

Total Solar Eclipse of May 20 : Preliminary Reports

CONTRARY to all expectation, based on the usual weather conditions in May, the expeditions to the west coast of Africa to observe the total solar eclipse of May 20 were uniformly successful, whereas those to Brazil were upset by cloudy conditions. In Santiago in Chile, conditions were cloudy but observations were made from an aeroplane above the clouds. The corona was reported as of the minimum type with equatorial streamers and polar plumes—an unusual form so near sunspot maximum. At Araxá in Brazil, the Czechoslovak party and the Swedish party under Dr. Öhman were clouded out. At Bocayuva, the Finnish party was able to carry out its time observations for the geodetic programme. The party at the same place from the American Geographical Society, the Georgetown University, Washington, and the Yerkes Observatory reports only partial success owing to clouds. Dr. van Biesbroeck secured plates of the star-field around the sun for the Einstein effect, and photographs of the corona and of its spectrum; accurate time observations of the contacts were obtained. Photographs were taken from an A.A.F. B 17 plane flying at 30,000 ft.; also a programme of ionospheric observations was successfully carried through.

In West Africa, both the Finnish and the Swedish expeditions were favoured by clear weather and were able to carry through their cinematograph programme for the determination of the contacts, on the scheme drawn up by Bonsdorff. The Swedish expedition under Dr. B. Aurell recorded cinematographically the crescent as well as the flash spectrum. The American party at Bocayuva also reports that, while there, long-exposure photographs of the southern Milky Way were taken and measurements made of the intensity of cosmic rays.

A Solar Variation of 6.6456 Days ?

DR. C. A. ABBOT, in *Smithsonian Miscellaneous Collections*, Vol. 107, No. 4, announces that "there is a regular period of 6.6456 days in solar variation, and that terrestrial temperatures respond with changes ranging from 2° to 20° F. in exactly the same average period of recurrence. While the sun's variation appears to be perfectly regular in phase, always recurring on the day predicted, the terrestrial responses come sometimes for a month or more in succession from 1 to 3 days early or late. This, which by mechanical analogy we might call backlash, is doubtless the circumstance which hitherto has prevented meteorologists from recognizing the nature of this large temperature variation." It is to be feared that "meteorologists, physicists and astronomers" who, as Dr. Abbot remarks, "with few exceptions, have remained to this day skeptical as to whether the Smithsonian observations of the solar constant really discover solar variations from day to day", will manifest the same attitude to this new announcement. It is greatly to be regretted that Dr. Abbot, who has done so much to promote our knowledge of the solar 'constant', should so persistently refrain from using standard statistical methods for the discussion of his data, and proper statistical criteria for testing the significance of his results. The use of the word 'period' in connexion with an interval given to five significant figures (or 0.0001 day), when its phase is liable to be from one to three days too early or late, will generally be regarded as inappropriate, and neither the tem-

peratures nor the solar data appear to warrant this pretention to accuracy in the period. The amplitude of the variation in both sets of data changes irregularly from one 'period' to the next, the average range in the solar variation being 0.13 per cent of the solar constant. The discussion is commendably sensible in its claims as to the practical value of this work for meteorological prediction.

National Central Library

THE thirtieth annual report of the National Central Library, covering the year ended February 28, 1946, refers to a gradually growing demand on the central stock of the Library, and on the resources of the regional library systems, university and 'outlier' libraries. Although most of the members of the staff absent on national service have now returned to the Library and new appointments have been made, the personnel has not yet been brought up to the 1939 level. The task of administration has been lightened, however, by the return from Bourne End of all the bibliographical apparatus, the union catalogues and the Library of Congress catalogue, and other material of the Bureau of American Bibliography. These are now at Woburn Square, London, and the transfer includes also the union catalogue, records and staff of the South-Eastern Regional Bureau. Among the more urgent tasks of the Library is the replenishment of the stock of the more specialized and valuable books which were lost by enemy action in 1941, and it has been arranged that the Library, next in order after the British Museum, shall select from the Inter-Allied Book Centre such books as are suitable to replace part of its losses. Another urgent task is the overtaking of large arrears of cataloguing of books which have come into the Library from various sources in recent years, and of much larger arrears of editing and incorporating entries into the national union catalogue and the union catalogue of outlier libraries, and of removing entries for books withdrawn. The executive committee has approved a request made by the executive sub-committee of the Foreign Office Committee on Russian Studies that the Library should undertake the compilation of a union catalogue of books in the Russian language in libraries in the United Kingdom.

Total issues of books from or through the Library during the year were 59,671 as against 57,672 in 1944-45. Included in this total are 5,369 volumes to university libraries as against 3,538 in 1938-39, while issues to libraries of Government departments, research and industrial organisations, etc., were 7,465 as against 2,588 in 1938-39. Issues from the Scottish and Irish Central Libraries were 12,412 and 13,651 respectively, while 10,701 volumes were issued from the Adult Class Department. 'Outlier libraries', of which a list is given in the report, lent 8,512 books as against 11,361 in 1938-39, and 88,728 books were lent by the regional library systems in England, Wales and Scotland.

A.W.A. Technical Review

FOR several years past, some of the progress made by Australian workers in the field of radio-frequency technique has been recorded in the *A.W.A. Technical Review*, published by Amalgamated Wireless (Australia), Ltd., in Sydney. The first number of volume 7 (September 1946) of this publication contains several papers of interest, some of them describing measuring equipment developed by the above

organisation. A resistance-capacitance beat-frequency oscillator covering the range 0-5,000 cycles per second is described by D. S. Robertson and L. C. Nye, certain features underlying the design having been developed theoretically in another paper by L. E. V. Lynch and D. S. Robertson. A description is also given by L. G. Alexander of an equal-ratio impedance bridge by means of which impedances can be measured to a precision of 1 per cent or better at frequencies up to 3 Mc./s.; while two special-purpose receivers covering the range of frequencies from 50 kc./s. to 50 Mc./s. are described by B. Sandel. In a paper entitled "Directional Patterns of Rhombic Antennæ", W. N. Christiansen examines the spatial radiation patterns of typical rhombic antennæ in relation to that of a large tuned array, to which a single rhombic is inferior. After discussing various simple designs, the author shows that it is possible to arrange several rhombics in the form of an interlaced 'end-on' array so as to produce over the whole frequency range of the rhombic a directional radiation characteristic which compares well with that of a tuned array at its single designed frequency. Other papers in this issue deal with such subjects as the application of a Geiger counter for determining the thorium content in wire used in valve manufacture, a radio-frequency form of high-tension supply for cathode-ray tubes, and a vacuum-sealed relay designed for operation with aircraft aerials transmitting at high voltages.

Bacteriology in the Kitchen

AN interesting article by Dr. Irene Hutchinson (*Brit. Med. J.*, 134, Jan. 25, 1947) directs attention to the unsatisfactory methods employed in many communal feeding centres for the cleaning of utensils used for eating. In a London dormitory town in which food inspection was kept at a very high level, unannounced visits were made to twenty-five kitchens of hotels, restaurants of multiple stores, day-nursery kitchens, tearooms, snack bars and a civic restaurant. Samples of washing-up water in actual use were taken at the peak hour between 12.30 and 1.30 p.m., when conditions were at their worst, and swabs were taken from spoons, cups, forks, glasses and plates which had been used and washed and were ready to be used again. The organisms obtained from these sources are listed, and Dr. Hutchinson concludes that the cleaning of eating utensils is "very unsatisfactory, and that pathogenic organisms are likely to be spread by the users of different articles". The lack of washing machines, the difficulty of getting soap and washing powders and the scarcity of drying towels make it very difficult to feed people hygienically. In one only of the twenty-five kitchens were dysentery bacilli found on spoons, and Dr. Hutchinson comments that this "may suggest the origin of the sporadic case of 'diarrhoea'". Other findings of pathogenic staphylococci may help to explain the high incidence of septic mouth lesions so common during recent years. The proprietors of the various premises visited showed great interest in the work and helped it in every way that they could. An annotation in the same issue of the *British Medical Journal* (p. 143) critically discusses the results obtained, and suggests that the greatest need is for education of the people who handle food. In the United States much progress has been made in this matter, and in Great Britain the Central Council for Health Education is arranging courses of instruction on food hygiene for food handlers (*Health*

Educ. J., January, 1947, p. 11). Facilities for dish-washing and for the cold storage of food, says the annotation, need to be greatly improved. Few people will disagree with this conclusion. It may be compared with the need for the adequate treatment and care of milk bottles which was discussed in *Nature* (153, 31; 1944).

Agriculture in Malaya

AFTER a break of five years, the *Malayan Agricultural Journal* has reappeared, though for 1947 it will be published as a quarterly only. Vol. 30, No. 1, contains a message from the governor of the Malayan Union, Sir Edward Gent, and a foreword from the Director of Agriculture. The Department was fortunate in being able to resume active work through its field branch shortly after the liberation of Malaya, the staff being now almost back to pre-war strength. Food production and general rehabilitation have been its chief immediate concern, but long-range plans are already under consideration. These include the establishment of a Central Government Fruit Experiment Station, the rehabilitation of rubber small-holdings of high-yielding clonal material, canning and food preservation, the expansion of the School of Agriculture at Serdang, and development of the livestock industry. Among the original articles in this number is an account of intensive gardening in a prisoner-of-war camp which cannot fail to be of interest to all readers.

'Positex'

AN 8-page pamphlet, 'Positex' Pamphlet No. 2, published by the British Rubber Development Board, 19 Fenchurch Street, E.C.3, and written by Dr. C. M. Blow, deals with the compounding, pigmenting and thickening of 'Positex', a form of rubber latex in which the particles carry a reversed or positive charge. There are also some notes on the removal of rubber from fibrous materials. The research work referred to in the pamphlet was carried out by the Wool Industries Research Association, in collaboration with the Technical Research and Development of New Uses Committee of the Rubber Growers' Association, and later with the British Rubber Producers' Research Association. The introductory pamphlet to the series gave a general account of the material and of its possible commercial applications. Licensees for 'Positex' in Great Britain are Messrs. Revertex, Ltd., King William Street House, Arthur Street, London, E.C.4, and Messrs. Veedip, Ltd., St. Helens Works, Slough.

Engineering Degree Courses for Ex-Servicemen

MR. O. S. PUCKLE, of R. F. Equipment, Ltd., Langley Park, Nr. Slough, Bucks, recently invited inquiries from engineers and others wishing to study for science and engineering degrees (*Nature*, April 12, p. 497). He now states that he has received a total to date of ninety-three completed questionnaires. Of these, fifty-one are from the London area, including Dartford and south-west Essex, and ten from Stoke-on-Trent. The numbers in each of the other localities are too small to make it possible to ask the Ministry of Education to take action; but it is hoped that in London and Stoke it may be possible to arrange the suggested courses. He is communicating with the Ministry of Education, to whom the questionnaires and an analysis of the results are being sent. Those who have not yet returned the questionnaires for