

Its influence, however, would be opposite to what is observed with glass at room temperature. Viscous deformation makes the bottom of the cracks less sharp, and thus raises the strength by reducing stress concentrations. An increase of the tensile strength with temperature in the region of incipient plasticity has, in fact, been observed on colophonium and colophonium-shellac mixtures by Hauser⁸. Prolonged action of stress, therefore, would make the specimen stronger, not weaker, so far as the viscosity effect alone is concerned.

¹Holland, A. J., and Turner, W. E. S., *Trans. Soc. Glass Tech.*, **24**, 46 (1940).

²Preston, F. W., *J. Appl. Phys.*, **13**, 623 (1942).

³Murgatroyd, J. B., *Nature*, **154**, 51 (1944).

⁴Obreimow, J. W., *Proc. Roy. Soc., A*, **127**, 290 (1930).

⁵Orowan, E., *Z. Phys.*, **82**, 239 and 259 (1933). Obreimow's original figures for the surface energy contain a factor 4 due to an error in the expression for the moment of inertia of the cross-section of the mica lamella. The values given by me have been obtained from measurements with a somewhat improved technique.

⁶Orowan, E., *Z. Phys.*, **80**, 195 (1933).

⁷Schurkow, S., *Phys. Z. Sowjetunion*, **1**, 123 (1932).

⁸Hauser, F., *Verh. deut. phys. Ges.*, **14**, 18 (1912).

NATIONAL INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH

THE annual report of the National Institute of Economic and Social Research for 1943 is of exceptional interest. In addition to a general report and a report on research in 1943, the report on the library and equipment and the usual list of publications and of research staff at December 31, 1943, it includes a discussion of the Institute's research policy, which is of considerable general interest in relation to the statement in the White Paper on Employment policy of the Government's intention to establish a permanent central staff qualified to measure and analyse economic trends and to call for more quantitative information from industry on current economic movements.

Originally it was anticipated that the proper field of the Institute's work would lie mainly in the measurement of changes, the discovery of trends and the analysis of structure, and its first inquiries were directed to the measurement of the national income in Great Britain, the economic problems of nutrition, the extent and distribution of unemployment and the location of industry. The systematic study of these subjects has now been taken over by Government departments with resources that no private agency could command, although the Institute has been able to supplement official studies by its own studies of the national income, consumption and other subjects.

The Institute's resources have also been fully occupied during the War on related inquiries, and the accelerated extension of realistic and statistical studies in the social sciences due to the War has led to the Institute being approached not only by Government departments and academic workers, but also by business men and their associations, with suggestions for research or requests for assistance in organizing research. Although the War has incidentally added largely to the small number of research workers experienced in realistic and statistical investigation, the need for such study will be as great for a time when hostilities cease as during the War,

and the resources of the Institute are likely to be strained by the demands made on them. Even when an authoritarian direction of industry is removed, an exact and comprehensive, constantly adjusted analysis of resources and requirements will remain necessary as a basis both for Government policy and private business decisions.

Economists and other students of the social sciences will find themselves faced, therefore, with demands for guidance which will be unprecedented in scale if not in character. Even when the analysis is dictated by a theoretical approach, the post-war need will be the statement of problems in realistic and quantitative terms. For this, mechanical aids as well as the resources of specialized library and adequate secretarial staff will be essential, and such resources the Institute hopes to provide on a greater scale in future. Calling in the co-operation of experts in different fields, it can promote and arrange for the direction of inquiries and provide the personnel and material aids for their execution. It will endeavour to develop a part of the field itself, and will co-operate with individual students and other agencies working in the same or connected fields; but apart from a small portion of its funds held ready to meet requests for assistance from individual scholars, the bulk of the Institute's resources should be concentrated on one field where there is a prospect of achieving definite results without serious overlapping with the activities of the research departments of the universities.

The executive committee of the Institute has now reached the conclusion that this main effort should be directed to work on the structure and productivity of the national economy in Britain. In its simplest form the object is to examine the way in which wealth is created in Great Britain, to inquire what determines the amount of wealth created in the average man-hour of British labour, how it compares with other countries, what underlies the differences, what causes the gradual increase and what could be done to accelerate it. Two major projects now in train fit naturally into this framework. The statistical inquiry into the national expenditure, output, and income of the United Kingdom in the years between the Wars provides the essential basic data, and the co-operative inquiry into the distribution of the products of industry is an attempt to see how far existing data shed light on these questions. The Institute would also hope to supplement these inquiries with detailed factual inquiries into the experience of specific British industries, directed particularly to the relation of costs and efficiency and to comparisons with industries in other countries.

The general report refers to the circulation of the first issue of the Register of Research in the Social Sciences, which continues to be prepared by the secretary as editor, with the assistance of the editorial advisory committee appointed by the Consultative Conference on the Social Sciences. The Institute has continued to provide facilities for the activities of the National Service Committee for Social, Economic and Statistical Research, and this Committee is preparing a memorandum on the post-war position of the education and employment of economists at the request of Lord Hankey's Interdepartmental Committee on Further Training and Education.

Most of the research work during the year represented the continuation of programmes already in progress, but the Institute took under its wing the inquiries initiated by Mr. R. Titmuss into "Disease Mortality and its Changing Distribution in England

and Wales" and the statistical inquiry into "Methods of Investigating Oscillatory Movements in Time-series" by Mr. M. Kendall. Dr. A. Baykov's study on "The Development of the Soviet Economic System" was enlarged, and final work on its preparation for the press substantially completed. M. N. Momtchiloff's study of the financial and economic experience of south-eastern European countries was published early in 1944 under the title "Ten Years of Controlled Trade in South-Eastern Europe". The programme of work on local taxation studies undertaken by Prof. and Mrs. Hicks was modified, a study on wealth and poverty in local government being postponed in favour of two 'occasional papers', one of which, "Problems of Valuation for Rating", is in the press and the other, "The Incidence of Local Taxation in England and Wales", was awaiting comment by certain Government departments at the end of the year.

Besides the two major inquiries in progress already mentioned, that by Miss P. M. Deane on "The Measurement of National Income of Selected Colonial Territories" was also continued, but at the end of the year the inquiry into aspects of commercial policy was suspended. An investigation into the economic effects of advertising was started in the middle of the year, and M. N. Momtchiloff began work on a new inquiry into the monetary position of the six south-eastern States of Europe. In the spring, a grant was made to the University of Birmingham in support of Prof. Sargent Florence's inquiry, "Location and Optimum Size of Plants in Particular Industries", which is intended to test the hypothesis that there is an important relation between the size of an industry's plant and its location pattern.

Some further details of the research work of the Institute are given this year in a new Publications and Programmes pamphlet which, in addition to listing studies and occasional papers already published and publications now in the press, includes an account of some of the programmes of research on which those publications are based, and also of other publications in active preparation. Among these may be mentioned the study, "Personal Expenditure on Consumption in the United Kingdom, 1920-1938", and the occasional paper, "The Structure of Money Flow Systems", both coming from the major programme of research into national expenditure, output and income directed by Mr. R. Stone; two occasional papers, "Productivity, Prices and Distribution in Selected British Industries" and "International Comparisons of Productivity, Cost Ratios and Share of Wages in British, American and German Manufacturing Production" under the Distribution of the Product of Industry inquiry; and A. Collier's "The Crofter Problem: A Study of Economic and Social Conditions in the Highlands and Islands of Scotland".

FORTHCOMING EVENTS

Wednesday, September 13

BRITISH ASSOCIATION OF CHEMISTS (LONDON SECTION) (at the Chemical Society, Burlington House, Piccadilly, London, W.1.), at 6.30 p.m.—Mr. H. W. Rowell: "The Development of Plastics".

APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

DIRECTOR OF THE BRITISH NON-FERROUS METALS RESEARCH ASSOCIATION—The Chairman of Council, British Non-Ferrous Metals Research Association, Euston Street, London, N.W.1 (marked 'Personal') (September 15).

ASSISTANT DAIRY BACTERIOLOGIST (temporary)—The Registrar, The University, Leeds (September 15).

SPEECH THERAPIST—The Director of Education, Education Offices, 15 John Street, Sunderland (September 15).

TEACHER (full-time) OF MATHEMATICS in the Nautical College Department of the Liverpool Technical College—The Director of Education, 14 Sir Thomas Street, Liverpool (September 15).

SPEECH THERAPIST (full-time)—The Director of Education, Hamilton Square, Birkenhead (September 15).

ASSISTANT (full-time) to teach either MECHANICAL ENGINEERING or ELECTRICAL ENGINEERING SUBJECTS in the Stockton-on-Tees Technical School and Evening Institute—The Director of Education, Shire Hall, Durham (September 16).

SENIOR SPEECH THERAPIST—The Director of Education, Education Offices, Nelson Square, Bolton, Lancs. (September 16).

LECTURER IN THE DEPARTMENT OF MECHANICAL ENGINEERING—The Registrar, Loughborough College, Loughborough (September 18).

UNIVERSITY READERSHIP IN CHEMISTRY tenable at the Royal Cancer Hospital (Free)—The Academic Registrar, University of London, South Kensington, London, S.W.7 (September 18).

POULTRY PATHOLOGIST for the New Zealand Department of Agriculture—The High Commissioner for New Zealand, 415 Strand, London, W.C.2 (September 18).

SPEECH THERAPIST (full-time)—The Director of Education, Education Offices, Wolverhampton (September 18).

ASSISTANT LECTURER IN MATHEMATICS—The Secretary and Registrar, The University, Bristol (September 20).

BOROUGH ENGINEER AND SURVEYOR—The Town Clerk, Town Hall, Walworth Road, London, S.E.17 (endorsed 'Borough Engineer and Surveyor') (September 22).

ASSISTANT REGISTRAR—The Registrar, The University, Sheffield 10 (September 23).

LECTURER (full-time) IN MECHANICAL ENGINEERING—The Principal, Battersea Polytechnic, Battersea, London, S.W.11 (September 23).

LECTURER IN VERTEBRATE ZOOLOGY—The Secretary, The University, Edinburgh (September 25).

LECTURERS (2) IN MECHANICAL ENGINEERING, and a LECTURER IN ELECTRICAL ENGINEERING—The Principal, West Ham Municipal College, Romford Road, Stratford, London, E.15 (September 25).

PHYSICIST (must have first-class experience on problems relating to Lighting and Aircraft and Automobile Lamps) for a Company in Birmingham—The Ministry of Labour and National Service, Room 432, Alexandra House, Kingsway, London, W.C.2 (quoting Reference No. A.630.XA) (September 26).

CHAIR OF ELECTRICAL ENGINEERING—The Acting Registrar, The University, Leeds 2 (September 30).

CHAIR OF BIOLOGY in Victoria University College, Wellington, New Zealand—The Secretary, Universities Bureau of the British Empire, c/o University College, Gower Street, London, W.C.1 (September 30).

PRINCIPAL OF THE HACKNEY TECHNICAL INSTITUTE, and PRINCIPAL OF THE SOUTH-EAST LONDON TECHNICAL INSTITUTE—The Education Officer (T.1), County Hall, Westminster Bridge, London, S.E.1 (September 30).

PRINCIPAL OF THE WALKER TECHNICAL COLLEGE, Oakengates—The Secretary for Education, County Buildings, Shrewsbury, Shropshire (September 30).

PROFESSOR OF PHYSICS—The Registrar, University College, Singleton Park, Swansea (October 18).

HONOURS GRADUATE IN CHEMISTRY (London, Reference No. F.2719.XA), HONOURS GRADUATES (2) IN METALLURGY (Neath, Reference No. F.2720.XA; Shipley, Reference No. F.2721.XA), and HONOURS GRADUATE IN CHEMISTRY or Member of the Royal Institute of Chemistry, Branch E (London, Reference No. F.2722.XA), on the research staff of a progressive National Organization with home and overseas interests—The Ministry of Labour and National Service, Room 432, Alexandra House, Kingsway, London, W.C.2 (quoting the appropriate Reference No.) (October 21).

LIBRARIAN—The Librarian, Queen's University, Belfast (October 31).

CHAIR OF PSYCHOLOGY in the University of Sydney—The Secretary, Universities Bureau of the British Empire, c/o University College, Gower Street, London, W.C.1 (October 31).

BYEBE CHAIR OF ENGINEERING—The Registrar, The University, Manchester 13 (November 18).

AGRICULTURAL SCIENTIST with intimate knowledge of livestock and breeding problems in this country, to take charge of the Board's Livestock Improvement Department—Milk Marketing Board, Livestock Improvement Department, Thames Ditton, Surrey.

CHIEF INSPECTOR (must have had first-class experience in Inspection of Steel and Non-Ferrous Products, and have full knowledge of A.I.D. procedure) by large Steel Foundry in Yorkshire—The Ministry of Labour and National Service, Appointments Office, The White Building, Fitzalan Square, Sheffield 1 (quoting Reference No. 107).

REFRIGERATING ENGINEER for West Africa—The Secretary, Overseas Manpower Committee, Ministry of Labour and National Service, Alexandra House, Kingsway, London, W.C.2 (quoting Reference No. 1162).

HEAD OF THE ENGINEERING DEPARTMENT—The Principal, Technical Institute and Secondary School, Dursley, Glos.

GRADUATE (temporary, man or woman) IN SCIENCE AND MATHEMATICS in the Pontypridd Junior Technical Schools (Building)—The Director of Education, County Hall, Cardiff.

REPORTS and other PUBLICATIONS

(not included in the monthly Books Supplement)

Proceedings of the United States National Museum. Vol. 94, No. 3176: Twelve New Species of Chinese Leaf-Katydid of the Genus *Xiphidiopsis*. By Ernest B. Tinkham. Pp. 505-528. Vol. 95, No. 3178: New American Cynipids from Galls. By Lewis H. Weld. Pp. 24. (Washington, D.C.: Government Printing Office.) [38]

Smithsonian Institution. War Background Studies, No. 19: The Peoples of French Indochina. By Olov R. T. Janse. (Publication 3786.) Pp. iv+28+25 plates. (Washington, D.C.: Government Printing Office.) [38]