food ; of these the last group are easiest to enumerate with accuracy, especially the scarcely motile bivalves. Much of the Report deals with two forms of the latter of the genera Spisula and Mactra. Of the former, 15,135 specimens of *S. subtruncata* were obtained in one voyage and afterwards measured. As examples, one station yielded 3301 specimens, 2-8 mm., and another 343 specimens, 12-21 mm., giving fairly regular curves round 5 and 17 mm. One station gave two curves round 4 and 20 mm., but otherwise the forms in this voyage from each station were all of one size and presumably one age. Work in this manner allows the plotting of areas according to the number and sizes (and thus weight and food value) and induces deductions as to mortality and growth. One bed of at least 1 year old forms covered 600 square miles and gave more than 83 million Spisula per square mile, while a second of a few months old extended to 700 square miles, 643 million for the square mile, figures which appear gigantic, but are relatively small as compared to layings of mussels and oysters in shallower waters. Omitting the first voyage, the figures range from 78 to 303 per square metre.

Enough, however, has been said to show the value, both scientific and economic, of this work, and Dr. Russell, as director, and Mr. Davis, as the naturalist concerned, are to be heartily congratulated on the very interesting investigations with which they commence a new serial publication, giving the results obtained by the Scientific Division of the Ministry of Agriculture and Fisheries. It is in every way up to the consistently high scientific standard that this Department maintains. Experience teaches that only by the submission of researches for criticism can such a scientific level of work be secured, but we fain would have in addition a popular publication of these and other fishery results perhaps more akin to the literature issued by the agricultural side of the same Ministry, not leaving the dissemination of knowledge solely to trade journals. J. STANLEY GARDINER.

The Radioactivity of Radium in Relation to Solar Radiation.

DR. A. NODON has carried out a series of experiments, which he interprets as showing the existence of solar radiations of shorter wave-length than the X- and γ-rays, and regards as the cause of radioactive disintegration. He has sent us papers on this work, one of which was presented to the Paris Academy of Sciences on June 11, 1923. A radiographic plate, protected by a lead screen with a small central hole, was enclosed in a black cardboard case, on the outer surface of which a small quantity of radium salt was fixed by an adhesive. The effect produced on the sensitive plate was found to be variable, depending on the electromagnetic activity of the sun ; in some cases direct exposure to the sun's rays produced strong impressions on the plate in a few minutes, while in others the impressions were weak after several hours' exposure, and this did not depend on differences in the heating effect of the sun's rays. During periods of solar activity the difference in the impressions produced in direct sunlight and inside a room or in a cellar was found to be very great, being much smaller indoors. The solar radiations do not affect the plate if no radium or other radioactive substance is present. The variations of the horizontal component of the earth's magnetic field were measured by means of a magnetograph, and it was assumed that these variations are closely related to the solar activity.

Measurements made with an electrometer confirmed those made by the photographic method ; these are described in an extract from *Ciel et Terre*, dated May 1923 ; they show very great differences in the action of the sun from hour to hour, and sometimes from minute to minute ; using uranium oxide on the screen closing the window of the electrometer, the deflexions during periods of low solar activity, in a certain series of experiments, varied from 10 to 45, while during periods of strong activity they varied between 100 and 150 divisions.

Dr. Nodon considers that these experiments prove that radioactivity is influenced by radiations emitted directly by the sun and indirectly by the higher atmosphere, which, to some extent, scatters the direct radiations ; and he supposes that, owing to this action of the atmosphere, some of the radiations are transmitted by diffraction from the molecules round the earth, so that even at night some effect is produced. The absorption of different substances for the ultra-radiations seems to be of the same order as that for the X- or γ-rays, the absorption being greatest in substances with a large atomic number ; large thicknesses of building material and of soil absorb a very large proportion of the rays, so that in the interior of a building, and particularly in a cellar, the effects are much smaller than in direct sunlight ; in spite of this the variations of intensity with different magnetic conditions were observed indoors and in cellars.

It is difficult to understand how such variations in radioactivity have hitherto escaped attention ; the radium " clock " is described as working at a uniform rate, indicating constant activitv ; the spinthariscope has not been observed to work better at one time than another, and a good deal of important modern work depends on the actual counting of the impacts of the α-particles on a phosphorescent screen, the rate apparently remaining constant for the same preparation. Measurements of the saturation current due to the ionisation caused by radioactive preparations do not appear to have shown any trace of this effect, and it will be interesting to see the results of further investigations into the phenomena observed by Dr. Nodon.

University and Educational Intelligence.

CAMBRIDGE.—Mr. John Pierpont Morgan has presented to the University a set of fifty-three volumes of the photographic reproduction of the Coptic manuscripts belonging to the Pierpont Morgan library.

The Statutory Commissioners have replied to various representations made to them by the Colleges. They propose to require Colleges to carry into effect the recommendations of the Royal Commission with regard to pensions ; they also adhere to the recommendations of the Royal Commission making all College scholarships and exhibitions for undergraduates eleemosynary. Further, they have given notice that they intend to institute a University Entrance Examination, to be passed before a student comes into residence.

A first list of universities has been submitted to the Senate for approval as institutions, the graduates of which may claim the privileges of affiliation under the new regulations. The list includes most universities of the British Empire, a select but by no means complete list of American universities, and two Continental universities, Basle and Berne. To meet the case of students attending certain colleges in Great Britain and graduating in the University of London, the University Colleges of Exeter, Nottingham, Reading, and Southampton are also added to the list.