

considerably weaker, as the stain (a spirit varnish) fills the pores and prevents the penetration of the adhesive. It is in complete accord with this explanation that the diminution of strength is less marked with a very porous wood, like deal, than with a closer grained one, like walnut.

For the second kind of joint, that between smooth, non-porous surfaces, the authors postulate some specific action between material and adhesive, and refer to Hardy's views on lubrications. They arrive at the conclusion that any liquid which wets the surfaces and can somehow be transformed into a solid will act as an adhesive for these surfaces. As soon as the statement is put in this form, it would seem to follow quite naturally from considerations of continuity, which does not lessen its novelty or importance. Very remarkable examples of such 'specific' joints are given; e.g. shellac joints between metal surfaces with a tensile strength of more than two tons per sq. in. Space does not permit more detailed discussion of the paper, which will be read with profit not only by those interested in adhesives, but also by any one who derives pleasure from seeing a complex problem attacked by the whole armoury of research.

Prof. Schryver briefly describes his attempts to isolate a pure standard gelatin or, incidentally, to decide whether a body of uniform composition answering to this description exists; the results are not conclusive. Dr. J. C. Kernot and Miss N. E. Speer have achieved a result of technical and economic interest by producing from suitably treated fish skins a glue quite free from "an ancient and a fish-like smell," such as in ordinary fish glues is disguised—or, as sensitive people might say, accentuated—by various additions. The same authors in another paper suggest improvements in the manufacture of bone glue. Appendix V. deals with the mechanical tests of adhesives for timber used by the Royal Aircraft Establishment; the general conclusion is reached that the causes of the large variations in the results of timber tests remain obscure, and that "until the degree of these variations has been reduced the present forms of test-piece are unsuitable for experimental or even inspection purposes."

Readers of the report will learn with regret, though without surprise, that important investigations on the manufacture of glue have had to be abandoned owing to lack of financial support from manufacturers—a position which is perhaps explained, though scarcely justified, by the great fall in the price of glue.

E. H.

### Herrings along the Baltic Coast of Sweden.

IN *Publications de Circonsance* of the Conseil Permanent International pour l'Exploration de la Mer, No. 89, Chr. Hessle surveys the herring investigations which have been carried on during the past few years along the Baltic coast of Sweden. Nets, both drifting and anchored, land-seines, and big traps are all used for the fishery, but the main part of the total catch is fished by nets. Although the bulk of the fish is landed between July and November, considerable quantities are taken during the winter and early spring. Ice on the water is a severe hindrance to the net fishery during the colder months, and in some places it may put a stop to fishing when, by all evidence, herrings are still present. In the archipelagos nets are sometimes used actually under the ice.

Baltic herrings are characterised by their small size, the low average number of vertebrae, and of the keeled scales behind the ventral fins. In contrast to these, the average number of the first vertebrae with closed

haemal arches is rather high. Both autumn-spawning and spring-spawning herrings occur, the former being of the greater economic value. Catches of autumn-spawners nearly always contain a percentage of spring-spawners, the proportion varying with the season and from year to year. In these catches of mixed fish the spring-spawners are generally smaller in size. This is due partly to the greater percentage of smaller fishes among the spring-spawners, but also to the fact that the rate of growth of the spring-spawners is inferior. In both classes the rate of growth is exceedingly slow after the second or third year. Spawning would seem to occur in the same places for both autumn and spring fish, the former spawning at a temperature of 11°-14°, and the latter at 6°-10°.

In the innermost parts of the archipelagos, and especially in the fjords which penetrate deep into the country of the Middle Baltic, there is a fishery which is based on stationary local races in waters so closed and isolated that sea herring do not enter them. The size and rate of growth of these isolated fjord herrings show a very great variability. Gudingen and Gamlebyviken are two fjords separated only by a narrow strip of land; in Gudingen the rate of growth is quite normal, but in Gamlebyviken sexually ripe fish of only 10 cm. in length have been taken.

Along the coast of the Gulf of Bothnia herrings are caught in traps, fishing commencing as soon as the ice breaks up in the spring, and lasting until mid-summer. The bulk of these 'ice herring' are spring-spawners, and a typical feature of the catches is the great number of remarkably large fish which show a peculiar mixture of characters and habits typical of one or another of the races previously dealt with. Altogether Hessle has provided us with a most interesting and instructive paper.

### University and Educational Intelligence.

ABERYSTWYTH.—Dr. W. Robinson, senior lecturer in the department of cryptogamic botany in the University of Manchester, has been appointed to the chair in botany in University College, Aberystwyth, in succession to Prof. Lloyd Williams, who retires under the age limit in September.

CAMBRIDGE.—The University Commissioners have published a number of regulations that they have made for bringing into action next term the new statutes governing the General Board and the various faculty Boards. They have also published further regulations which they propose to make—after discussion by the Senate—on the election of members of the Council, degree committees, the Buildings Syndicate, and University finance. The chief point on which discussion is likely to take place is the proposal that members of the Council shall be elected by the method of the single transferable vote. So far as the election of ordinary members of the Regent House is concerned, where four members are elected at a time, this provision is probably suitable, as it will ensure representation on the Council of different groups of electors. It is doubtful, however, whether this method secures the most effective result in the case of the election of the other two groups—(a) heads of colleges, and (b) professors and readers. Here only two members are elected at a time in each class. So far as University politics is divided into two fairly even parties, this method generally means the election of one candidate from each party—not by any means necessarily the best way of electing an executive body.

Mr. A. Hopkinson, Emmanuel College, has been reappointed demonstrator in anatomy.

THE Air Ministry announces further appointments to short-service commissions in the Royal Air Force to be made in September. Applications are specially welcome from young men who have had some engineering training or have shown a bent towards mechanical matters in their private amusements, as well as from those who are keen sportsmen and have a leaning towards travel and adventure. Short-service officers are taught to fly and at the same time receive instruction in aeronautical engineering, armament, navigation, etc. Service in the R.A.F. counts in part towards the period necessary to become associate members of the Institute of Mechanical Engineers. Applications for regulations should be addressed to the Secretary, Air Ministry, Adastral House, Kingsway, W.C.2. Candidates must be between 18 and 25 years of age, should have received whole-time education at least up to the age of 16 years, and should possess good physique and eyesight.

THE Ramsay Memorial Fellowship Trustees have made the following awards of new fellowships for the session 1926-27:—A British Fellowship of 300*l.*, tenable for two years, to Dr. R. F. Hunter, for work at the Imperial College, London; a Glasgow Fellowship of 300*l.*, tenable for two years, to Mr. J. D. Fulton, for work at the University of Manchester; a Swedish Fellowship of 307*l.*, to Mr. Gunnar Hägg, for work at University College, London; a Swiss Fellowship of 300*l.*, tenable for one year, to Dr. Max Brunner, for work at the University of Cambridge. The Trustees have renewed the following Fellowships for a year; Mr. G. A. Elliott (British Fellowship)—at University College, London; Mr. T. Corlett Mitchell (Glasgow Fellowship)—University of Cambridge; Dr. D. McKay Morrison (Canadian Fellowship)—University of Cambridge; Mr. W. G. Burgers (Netherlands Fellowship)—Royal Institution, London; Dr. Ekonomopoulos (Greek Fellowship)—University College, London; Dr. P. Misciattelli (Italian Fellowship)—University of Oxford; Mr. Erik Rudberg (Swedish Fellowship)—King's College, London.

THE League of Nations Committee on Intellectual Co-operation has received from its sub-committee of experts recommendations concerning the instruction of children and young people in the existence and aims of the League. These recommendations raise questions of principle of the highest importance. It is proposed to request Governments to include the subject in their programme of studies and to ensure that the relevant text-books mention it, that education authorities should arrange that in examinations, questions on the League should be set whenever practicable, and that universities should organise special courses of at least six lectures which all students might attend. In addition numerous devices are recommended for propagating knowledge of the League and its gospel, such as the dissemination of books and periodicals, lantern slides, cinematograph films and radio broadcast addresses, special courses for teachers, celebration of League Days at schools, essay competitions, inspirational lectures, and national conferences. The exact place which this instruction will occupy in the curriculum and the time to be allotted to it are, the sub-committee remarks, questions which should be left for the national or local authorities to decide, but it is recommended that it should be correlated with the lessons in "geography, history or civics." Where civics is included in the school curriculum a teacher may fairly be expected to give some instruction about the League of Nations, but where it is not, it is open to question whether such instruction should be smuggled in as "geography" or "history."

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### Contemporary Birthdays.

- August 27, 1865. Prof. James Henry Breasted.  
 August 28, 1858. Prof. Roland Thaxter.  
 August 30, 1871. Sir Ernest Rutherford, O.M., P.R.S.  
 September 1, 1877. Dr. F. W. Aston, F.R.S.  
 September 1, 1859. Dr. Walter Gardiner, F.R.S.  
 September 2, 1877. Prof. Frederick Soddy, F.R.S.  
 September 3, 1882. Dr. William Lawrence Balls, F.R.S.

Prof. J. H. BREASTED, the accomplished American Egyptologist, was born at Rockford, Illinois. His interests early centred in the University of Chicago. Since 1905 he has been professor there in Egyptology and Oriental history. In 1894-95 he was collecting in Egypt for the University, and, later, director of its Egyptian Expedition. In 1920 he was in charge of an archæological survey of Mesopotamia. Prof. Breasted is an honorary fellow of the Society of Antiquaries of London, and D.Litt., Oxford.

Prof. THAXTER, who was born at Newton, Mass., U.S.A., graduated at Harvard. Assistant professor of cryptogamic botany there from 1891 until 1901, he later occupied the chair, and he has been, since 1919, emeritus professor. He is the author of many papers on the fungous diseases of insects. Prof. Thaxter is a foreign member of the Linnean Society.

Sir ERNEST RUTHERFORD, president of the Royal Society, Nobel laureate in chemistry, 1908, was born at Nelson, New Zealand. He was educated at the University of New Zealand and Trinity College, Cambridge. After prosecuting research work at the Cavendish Laboratory, he left England in 1898 to occupy the chair of experimental physics in McGill University, returning in 1908. His record of accomplishment in the domain of radioactivity and atomic structure is world known.

Dr. ASTON, Nobel laureate in chemistry, 1922, was born at Harborne, Birmingham, and educated at Malvern College and the University of Birmingham. In 1910 he became one of Sir J. J. Thomson's research assistants at the Cavendish Laboratory, Cambridge. Here it was, under stimulating associations, that Dr. Aston engaged in his classical researches on isotopes. In 1922 the Royal Society awarded him its Hughes medal for his "discovery of isotopes of a large number of the elements by the method of positive rays."

Dr. GARDINER was educated at Bedford, graduating at Clare College, Cambridge. Sometime a science lecturer at Girton, and University lecturer in botany, he received one of the Royal Society's Royal medals in 1898, at the hands of Lord Lister. His researches in vegetable histology established that the protoplasm in the tissues of plants is continuous from cell to cell. Other work of his dealt with the function of tannin, protoplasmic contractility, and the phenomena accompanying stimulation in insectivorous plants.

Prof. SODDY, Nobel laureate in chemistry, 1921, a graduate of Merton, was born at Eastbourne. Early, at McGill University, Montreal, he was working under the inspiring guidance of Sir Ernest Rutherford, engaged in researches on radioactivity; afterwards he was with Sir William Ramsay at University College, London, a period when proof was obtained with the spectroscope of the production of helium from radium. Occupant of the chair of chemistry in the University of Aberdeen from 1914 until 1919, he left to become Lees professor of chemistry in the University of Oxford.