

Smithsonian Institution Activities

THE report of the Secretary of the Smithsonian Institution and the financial report of the Executive Committee of the Board of Regents for the year ended June 30, 1941, includes a summary of the year's activities and reports on the United States National Museum, the Bureau of American Ethnology, the International Exchange Service, the National Zoological Park, the Astrophysical Observatory, the Division of Radiation and Organisms and other activities (Washington: Gov. Printing Office. 25 cents). The Smithsonian Institution has already been assigned a number of defence problems. The revision of all solar-constant values collected by the Astrophysical Laboratory from all Smithsonian observing stations from 1923 to the present is nearing completion and publication is expected to commence in 1942. A promising method has been developed of following the sun's variation by observations limited to the blue-violet region of the spectrum.

The Division of Radiation and Organisms has continued its studies on the relation of radiation to various phases of plant growth, and much information has been acquired on the respiration of etiolated barley seedlings. In addition to improvements in the performance of the spectrograph used in measuring carbon dioxide for very short periods, the spectral effectiveness of radiation for the growth inhibition of the oat mesocotyl has been further studied, as well as those of other species of grasses, and the ultra-violet irradiation of algæ. M. W. Stirling has made further archæological discoveries in southern Mexico in co-operation with the National Geographic Society, and Dr. Frank H. H. Roberts, jun., has completed his sixth and final expedition to the Lindenmair site in northern Colorado, work which has added greatly to our knowledge of Folsom man and the early occupation of America. The work of the International Exchange Service was seriously hampered by world conditions, but scientific and other publications which cannot now be sent are being stored until the end of hostilities.

Meteorology in Art

MR. L. C. W. BONACINA'S paper on the "Scenic Approach to Meteorology" (*Quart. J. Roy. Meteor. Soc.*, Oct., 1941), his fifth essay on the landscape-impression of weather, is a valuable contribution to that co-operation between science and art which is so important for the development of human personality. Truth and beauty, long kept in separate compartments of the mind, are now being welded together, a task in which Mr. Bonacina is a diligent and gifted worker. The papers of 1937-38 contain analyses of the paintings of Constable and Turner; that of 1939 carries on the subject to the treatment of landscape-meteorology by men of letters, and those of 1940-41 deal with the pictorial relation of atmosphere and the landscape background as seen by the author. In these descriptions there is a power of expression which enables the reader to share that faculty of observation with which the writer is endowed. Development of the æsthetic appreciation of Nature is especially valuable at the present time. At long last it is beginning to be realized that beauty should take an equal place with truth and goodness in that trinity of enduring values which is needed to fortify the mind during the stress and strain of war.

Rainbow Bridge over the Niagara Falls

THE approaching completion of the Rainbow Bridge at Niagara Falls, is a happy augury of that closer co-operation between the United States and Canada which has been intensified by the present state of world relations. The bridge was built under the auspices of an international body, the Niagara Falls Bridge Commission, consisting of eight members, four having been appointed by the Governor of New York and four by the Lieutenant-Governor of Ontario. The project has been financed by a bond issue of four million dollars.

The previous bridge at the same place, the correct name of which was the Falls View Bridge, was built in 1895. This was an arch structure which stood until January 27, 1938. On that day an ice jam which had formed in the gorge rose to an unprecedented height, and crushed the end portions of the arch ribs, causing a complete collapse of the bridge. The Falls View Bridge was the property of the International Railway Company, which after its destruction immediately prepared plans for a new structure. Public opinion, however, opposed the construction of another privately owned toll-bridge at this site and as a result the Company did not proceed with the plans for rebuilding. The Niagara River at the Bridge site flows through a gorge approximately 1,250 ft. wide and 180 ft. deep from the surface of the water to the top of the cliffs. The river is about 830 ft. wide and 175 ft. deep, and the flow is 25-30 m.p.h.

Demonstration of the Circulation by Experiment

IN a recent paper (*Isis*, 33, 443; 1941) entitled "The Significance of the Demonstration of the Harveyan Circulation by Experimental Tests" Dr. H. P. Bayon raises the question already put forward by Sarton in 1937 as to why the discovery of the circulation of the blood was completed by an English physician and why its acceptance was delayed until the middle of the seventeenth century. Galen's erroneous doctrine of the to-and-fro movement of the blood which was accepted for so long a period was based on the belief that the anatomical features of the heart, uterus and liver in the dog or pig must also be present in man. According to Dr. Bayon, the delay in the acceptance of Harvey's discovery of the circulation until the middle of the seventeenth century was due to the fact that it was not until then that accurate comparative anatomical observations became available through woodcuts, printed works and dissection. It was by the intelligent use of the experimental method that Harvey was able to test and control his interpretation of clinical observation and comparative anatomy. His investigations were completed by the discovery of the capillaries, which formed the missing link between the arteries and veins.

Golf Courses during War-time

VOL. 6 of the *Journal of the Board of Greenkeeping Research*, which has just been published, shows that the Research Station at Bingley is adapting itself most successfully to the new problems which are confronting golf clubs owing to the War. Land is being ploughed up on many courses, hay and silage crops are being taken from others and sheep-grazing is widespread. In consequence, the erection of adequate fencing has become a major problem. Trials are

described which show that electrified fencing is likely to prove a simple and effective method of control, while at the same time it gives a cash saving of 80–90 per cent over the ordinary post and wire type. Methods for making silage from grass mowings have been investigated with very satisfactory results. Information is supplied as to how the grass can be collected, the type of silos to use and precisely how they should be filled. Young grass mowings are so nutritious that a really valuable contribution to the country's feeding-stuffs could be made in this way. If silage-making is not practicable, the grass mowings need not be wasted, but can be either composted for manure or dried for cattle feeding. An appeal is made to former subscribers for their continued support, as this is essential if the Research Station is to be in a position to fulfil its normal functions directly the War is over.

Certificate in Natural History

A NEW edition of the emergency regulations for the certificate of proficiency in natural history has just been issued by the University of London. The work, which has been specially designed to take advantage of the fact that large numbers of teachers are, owing to war conditions, presented with a unique opportunity of natural history study in the field, involves a directed course of private reading at home, attendance at a practical laboratory course of two weeks duration in the summer vacation, an approved plan of field-work suited to the student's locality to be written up in the form of an essay, and examination. Definite arrangements have not yet been made, but it is hoped that the practical course this year will be held at the Royal Holloway College, Englefield Green, Surrey, during July 26–August 8. Copies of the regulations and further information may be obtained from the University Extension Registrar, University of London, at Richmond College, Richmond, Surrey.

Diagrams and Formulæ for Lantern Slides

PROF. A. C. CHIBNALL, of the Imperial College of Science and Technology, London, has utilized 'Cellophane' and 'carbon' paper for the preparation, without photography, of lantern slides of line diagrams and chemical formulæ. Mr. J. W. Minnis, of the Chemistry Department, Heriot-Watt College, Edinburgh, states that he has obtained good results with two lantern-slide cover-glasses. A piece of typewriter 'carbon' paper is placed on one and the required diagrams or formulæ are drawn on the back of the 'carbon' paper, using a glass rod pulled to a point. The paper is removed, the second cover-glass placed over the carbon image, and the two glasses bound together in the usual manner. The resulting slide gave good reproduction in the lantern.

Synthetic Rubber Production in Canada

MR. HOWE, the Dominions Minister of Munitions, has announced the establishment of a Government-owned company called the Polymer Corporation, Ltd., with headquarters in Toronto, which will undertake the production in Canada of synthetic rubber of the Buna type. According to the Ottawa correspondent of *The Times*, Mr. Howe said that four plants would probably be required for the three stages of the manufacturing process to be employed. The output, when the plants are working at full capacity, is

expected to be about 34,000 tons a year, but production cannot begin before the end of 1943. Colonel Arthur L. Bishop, a prominent Toronto industrialist, has been appointed president of the Corporation, and there are four other directors.

Announcements

MR. R. A. BUTLER, president of the Board of Education, is to be chairman of the Scientific Advisory and Engineering Advisory Committees in succession to Lord Hankey.

SIR JOHN GREENLY was elected president for 1942–43 of the Institute of Metals at the annual general meeting held on March 11.

THE Committee of the Athenæum has elected the following gentlemen, under the provisions of Rule II of the Club, which empowers the annual election by the Committee of a certain number of persons of distinguished eminence in science, literature, or the arts, or for their public services: Prof. P. M. S. Blackett, Langworthy professor of physics, University of Manchester; Mr. T. D. Kendrick, keeper of British and Mediæval Antiquities, British Museum; Mr. J. M. Keynes, economist, and fellow and bursar of King's College, Cambridge.

THE following appointments in the Colonial Service have recently been made: S. R. Payne, assistant conservator of forests, Gold Coast; C. B. Garnett (senior agricultural officer, Zanzibar), senior agricultural officer, Nyasaland.

THE conference on "European Agriculture: Scientific Problems in Post-war Reconstruction", arranged by the Division for the Social and International Relations of Science of the British Association, and postponed from March 13–14 owing to the death of Sir William Bragg, will be held on March 20–21 at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, with sessions at 10.15 a.m. and 2.15 p.m. on each day as previously arranged, and the programme, so far as possible, unaltered. Fresh tickets will not be issued.

THE Science Faculty of the Marx Memorial Library and Workers' School has arranged symposia on "Science and Technology in the Soviet Union" and the "Scientific Attitude to Fascism, with particular reference to Racial Theories", to be held at the London School of Hygiene and Tropical Medicine on April 5 and 6. Papers at the first symposium will include those by Prof. J. D. Bernal, Mr. Eric Godfrey, Dr. Norman Henry, Mrs. B. King, Dr. J. Needham, Mr. H. Rose, Dr. M. Ruhemann and Mr. H. P. Vowles. Those for the second symposium include the following authors: Prof. J. B. S. Haldane, Dr. C. F. D. Hawkes, Dr. P. Gorer, Prof. H. Levy, Dr. G. M. Morant and Mrs. Dona Torr. Further information can be obtained from the secretary, Faculty of Science, Marx House, Clerkenwell Green, London, E.C.1.

ERRATA. The May Lecture of the Institute of Metals is to be delivered on May 13, not May 31 as stated in NATURE of March 14, p. 299.

In NATURE of February 28, p. 243, under "Night Sky in March" the word "occultations" of the planets was inadvertently used for "conjunctions".