

is usually the amount occurring in food cooked in aluminium vessels. It appears that a considerable proportion of the metal taken into the stomach is soluble, but the actual amount dissolved varies greatly with the circumstances. Only minute amounts, however, appear to be absorbed into the body, from determinations of the quantity in the blood, tissues or urine. The presence of relatively large amounts of the metal in the digestive tract may interfere with the digestive processes, alum especially producing gastro-intestinal irritation and loss of appetite in both animals and man.

Neither these experiments nor those which show the harmlessness of the ingestion of small amounts of aluminium are necessarily conclusive, since it is possible that there may be individuals who are susceptible to even such small doses of the metal as may be derived from aluminium utensils. Monier-Williams concludes that there is no convincing evidence that these small amounts have a harmful effect upon the ordinary consumer, but that it is undesirable to admit the entry of aluminium into food in the relatively large amounts in which it may be employed as a constituent of baking powders or self-raising flour.

Phytoplankton and Herrings*

THE concentration of phytoplankton organisms at times in dense patches in various parts of the sea is a phenomenon, which was recognised by early observers (see also NATURE, Dec. 7, p. 897). These brownish or greenish patches in the North Sea, usually formed of the diatoms *Rhizosolenia* or the colonial flagellate *Phaeocystis* and accompanied by a slime which clogs the nets are well known to the fishermen, who call such discoloured water 'stinking water', 'weedy water', 'Dutchman's bacey juice', etc., regarding it as a bad sign for the fishing. The present authors analyse the herring fishery of the southern North Sea together with the occurrence of these phytoplankton patches, the object of the work being "to give an account of our knowledge of the distribution and movement of any dense phytoplankton concentrations in the southern North Sea from 1921 to 1932 (excepting years 1928 and 1929) at such times as might affect the herring fishing, and by examining the official reports and statistics of the fisheries from year to year to see whether or not the existence of these patches, either on the fishing grounds themselves, or lying in the path of incoming shoals of fish, can be regarded as a probable cause of some of the fluctuations in the herring landings over this period."

It has been found again and again that where large zones of phytoplankton occur the herrings avoid them, sometimes making extensive detours rather than penetrate them, and that these patches form definite barriers to the oncoming shoals.

At the time of the great herring shoaling in the southern North Sea, *Rhizosolenia styliformis* and *Phaeocystis* are the outstanding features of the plankton in this area, and when the fish have been plentiful and the fishing above the average, no instance is found of a concentration of plankton in such a position where it might be held to have

* Ministry of Agriculture and Fisheries. Fishery Investigations, series 2, vol. 14, No. 2, 1934: Phytoplankton and the Herring. Part 1: 1921 to 1932. By R. E. Savage and Prof. A. C. Hardy. Pp. 73. (London: H.M. Stationery Office, 1935.) 3s. 6d. net.

an influence on the fishery, whereas on each occasion when the fishery has been below the average and the decrease cannot be attributed to weather or economic conditions, phytoplanktonic concentrations occurred. Four factors are cited as possibly influencing the fishery—the effect of the moon, year classes, gales and economic conditions; to these are now added the very probable and now almost certain factor of influence of phytoplankton.

The authors note further that since the present paper was being prepared for press another autumn season has come round, 1933, and this brings with it such striking evidence in favour of the phytoplankton hypothesis that they feel justified in regarding this as not only possible but even highly probable.

Educational Topics and Events

CAMBRIDGE.—N. G. Hentley, of St. John's College, has been appointed to the Benn W. Levy research studentship in biochemistry.

At Queens' College, Sir C. J. H. Thomas, Permanent Secretary of the Ministry of Agriculture and Fisheries, has been elected into an honorary fellowship.

Mr. C. W. Gilbert, of Christ's College, has been elected into a research fellowship at Jesus College.

An election to the Pinsent-Darwin studentship in mental pathology will be made in January 1936. The studentship is of the annual value of not less than £225, and is tenable for three years. The student must engage in original research into any problem having a bearing on mental defects, diseases or disorders, but may carry on educational or other work concurrently. Applications should be sent before January 1, 1936, to the Secretary, Pinsent-Darwin Studentship, Psychological Laboratory, Cambridge.

ELECTIONS to three Beit fellowships for scientific research will take place on or about July 10, 1936. A fellowship is of the annual value of £240, and is tenable for two years at the Imperial College of Science and Technology, South Kensington, London, S.W.7. Candidates must be less than twenty-five years of age. Further information can be obtained from the Rector of the College.

THE thirty-sixth annual meeting of the Science Masters' Association will be held in the Chemistry Department of the Imperial College of Science and Technology, South Kensington, London, S.W.7, on January 1-4, under the presidency of Sir William Bragg. The following lectures will be delivered during the meeting: Sir William Bragg, "School Science after School" (presidential address); Prof. J. C. Philip, "Chemical Fogs"; Prof. J. W. Munro, "Recent Advances in Economic Entomology"; Dr. H. J. T. Ellingham, "Primary Cells: their Nature and Action"; Dr. John Taylor, "The Doctor as Detective". There will also be a lecture-demonstration of biological films by H. R. Hewer. Among the discussions to be held is one on "Geometrical Optics—especially Sign Conventions" and another on "School Certificate Biology Syllabus". Further particulars can be obtained from the Annual Meeting Secretary, The Square, Repton, Derby.