

Danish Plaice Investigations in the Baltic Sea.¹

FOR many years the problem of how the stock of plaice in the Baltic Sea is recruited has occupied biologists of that region. Peterson's view, expressed in 1894 (*Report Danish Biol. Stat.*, 4, p. 13) and again in 1906 (*Cons. Internat. Rap. et Proc. Verb.*, 5), was that the numbers were renewed by immigration from the German coasts around Kiel Bay. A. C. Johansen came to the conclusion that the deep water of the Baltic itself was the real home of the O-group in the eastern Baltic, whilst Reibisch concluded that this was not sufficient to account for the renewal of the whole stock, and that an immigration of *adult* plaice took place from the Kattegat and the western Baltic.

As the result of a systematic investigation carried out in 1925, H. Blegvad, however, holds the view that the renewal of the stock of plaice is brought about by the appearance of *young stages* on the shores of the Baltic proper. The supply from this source is erratic. He shows that the temperature and salinity of the bottom water during the early months of the year exhibit a distinct correlation with the numbers of the fry which are able to become established. When the temperature and salinity were relatively high during this period, a favourable fry year resulted, as, for example, in 1923 and 1925, whereas 1922 and 1924 (with the reverse conditions) were bad years.

A. C. Johansen goes into this matter more thoroughly, but deals with the adjacent waters of the southern Kattegat and the Belt Sea. A similar correlation is observable here also. The question then arises, Is this influence direct or indirect? Johansen is inclined to believe that it is mainly indirect, and that the paucity of young plaice in certain years is due to the presence of comparatively fresh water, deficient in plankton, which flows out from the Baltic during the winter months. If this hypothesis should be further confirmed, he suggests that a forecast of the yield in any particular year will be obtained most cheaply and easily by estimating the plankton in those waters and not by fishing for the young. The need for a solution of this problem is becoming more and more urgent on account of the very large increase in the intensity of fishing in the Baltic which has come about in recent years. Thus, although the Danish catch in 1917 was only 31,485 kgm., in 1924 it reached 2,909,011 kgm.

¹ Report of the Danish Biological Station to the Board of Agriculture, 32; 1926: On the Renewal of the Stock of Plaice in the Baltic Proper. By H. Blegvad. Edited by Dr. C. G. Joh. Petersen. Pp. 37. 33; 1927: On the Fluctuations in the Quantity of Young Fry among Plaice and certain other Species of Fish, and Causes of the Same, by A. C. Johansen; On a Spawning Place for Winter Spawning Herring in the Northern Part of the Belt Sea, by A. C. Johansen; On the Annual Fluctuations in the Age-Composition of the Stock of Plaice—Investigations from the Danish Biological Station, 1923–26, by H. Blegvad; Studies on the Biology of the Oyster (*Ostrea edulis*), II–IV, by R. Spärck. Edited by Dr. A. C. Johansen. Pp. 65. (Copenhagen: G. E. C. Gad, 1927.)

University and Educational Intelligence.

CAMBRIDGE.—Mr. F. E. Baxandall and Mr. C. P. Butler have been reappointed as senior observers, and Mr. W. Moss as junior observer, at the Solar Physics Observatory, and Mr. H. E. Green has been reappointed as assistant observer at the Observatory.

LONDON.—A public lecture will be delivered at the East London College, Mile End Road, E.1, at 5 o'clock on Wednesday, May 16, by Dr. W. A. Goddyn, of the Rijks Herbarium, Leyden, on "Lotsy's Hybridisation Theory, demonstrated on South African Material."

Prof. Ross G. Harrison, of Yale University, will deliver a lecture on Monday, May 21, at 5.30 P.M., at

University College. The subject of the lecture will be "Modern Trends in the Study of Animal Development."

ST. ANDREWS.—An additional lectureship in philosophy has been instituted, and the University Court has resolved to appoint to this lectureship Mr. A. R. Knight, of the Institute of Industrial Psychology, London. The work of the new lecturer will be principally in the Department of Psychology and Experimental Psychology. The Court has appointed Dr. F. Bath, formerly of King's College, London, as lecturer in mathematics in the University and assistant to the professor of mathematics in University College, Dundee.

VACATION courses for teachers and students in England and Wales, arranged for the year 1928, differ but slightly from those of last year. The list issued by the Board of Education (H.M. Stationery Office, pp. 23, price 6d.) shows among those arranged by the Board several courses for teachers of science: in rural science, botany, and biology (but not, this year, in laboratory arts) at Cambridge, in physical chemistry and engineering at Oxford, and in physics at Harrow. Courses for foreigners have been organised by the University of London, by University College, London, by the University of Oxford, and by University College, Exeter. Among the subjects of the twelve courses arranged by university bodies in connexion with the work of the Workers' Educational Association, economics, literature, history, and psychology figure in all or almost all cases: natural science, generally biology, in five. In the list of courses organised by associations, the Association for the Provision of Science and Specialist Teaching finds no place this year: nor does the Dalton Association.

ADULT education in America is developing rapidly. Some account of its recent growth is given in *Bulletins 18 and 21 of 1927 of the United States Bureau of Education*, entitled "Public Education of Adults in the years 1924–1926" and "Public Evening Schools for Adults." Some of the activities described are concerned with attempts to promote by means of what used to be called 'Americanisation classes' the elementary education of illiterates. In such classes, organised by State departments of education, 315,000 students were enrolled in 1925–26. In public evening schools in cities of 10,000 or more inhabitants the enrolment was, in 1924, nearly a million. The most remarkable achievement in popularising such education is that of Gary, Indiana, where more than 12,000 men and women—one-sixth of the adult population—attend courses provided in the public schools. The total budget for evening schools, as reported by 412 towns, exceeded five million dollars, being at the rate of 15 dollars per student. Extension courses offered by colleges and universities are very various and are constantly assuming new forms. 'Radio talks' are increasingly used, and more and more institutions are installing, or procuring the use of, broadcasting plants and employing them in connexion with correspondence courses. So striking are the signs of growth of the adult education movement that the Bureau of Education's specialist in this subject anticipates developments during the second quarter of the century that will match the marvellous growth in the field of secondary education in the first quarter. A similar belief in a coming great revival in Great Britain was expressed by Prof. Robert Peers, of University College, Nottingham, in a public lecture on adult education delivered by him at King's College, London, some time ago.