

which were reported to the governors by Sir Cyril Fox on this occasion, are an indication of the activities of the Museum in the preservation and display of objects illustrating the history and culture of the Welsh people. Among these were a collection of neolithic finds from Breconshire, a thirteenth-fifteenth century stone fireplace from the Vale of Glamorgan, and a turned chair of mid-sixteenth century date; while among objects deposited were an important collection of carved stones dated at about A.D. 1230-40 from Castell-y-Bere, and the extremely interesting iron age fire-dog found in 1852 at Carreg Coedog Farm, Denbighshire. It was also reported that the services of the Museum had been called upon by the Office of Works to report on the antiquities of Pembrokeshire, which are threatened by a tank school.

Inland Water Survey Report

THE third annual report of the Inland Water Survey Committee, issued by the Ministry of Health and the Scottish Office (H.M. Stationery Office, 4d. net), while recording a year of useful activity in various directions, chiefly with the aid of external agencies, finds occasion to express disappointment at the results achieved and to state the conviction of the Committee that action should be taken by the Government, financially or otherwise, for ensuring the extension of the work in both England and Wales and Scotland. The Committee points out that it has no staff at its disposal for taking actual measurements, and that it has to rely in England and Wales (and to some extent in Scotland) on voluntary action by catchment boards and others for the execution of this part of the work of the Survey. It finds, moreover, that relatively very few suitable records of river flow are being kept, and that neither the information available from water undertakers, nor that from catchment boards, is sufficient in scope or adequate in quality to enable a comprehensive survey to be made. It is convinced that in order to be of real use, such a survey should be carried out on similar lines to the Ordnance Survey or the Geological Survey in their respective fields. It may be pointed out that this was precisely the view taken by the British Association Committee four years ago, when the Government reluctantly agreed at its instance to institute a survey.

As regards the actual progress made with the Survey, the examination of river basins, begun in the first and second reports, has been continued, and the results of the investigation of the river basins of the Earn (Perthshire), Eden (Fife), Tyne (East Lothian), Trent, Great Ouse, Wye and Nith (Dumfriesshire) are described in the report. During the year, the Department of Agriculture for Scotland was authorized to spend £500 on the equipment and maintenance of river discharge measurement stations. The existing level-indicating and recording stations on the Clyde, Kelvin, Irvine and Tay have been maintained and stations established on the Earn, Eden, Tyne and Nith. The Tweed basin has also been reconnoitered. In the sphere of underground water, the field work carried out by the Geological

Survey in the Nene basin has been continued, and work is proceeding on a memoir dealing with the underground water resources of an area which includes Northampton and Oxford. The results of measurements for twenty-eight gauging stations in fourteen river basins, collected by various authorities, have been published as "The Surface Water Year Book of Great Britain, 1935/6". The report also deals with several technical difficulties which have been met with during the process of collecting these statistics, and recommendations are made about recording charts and arrangements for securing accuracy of measurement.

Scientific and Industrial Research in New Zealand

AN admirable survey of the work carried out under the Council of Scientific and Industrial Research, New Zealand, during 1927-38 has been issued by the Department as Bulletin No. 69. It includes accounts of work carried out by the Dairy Research Institute, the Plant Research Bureau and the Wheat Research Institute, as well as of the activities of the Department in soil survey, fruit research, animal research, tobacco research and the work of the research associations. The work of the Dairy Research Institute on the cause and control of openness in cheese is described in some detail, as well as further work on discoloration in cheese, and on cheese manufacture. Reference is made to the work of the Plant Diseases Division on chemical sprays and the spray certification system which has been introduced, as well as on virus diseases of tobacco, tomato and of potato, and the importance of the methods introduced for the control of smut of barley. The contribution of the Wheat Research Institute to the improvement of the technique of wheat growing and harvesting, the growing of varieties most suitable for special districts, and cheapening the cost of production is emphasized, as well as the selection and distribution of a new wheat, Cross 7, which yields as well as standard varieties, and has by itself a baking quality equal to that of the old varieties plus the proportion of Canadian wheat formerly used. Fruit research has covered manurial experiments on fruit tree nutrition, boron as a cure for internal cork of apples, orchard sprays, wrappers for fruit; and the soil survey studies have included reference to the physiological diseases of plants. An important discovery in the field of animal research relates to the wasting diseases caused by deficiencies in the diet of cobalt, to which the bush sickness in the North Island, Morton mains disease in the South Island, and Glenhope ailment in Nelson are due.

Commercial Applications of Blended Light

IN practical work, the term 'blended light' is used to describe the mixture of the light from the ordinary tungsten gas-filled lamps with that from mercury discharge lamps. A. H. Olsen contributes a paper to the *Electrical Review* for May 26 in which he discusses the blending of the light from these lamps. A gas-filled lamp depends on the light emitted by a tungsten

filament; it therefore produces a continuous spectrum, red being prominent, but lacking in blue. The resultant colour is yellowish. A mercury lamp depends on the excitation of vapour and consequently emits a light with a broken spectrum, red rays being almost completely absent and blue being very pronounced. If the two light sources are mixed in the proper proportions, we get an approximation to white light. The effective application of this to shop lighting depends on the type of goods displayed; so no definite ratios of the two lights can be fixed and each installation is examined experimentally. In the case of drapers, furnisiers and outfitters, where fabrics are displayed, the proportion of tungsten lumens to mercury lamp lumens is generally in the proportion of three to one. In practice, this means utilizing one 80-watt mercury lamp with two 200-watt tungsten lamps. When this is done, the colours of the fabrics appear much the same as with daylight. Black appears of a richer lustre, and red shades do not appear mauve as they do under mercury light. Although the consumption of electricity might have been expected to be less than if only tungsten lamps were used, it is found that owing to the amount of tungsten light required to blend with the mercury light, the consumption is much the same. In most of the main town shopping centres, blended light installations present a striking contrast to competitive windows in the same area, being much more prominent and displaying the goods more effectively.

Bureau of American Ethnology, 1937-38

ALTHOUGH the normal activities of the Smithsonian Institution have been curtailed of recent years owing to economic conditions in the United States, the Bureau of American Ethnology has been able to maintain its operations in the field, and even to extend them in archaeology, owing to the provision of Federal finance and the supply of labour made available by measures for relief. A summary statement of the research carried out by members of the staff in the period 1937-38 is given in the fifty-fifth annual report (Washington, D.C., 1939. Pp. 8) covering that statistical year—an exiguous document in comparison with the more elaborate accounts familiar to anthropologists in earlier years. A major work of archaeological excavation was that of the Lindenmeier site in Colorado, where Dr. F. H. H. Roberts, jun., has continued the work of exploration of the habitation site of Folsom man which he initiated in 1934. His operations in the summer of 1937 uncovered an area of 2,800 sq. ft., and 735 specimens were obtained, including a number of new types of stone implement. Early in the season 1938 evidence of the artistic effort of Folsom man, "one of the earliest known of New World inhabitants", came to light in the form of pieces of bone with attempts at engraved design. An interesting investigation approaching completion is Dr. John R. Swanton's research on behalf of the United States De Soto Expedition Commission, of which he is chairman. It involved one field expedition in the year, when Dr. Swanton visited Alabama for the purpose of examining old Indian town sites which might possibly be

identified with those mentioned by De Soto. An extended ethnological exploration of western South America has been planned, which was initiated when in April last Dr. J. H. Steward left Washington for Ecuador, where he has since been at work among the highland Indians.

Britain in the Dark Ages

THE northern sheet of "The Map of Britain in the Dark Ages" (Ordnance Survey Office, Southampton, 1939. Pp. 43. Price 5s. net) is, if possible, of even greater interest than the southern sheet issued by the Ordnance Survey in 1935. This is not least, perhaps, because it serves to emphasize the imperfections in the material, while affording suggestion of the more urgent provinces to which further research should be directed, if any substantial advance in knowledge is to be made. Thus, for example, brochs and earth-houses do not appear here, being reserved for future separate treatment, owing to the difficulty of determining their chronological relation to the period covered by the map. This period, roughly, is from A.D. 440 to 840, an approximation to the date of the union of the kingdom of Picts and Scots under Kenneth, son of Alpin. In regard to technical details, the scale of the map is 1:1,000,000. The practice in the use of symbols of archaeological maps previously issued by the Survey is maintained, the form of the symbols suggesting the objects, additions being made to the symbols already in use as required, as, for example, in indicating the distribution of Pictish symbols. An expository introduction deals with certain broad questions—the extent and location of the British, Scottish, Pictish and Anglian regions, the distribution of tribes, the lines of early roads, and the like. The section in which the roads are traced is a particularly instructive synthesis of geographical and archaeological argument, although the editor modestly disclaims any attempt at original research and professes to do no more than record existing knowledge. The discussion of the range of distribution of the ethnic groups brings out very markedly the need for both a systematic survey of Scottish place names and of systematic excavation, directed to specific ends, mainly chronological.

Tribute to the Memory of Sir Victor Horsley

SIR VICTOR HORSLEY was far from being merely a great surgeon. His death while still in the full plenitude of his powers deprived the world of a remarkable personality which expressed itself effectively in many fields, and his old friend and fellow-worker, Mr. C. J. Bond, has done well to place on record personal notes ("Recollections of Student Life and Later Days", 1939. H. K. Lewis and Co. Pp. 48) of an association lasting forty years. Neuro-psychical phenomena held an irresistible attraction for both men, and in elucidating Horsley's share in some of their conjoint work, Mr. Bond outlines some of the conclusions to which he was led by these and other independent researches the scope of which is indicated by his query: How has it come about that the neural machinery exists for the carrying out of neuro-psychical activities in a dual manner while on the psychical side the more