfection. The difficulties in making such a discrimination are appreciated, in view of the minute quantities present and the alteration in degree of oxidation of arsenic in the presence of organisms.

F. S. A.

S. STRODTMANN and others. Die Untersuchungsfahrt des Poseidon in der Ostsee im Frühjahr 1925 (vorläufige Mitteilung). Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung. Neue Folge, Band II. Berlin 1926.

This paper gives preliminary reports on the results obtained during the cruise with the German exploring steamship Poseidon in April 1925 in the southern and middle part of the Baltic. The leader of the investigations was Dr. S. STRODTMANN and accompanying him was a staff of seven scientific men. The cruise started from the Kiel Canal and went around the islands Gotland and Bornholm and back to the Kiel Canal.

An important work has obviously been carried out on the expedition as regards hydrography, plankton and fisheries.

Dr. B. SCHULZ deals with the hydrographic work and his observations seem generally to confirm previous statements on the distribution of temperature, salinity and gas content. A series of current measurements in different depths were carried out between the Stolpe and Oder banks.

Dr. W. MIELCK and Dr. A. WULFF were responsible for the plankton investigations during the cruise. Dr. WULFF gives two reports on the distribution and quantity of vegetable plankton.

In the deep region east and north of Gotland the diatoms are nearly

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,