Scientific Work of the Fishery Board for Scotland.[1]

AMONGST the points of scientific interest in the report for 1923 of the Fishery Board for Scotland are the facts pertaining to the continued abundance of all kinds of fishes, swarms of small haddocks especially being noted. Thus the total capture was little short of that in 1919, though exceeded by that in 1920 when the rush of boats was at its height. Herrings show no sign of diminution even under the unfavourable conditions of capture, the returns much exceeding those of the previous year, and almost reaching those of 1913.

The work of the scientific staff includes a paper of special interest by H. Thompson on "Problems in Haddock Biology," which has already been noticed in NATURE (August 30, p. 333).

Alex. Bowman treats of Arnoglossus and especially of what he thinks a post-larval *A. imperialis* (with a coloured figure). He remarks that *A. laterna* has a similar distribution to the sole (*Solea vulgaris*), and asks what are the factors which have prevented its establishment on the East Coast of Scotland by Nature or by transplantation. The sole has always, however, occurred sparingly on the East Coast in such bays as St. Andrews, and the transplantation of about 600 from Scarborough to this bay has had little effect on its abundance. He points out that other species of Arnoglossus enter by the Strait of Dover and reach the Skager Rack and the Cattegat, whereas he thinks *A. imperialis* must have reached the northern North Sea (where 3 young specimens were found) from the Atlantic, and that they do not survive. Possibly investigations both of the life-histories of the several species and of the various currents may afford further information. The efforts by the same author to locate the areas in which the herring spawn by the capture of what he terms "spawny" haddocks which "are well fed and plump of form, and have a characteristic bloom on the epiderm which masks the black pigment," seems to be somewhat far-fetched, for, whilst no less than 80 boxes of large haddocks may be caught where the herrings spawn, no more "bloom" occurs on those with their stomachs full of ova than on those caught by the liners on other grounds. Again the cod, which feeds on the ova of the herring no less greedily than the haddock and even scoops up quantities of gravel with this food, presents no external change. No doubt such investigations are useful on unknown ground—though the external changes are more or less imaginary.

In a careful contribution on the use of the Petersen grab, A. C. Stephen perhaps makes too much of this instrument, which, though a useful adjunct to other methods of ascertaining the fauna of the sea-bottom, such as the dredge and the trawl, falls far short of the revelation a single storm will disclose on the beach. Not all the elaborate calculations of this and that species per square yard brought up by the grab will add more to our knowledge than the storm. It is curious that neither Pecten nor Nephrops (the rich food of the cod) seems to have come in the way of this instrument in the area of the Firth of Forth.

An interesting digest of the summer herring fishery of 1922 is made by H. Wood, whose observations and the accompanying map point to the occurrence of shoals in the same areas from June to September, the shoals perhaps differing in their composition, but still affording good catches. He found that the northern large herrings spawned before the southern, and he makes remarks on the spawning areas and the times of spawning, an intensive period being the end of August.

An elaborate and interesting paper is that by Prof. D'Arcy Thompson on the trawling statistics of Aberdeen from 1917 to 1921, in continuation of that issued in 1917, the period comprising two of the War years and three of unusual activity. These statistics again emphasise the fact that the old East Coast fishing grounds are as productive as formerly, the value of the catches being more than doubled, and this in face of the usual pessimistic views of the sea-fisheries. Whilst the post-War catches were much above the average, it is noteworthy that in 1917 the captures of codlings rose considerably, indeed were greater than in any previous year, and continued at a high level until 1920. Cod were much in the same condition. Haddocks, which had been rather scarce in 1914 and 1915, went beyond pre-War levels in 1916 and continued to increase until 1919, the average per voyage being nearly four times that of 1913, and, though diminished in 1920 and 1921, were still above pre-War catches. The advocates for accumulation during the War would point to this as proof of their theory, but such irregularities have often occurred previously and will occur in the future.

An important addition to the scientific equipment of the Fishery Board is the new Research Laboratory, a brick building of one story, with various rooms for the staff, besides a museum and library. It is within easy reach of the Bay of Nigg and Torry Harbour, Aberdeen. The Fishery Board apparently at present assumes responsibility for these researches, which do it credit, but perhaps in future it would be well if, as in the case of the Royal Society, the caution were prefixed that the Board does not accept responsibility for the views of the authors. W. C. MCINTOSH.

[1] Forty-second Annual Report, Fishery Board for Scotland, being for the year 1923. (Edinburgh: H.M. Stationery Office, 1924.)

Science and the Instrument Industry.[1]

THE British Scientific Instrument Research Association is fortunate in that most of its members are, by the nature of their work, in constant contact with research, and consequently in a position to know what it implies, and understand its methods and results. Many of these participating firms have, in fact, long been in the habit of carrying out original investigations in their own laboratories. They realise, therefore, the lines along which advance is possible and desirable, and, what is most important, they have had experience in formulating their problems in a scientific manner. On the other hand, the research staff of the Association has learnt to envisage the problems put before it from the manufacturer's point of view, and to adapt itself to practical needs and the limitations imposed by the necessity of economic production. The efficiency of this staff is very largely due to the good fortune of the Association in having as its director of research Sir Herbert Jackson, who is not only known for a variety of pioneer investigations in the realms of pure and applied science, but has also had a particularly wide experience of matters concerning instrument design, and of the psychology of the manufacturer. The Association is largely a body of his shaping, and he has made it a scientific instrument for the setting and solving of problems fundamental for the industry concerned.

The sixth annual report of the Association has just

[1] The Sixth Annual Report of the British Scientific Instrument Research Association, for the Year 1923–24. (London: 26 Russell Square, W.C.1.)