

News and Views.

DR. A. W. BORTHWICK, formerly lecturer in forest botany at the University of Edinburgh and afterwards serving under the Forestry Commission, was recently appointed to the new chair in forestry at the University of Aberdeen. In his inaugural address, after a preliminary survey of the increasing utility of the products of the forest in supplying many of the everyday needs of the public, and the consequent necessity for the conservation and efficient management of forests, he dealt with the rôle of the university in connexion with the practice of forestry. He considers that a university school of forestry should have three principal aims: (1) To give instruction in the theory and practice of forestry; (2) to conduct research; (3) to advise and assist the owners of forest lands in the management of their woods. "Each of these aims," said Prof. Borthwick, "is important in itself, and not the least important is No. 3. The Department can be of direct help to owners of forests and forest lands, by correspondence, lectures, and personal inspection of woodlands, plantations and lands to be planted. In return the Department is kept in close touch with field problems as they arise, and this is bound to be of use in indicating the kind of instruction to be given to young foresters in training, and also in bringing to notice problems for the elucidation of which further research is required. By concentration on (3) such aims and correlating them into an organised unity, the Department will be kept from going to sleep, a condition only too liable to occur when an overdose of academic forestry is indulged in."

In the above remarks Prof. Borthwick would appear to be referring to British woods alone. Whilst these are of very great utility for the more elementary portions of the practical courses given to the university forestry student (the future commissioned officer), the latter would be very inadequately equipped for his work, either in Great Britain or out in the Empire forests to which service the greater proportion of the university-trained men go, were the instructor to confine the practical work or his own studies to Great Britain. Prof. Borthwick correctly recognises the importance of this part of the work, and gives an interesting dissertation on the varied branches of forestry education. But his address does not lay stress on the necessity of giving to the future university graduate in forestry practical courses on a far higher plane than anything which Great Britain can provide. To turn out graduates for service either at home or in the Empire (where the demand is far larger) necessitates a continuous study on the part of the staff of the changing conditions and progress (alluded to by the author himself) constantly taking place in the management of the forests of the world. In practice it has been found that only by such means can the forest officer of the future be sent forth with that wide and unbiassed outlook on forestry problems which it is so desirable that he should start with—in so far as it can be implanted in the minds of young men in the all too short space of a university career.

THE Wellington correspondent of the *Times* announces that Dr. Ernest Marsden, assistant director of education, has been appointed permanent secretary of the new Industrial and Scientific Research Department that is being established in New Zealand. This action has been taken on the recommendation of Sir Frank Heath, Secretary of the Department of Scientific and Industrial Research in London, who has recently completed a tour of investigation in Australia and New Zealand. We referred in our issue of May 15, p. 697, to Sir Frank's recommendations for the reconstitution of the Commonwealth Institute of Science and Industry in Australia, and, again, in the issue of July 10, p. 57, to the Bills which have been passed by the Commonwealth House of Representatives to give effect to these recommendations. In introducing the measures, the Prime Minister, Mr. Bruce, referred to the large sums spent on research in public and semi-public institutions in the United States and stated that, for the present, the new Council for Scientific and Industrial Research in Australia will devote its attention to a limited group of problems—liquid fuels, cold storage, and the preservation of foodstuffs, forest products, animal diseases and pests, plant diseases and pests. It is to be hoped that the Council's activities will soon be extended, while the Science and Industry Fund of 100,000*l.*, which has been established for providing assistance to those engaged in scientific research and in the training of students in scientific research, should prove an important step towards meeting the very real need in Australia for competent research workers.

THE personnel of the Commonwealth Council for Scientific and Industrial Research has been announced in the Australian House of Representatives by the Prime Minister. The members are: *Executive Committee*: Mr. G. A. Julius (chairman), Mr. W. J. Newbigin, and Prof. A. C. D. Rivett. *Chairmen of State Committees*: N.S.W., Prof. R. D. Watt (Agriculture); Victoria, Sir David Orme Masson (Chemistry); Queensland, Prof. H. C. Richards (Geology); South Australia, Prof. T. Brailsford Robertson (Biochemistry); Western Australia, Mr. B. Perry (Manufacturing industries); Tasmania, Mr. P. E. Keam (Agricultural and stock-breeding industries). *Co-opted Members*: Prof. E. C. Goddard, Queensland (Zoology and botany); Prof. H. A. Woodruff, Victoria (Veterinary pathology). The Council held its first session on June 22-25, and adopted general plans for work during the next twelve months. Its proposals apply chiefly to primary industries. As was foreseen by Sir Frank Heath, the operations of the Council will be hampered for some time by the lack of a supply of highly trained young investigators. Assistance will be sought from abroad, and extensive plans are being put into effect for sending promising Australian graduates to England and the United States for special training.

THE radio communication Bill, which was to regulate the use of radio in the United States, failed to pass

Congress before the long vacation. During the next six months, therefore, there is a risk of serious confusion in broadcasting development in the States. The Department of Commerce has allotted 89 wave-lengths to 528 stations, and there are 650 further applications for station licences awaiting consideration. Now, however, they are left without authority either to grant or to refuse any application. The Secretary of Commerce, Mr. Hoover, has hitherto been regulating all transmission mainly through a 'gentleman's agreement' with the broadcasters themselves. The Bill discussed in Congress expressly declared that it was the intention of the Federal Government to preserve the channels of radio transmission as "perpetual mediums under the control and for the people of the United States." Licences are limited to two years and are not available to aliens or to any applicant "who has been convicted of monopolising or attempting to monopolise the radio business." Broadcasting is apparently becoming very profitable as an advertising medium in the United States. According to the *Times* of July 27, so much as 50,000*l.* has been offered for the transfer of a licence. Licences were recently issued in Chicago to the Moody Bible Institute and the Chicago Federation of Labour. To farmers in the United States broadcasting has proved to be a great boon. Mr. Pickard, the radio officer of the Department of Agriculture, has stated that broadcasting is doing more for the farmer than any other single contribution of science during the century. Farmers living so far as 60 miles from a railway have been induced by radio lectures to change their methods of farming to more profitable systems.

ALTHOUGH windmills have been in use for more than a thousand years, yet accurate data as to their efficiency cannot easily be obtained. The Institute of Agricultural Engineering of the University of Oxford has therefore made a useful contribution to our knowledge of the subject by publishing a report on the use of windmills, more especially for the generation of electricity. A windmill experimental station was erected on the Annables estate, midway between Harpenden and Luton. The field slopes south-westward towards the Dunstable road, and seven windmill plants of various types have been erected on it. The site is a good one, as it obtains the benefit of unrestricted winds from all directions. Full results of the economic, technical and meteorological observations extending over a period of one year are given. The cost per electric unit utilised varied between 12·7 pence and 4·0 pence. By using improved wheels the cost of production for the smaller and more inefficient mills could be reduced by 30 or 40 per cent. Considering the very small dynamos used, having an output of only a few horse-power, these results are quite satisfactory. Some of the plants begin to operate when the wind attains a velocity of about six miles per hour and cease operating when the velocity falls to five miles per hour. The output increases more rapidly than the velocity of the wind. The results prove that, in districts remote from a public electric supply, small windmill power schemes might prove useful and economical. Those who already

own an engine-generating set and desire to supersede or supplement it should consider adopting wind power. It is also to be remembered that on higher sites than Harpenden or on districts nearer the coast better results would probably be obtained. In Denmark and Germany considerable use is made of wind power in generating electricity.

ALTHOUGH it may be pleaded that a state of chaos in human undertakings has a certain evolutionary value, as being indicative of potential progress, the complexity of civilised life nevertheless necessitates the logical classification of a vast amount of important information as a condition of ordered progress. Bibliographies of scientific and technical literature come well within this category, and their number is constantly increasing. Collective indexes are indispensable to the scientific worker, and although they are very costly to produce, the labour and expense involved in their production cannot be obviated. Bibliographies of general subjects are less essential and have been comparatively neglected, hence we welcome the publication of "A Bibliography of Research" by the National Research Council of the United States, a small volume containing about 800 references to articles on research that have appeared in scientific, technical and trade journals during the years 1923, 1924 and 1925. To facilitate reference, the material has been subdivided into forty classes, a difficult task which has involved a considerable number of duplicate entries; thus four of five references to the National Physical Laboratory given under the heading 'Physics' are repeated in full, and with different index numbers, under the heading 'Research—General: Laboratories.' The bibliography might also be criticised from the point of view of completeness, to which, however, no claim is made. Thus only one of the annual reports of the Committee of the Privy Council for Scientific and Industrial Research is included; and there are very few references to German (11) and French (18) literatures, whilst other continental countries appear to have been neglected. Although criticisms of this kind are not difficult to make, the publication will undoubtedly be most useful to all interested in the general subject of research, and the National Research Council is to be congratulated upon its production.

It is gratifying to note that anthropological investigations in Canada continue to be actively prosecuted under official auspices. The report of the Department of Mines for the fiscal year ended March 25, 1925, which has just been issued, contains a report of the Victoria Museum covering the work of the anthropological and the biological divisions. Apart from the work of cataloguing, arranging, and preserving specimens, the anthropological staff has been engaged on a number of field expeditions. Mr. Harlan I. Smith visited the Bella Coola Indians of British Columbia, Mr. C. M. Barbeau was engaged among the Gitksan Indians of British Columbia, Mr. D. Jenness continued his work of the previous fiscal year among the Carrier and Sikani Indians of British Columbia, and Mr. F. W. Waugh visited the

Montagnais Indians of the Lower St. Lawrence, whence unfortunately he did not return, as he disappeared mysteriously after visiting an Indian reservation in September 1924, and has not since been traced. A large number of specimens, photographs, and phonograph records were added to the Museum collections as a result of these expeditions, and records and studies of specific subjects under observation have appeared in various scientific journals.

THE growth of the regional survey movement as the geographer's special field of research and contribution to our knowledge of Great Britain has been marked in recent years. The Geographical Association in helping to foster this movement has published in the *Geographical Teacher*, vol. 13, No. 75, a list of libraries, museums, universities, and societies which have in their keeping or are undertaking surveys for their respective areas, also a long list of actual surveys and a list of civic surveys that have been published. The Association also hopes to make a special collection in its lending library of works and bibliographies dealing with special regions. A bibliography of Hertfordshire is published as a specimen. The lists given in the present number do not claim to be exhaustive, and will be added to from time to time as more information is sent to the Secretary of the Regional Survey Committee, Geographical Association, Marine Terrace, Aberystwyth. Some useful suggestions are also made for uniform systems of registration on maps.

At a representative meeting held in March last, it was resolved to found an Institution of Fuel Technology, and a committee was appointed to prepare a constitution. A further meeting was held on July 30, when the draft constitution was formally adopted and the following officers were elected: *President*—Sir Alfred Mond; *Vice-Presidents*—Lord Aberconway, Prof. H. B. Dixon, Sir Robert Hadfield, Bart., Lord Weir, and Mr. D. Milne Watson; *Council*—Mr. R. A. Burrows, Sir Philip Dawson, Dr. F. A. Freeth, Sir William Larke, Dr. R. Lessing, Mr. M. Mannaberg, Sir Edward Manville, M.P., Mr. S. McEwen, Lord Montagu of Beaulieu, Sir Richard Redmayne, Admiral Sir Edmund Slade, Mr. Wallace Thorneycroft, Dr. M. W. Travers, Prof. R. V. Wheeler, Mr. W. A. Woodeson, Mr. G. R. Thursfield, Mr. T. Hardie, Mr. A. H. Middleton, and Mr. W. M. Selvey; *Hon. Treasurer*—Sir William B. Peat; *Hon. Secretary*—Mr. Edgar C. Evans, Caxton House (East), Tothill Street, S.W. An autumn or winter meeting for the discussion of papers is to be arranged.

A RATHER severe earthquake, strong enough to throw down a few chimneys and to fissure buildings, was felt in Jersey on July 30 at 2.18 P.M. In France it was felt at St. Malo and Rennes; in England, at Bournemouth and other places on the coast of Sussex and Hampshire. In strength and area of disturbance, it closely resembles two others that have visited the same district during the last half-century. The earlier of these, on January 28, 1878, disturbed an area of about 68,000 square miles, including Havre, Rouen, and Paris, as well as London, Bovey Tracey,

Brighton, and St. Leonards. Its centre lies probably a short distance to the east of Jersey. Again, on May 30, 1889, another, and stronger, shock was felt over about the same area, and originated in or close to the same focus.

THE meeting of the British Association at Oxford in 1894 is probably best remembered as the occasion on which Lord Rayleigh and Sir William Ramsay, who have both since passed away, announced the discovery of the new gas argon in the atmosphere. In an article in the August issue of *Discovery*, Sir Oliver Lodge gives some reminiscences of the meeting and makes it clear that it should also take its place in the history of radio-telegraphy. At that time, Hertz had recently died and as a memorial to him Sir Oliver had repeated some of his experiments on the transmission of electromagnetic waves at the Royal Institution, using the Branly iron filings coherer and galvanometer as receiver, instead of the original point coherer and telephone. These experiments were shown again at the British Association meeting, and long and short signals corresponding to the Morse code were transmitted through the air from a neighbouring room to the large lecture theatre of the Oxford Museum, where they were demonstrated to an enthusiastic audience by the aid of a Kelvin mirror galvanometer.

WE have recently received from Prof. S. A. Forbes, Chief of the Natural History Survey Division of the State of Illinois, a reprint of a paper entitled "The Lake as a Microcosm," originally read and published in 1887. This paper, of some fourteen pages, was reprinted many years ago, but has long been out of print. The descriptions of conditions—physical and faunistic—apply especially to the lakes of Illinois, and the paper has therefore been much used by the students in the State University, while reference to problems of general interest has led to a demand for it also elsewhere, and to its reissue in the *Bulletin of the Natural History Survey* (vol. 15, article 9).

THE Ministry of Agriculture and Fisheries has recently republished its various leaflets on "Insect Pests of Farm and Garden Crops" in collected form as Section Volume No. 11. Altogether twenty-seven leaflets are reprinted and they form a volume of 111 pages, including introductory remarks on the general principles underlying the application of control measures. The production of these leaflets has greatly improved in recent years, and the illustrations are of a higher standard. The information concerning the habits and methods of combating different pests is trustworthy and up-to-date, the results of recent research being incorporated in easily understandable language. There is no doubt that many growers will welcome the appearance of so much practical information in a form more convenient than that of separate leaflets, which are easily lost unless systematically filed. The low price of 1s. 3d. (post free) should bring the volume within reach of all who are likely to benefit by consulting it. It is obtainable from the Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W. 1.

THE "Statistical Report of the Health of the Navy for the Year 1923" is presented by the Director-General, Surgeon Vice-Admiral Sir Joseph Chambers, K.C.B., and issued by H.M. Stationery Office (5s. net). The returns for the total force (89,100) show a marked improvement in the general health of the British fleet compared with the previous two years, the case, invaliding and death ratios all showing a decrease. This is doubtless largely due to the preventive measures now adopted. Health lectures are given by medical officers, and the men are warned of the risks they run in drinking polluted waters, eating raw vegetables and salads, oysters and other shellfish, and the rôle of flies in the spread of disease is explained. All water taken for drinking and cooking from the shore is chlorinated, and all fresh milk used, unless the source is well known, is sterilised. The excreta of all enteric patients are examined during convalescence on three occasions at monthly intervals, so as to eliminate carriers. All officers and men detailed for the Mediterranean, East Indies, and China stations are inoculated against typhoid and paratyphoid fevers before leaving England.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A public analyst for the borough of Northampton—The Town Clerk, Guildhall, Northampton (August 16). An

assistant lecturer in agricultural zoology at the North of Scotland College of Agriculture—The Secretary, 41½ Union Street, Aberdeen (August 19). Lecturers in agriculture, botany, and entomology and zoology at the Imperial College of Tropical Agriculture, Trinidad—The Secretary of the College, 14 Trinity Square, E.C.3 (August 21). An assistant lecturer in electrical engineering at the Royal Technical College, Glasgow—Prof. S. Parker Smith, Royal Technical College, Glasgow (August 23). A research assistant for work in connexion with colliery wire ropes, and a junior research assistant for work on materials and structures used for the support of underground workings—each under the Safety in Mines Research Board—The Under Secretary for Mines, Establishment Branch, Mines Department, Dean Stanley Street, S.W.1 (August 25). A technical officer for design of wireless apparatus for service aircraft and aerodrome use—The Superintendent, Royal Aircraft Establishment, South Farnborough, Hants (August 28, quoting No. A.121). An instructor in bee-keeping in the department of Agriculture of the University of Leeds—The Registrar (August 28). An assistant in the botany department of the University of Aberdeen—The Secretary (August 30). A head of the Department of Industrial Administration and a lecturer in the same subject at the Manchester Municipal College of Technology—The Registrar (September 20).

Our Astronomical Column.

SUNSPOT ACTIVITY.—Of the two naked-eye spots, Nos. 7 and 8, which were on the sun's disc together during the last week of June, the first had entirely disappeared when its position came again into view, and the second had diminished to a relatively small spot. A new group of considerable size has, however, been seen recently in transit across the disc and was a conspicuous naked-eye object to those observers who habitually watch these large spots. In a refracting telescope of 3 or 4 inches aperture, much interesting detail could be seen in the penumbral filaments. In type the group conformed fairly closely to that of a 'normal' stream, with a well-defined circular leader, a composite follower 12° in longitude behind, and a cluster of small unstable spots between. The axis of the stream was inclined about 15° equatorwards. Both the leading and following spots were large enough to be visible separately to unaided vision, especially on July 29, when their separation of 12° solar longitude was equivalent to nearly 4'.

The latitude of the group should be noted. Hitherto, no important group has appeared this cycle so near the sun's equator. In previous cycles, the first very large spots in latitudes so low as 10° have occurred about two years before the respective maxima. Data of position and area (expressed as a fraction of the sun's hemisphere) of the recent spot are as follows:

No.	Date on Disc.	Central Meridian Passage.	Latitude.	Area.
9	July 24-Aug. 5	July 30°0	11° S.	1/550

NAMING OF MINOR PLANETS.—The three planets that commence the second thousand have received names that recall the circumstances of the discovery of Ceres, the first member of the family, about a century and a quarter ago (*Astr. Nach.* No. 5454).

Number 1000, discovered by Reinmuth, has been named Piazzia, after the discoverer of Ceres; 1001, discovered by Beljovsky, has been named Gaussia, after the calculator of Ceres' orbit; and 1002, discovered by Albitzky, has been named Olbersia, after the detector of Ceres at its second opposition. These appropriate names were given by Mr. B. Asplind of Karlstad, Sweden, with the consent of the discoverers.

LUNAR AND PLANETARY TEMPERATURES.—The results of an investigation of planetary temperatures by Menzel, Coblentz and Lampland by means of the radiation transmitted through a water cell, are described in the *Astrophysical Journal*, vol. 63, p. 177. The theory of the method has previously been given by Menzel (*Astroph. Journ.*, vol. 58, p. 65), and rests on the fact that the solar energy reflected from a planet is of short wave-length, whereas the radiated planetary energy is of much longer wave-length. The water-cell transmission gives a measure of the ratio of the short-wave solar energy to the total energy, and hence of the amount of planetary radiation which is able to pass through our atmosphere. This atmospheric transmission depends on the spectral distribution of the radiation, and therefore, finally, upon the planetary temperature. The results of the latest work seem to show that the temperature of Mars may reach 10° C. at perihelion, but with large diurnal fluctuations (the night temperature being probably below -85° C.). The bright areas on Mars appear to be at a lower temperature than the dark areas, and the temperature of the south polar cap ranges from -100° C. to -15° C., suggesting ice or snow as a possible cause. Some results are also given for the moon, Venus, Jupiter, Saturn, and Uranus. There seems to be no evidence of internal heat in any of the giant outer planets.