

bearings and wear, and a number of other problems which Australia was not equipped to handle, and which the outbreak of war and the expansion of secondary industries had rendered important. Dr. F. P. Bowden was retained by the Council to build up the Section. The University of Melbourne collaborated fully in this work, and laboratory accommodation was provided in the new buildings of the Chemistry Department. During the war years, the section was occupied with a variety of problems, such as the development and manufacture of aircraft bearings; the development of cutting oils, of drawing fluids, of special lubricants and of flame-thruster fuels; studies of cylinder wear, of the wear of producer gas engines, and of the friction and wear in gun barrels; investigations on the detonation of explosives by friction and by impact; the development of equipment for measuring the muzzle velocity of guns at sea, and other work for the Navy, Army and Air Force. It was also engaged in a number of more fundamental investigations, both physical and chemical, which included the study of friction and lubrication. Dr. S. H. Bastow has now taken charge of the Section and a permanent laboratory for it will be built in the University of Melbourne. The Section is maintaining close working collaboration with Dr. Bowden's new research laboratory on the physics and chemistry of rubbing solids in the Department of Physical Chemistry at Cambridge. A joint attack is being made on some problems, and there is an interchange of personnel between the Melbourne and Cambridge laboratories.

Weather Forecasts for Indian Farmers

AN article in *Indian Farming* of July 1945 by Dr. L. A. Ramdas describes the preliminary steps that have been taken in the Indian Meteorological Department for the establishment of a service of weather forecasts for Indian farmers. Dr. Ramdas is able to bring to bear on it the experience he has gained as agricultural meteorologist at Poona. The essence of the problem is how to enable Indian farmers and official weather forecasters to co-operate so that farming operations may, so far as is possible, be timed in such a way as to make the best possible use of periods of favourable weather and avoid the worst consequences of unfavourable weather. The official forecaster is often able to supplement the farmer's local knowledge of weather by diagnosing the significance of air movements and changes of cloud over a wide area; but he in turn must know what crops are being grown in different parts of the country and what are the critical periods of their growth and harvest. Here it is the turn of the farmer to help the forecaster. Dr. Ramdas describes fully a long series of questions that have been put to the agricultural departments in the Provinces and the Indian States, and outlines the scheme of wireless forecasts to be used. The forecasting will be done from seven regional centres, and will be broadcast daily by the All India Radio Broadcasting Stations. The scale of the intended system is much greater than that of any seen hitherto in India.

Cauliflower-growing in Britain

CAULIFLOWERS are the subject of Bulletin No. 131 issued by the Ministry of Agriculture (London: H.M. Stationery Office. 9d. net). Under this title the cultivation in Britain of both winter (broccoli) and summer cauliflowers for market production are discussed in detail, including recommendations as to

varieties, soil preparation and manuring, harvesting, packing and marketing. Late varieties of winter cauliflower can be grown successfully in all counties, but the early maturing kinds, which require freedom from severe and sustained frost, are produced chiefly in coastal districts. Summer cauliflowers do best on warm, fertile soils with an adequate water supply. Planning is essential if continuous cutting is to be obtained, and careful selection is needed regarding the sites chosen and varieties grown. To ensure a crop ready for cutting in June, a special technique is required involving the use of frames, full details of which are supplied. Information is also provided concerning the type of cauliflowers suitable for pickling or brining, and also the production of the now popular Cape broccoli, which matures in late March or April when other vegetables are scarce. Control measures for a number of pests and diseases are given, and the bulletin concludes with a description of local practices, so that the long experience of large-scale growers may be available to all.

Treatment of Lupus by Calciferol

THE treatment of lupus by calciferol, described by Drs. G. B. Dowling and E. W. Prosser Thomas in the *Lancet* and noted in *Nature* of March 2, p. 260, is the subject of a comment by Dr. Jacques Charpy in the *Lancet* of March 16, p. 400. Dr. Charpy says that he has used similar treatment since 1941, and that he made his first report on twenty-seven subjects treated in this way on July 3, 1943; this form of treatment has been known in France since 1943 as the 'Charpy treatment'. Intolerance of the calciferol used in France has "hardly ever" been noted, because it is chemically pure and perhaps because it is made up in alcoholic solution and not in oil. Dr. Charpy says that lupus vulgaris has almost completely disappeared from France since 1941. Further information is given by Dr. Dowling in the *Lancet* (590, April 20, 1946).

Diffusion Pump Oils

THERE has long been a need for a diffusion pump oil which, while hot, would withstand atmospheric pressure without bad effects. G. P. Brown (*Rev. Sci. Inst.*, 16, 316; Nov. 1945) has found that certain members of the family of silicones are stable under the above conditions and also have vapour pressures as low as, or lower than, the best commercial oils available. Comparative performances of a straight hydrocarbon oil ('Litton C'), an ester ('Octoil'), a chlorinated aromatic hydrocarbon oil ('Narcoil') and two typical silicones in a 6-in. non-fractionating unbaffled all-metal diffusion pump are presented. Tests show that the highest vacuum is produced by the high-boiling silicone (b.p. 430°C.) and that the silicone is nearly completely resistant to oxidation when exposed to air while hot.

High-Voltage Overhead Lines of the British Grid

A PAPER read in London on November 14 before the Institution of Electrical Engineers, by W. J. Nicholls, reviews the progress that has taken place in the past fifteen years in the design of the steel-tower high-voltage transmission lines of the Central Electricity Board in Britain. Lines operating at 132 kV. are dealt with separately from those operating at 66 kV. and 33 kV. Changes in conductors, joints, insulators and towers have been made in the light of experience, and a record of these is given as well

as of other improvements of a minor character. The behaviour of steel-cored aluminium conductor and the methods employed for jointing it are described in detail, and alternative copper conductors are also mentioned. The development of new types of insulators to suit operating conditions in country districts is also described. The steps taken to reduce the effect of lightning, for example, more effective earthing, gap control, and the limited use of double earth-wires, are covered, and alterations in towers which have proved advisable are detailed.

Mineral-Insulated Metal-Sheathed Conductors

A PAPER, read by F. W. Tomlinson and H. M. Wright before the Institution of Electrical Engineers in London on December 13, records the progress made in the application of powdered mineral insulation to metal-sheathed conductors, and describes manufacturing methods and the application of those products which have reached a commercial stage of development. The paper reviews the raw materials used, their properties, and the various manufacturing methods employed. Those applications of the various types of mineral-insulated conductors which have found particular favour are described, and their limitations are indicated. The most recent development, namely, mineral-insulated copper-covered cable, and its variations, is dealt with at greatest length. While this type of cable should be regarded as being designed to meet ordinary requirements, it can be used under conditions which no other type of cable will withstand.

Travelling Fellowships in Medicine

THE Medical Research Council invites applications for the following travelling fellowships for the academic year 1946-47. Rockefeller Medical Fellowships: for graduates resident in Great Britain who have had training in research work in clinical medicine or surgery, or in some other branch of medical science, and who are likely to profit by a period of work at a centre in the United States or elsewhere abroad, before taking up positions for higher teaching or research in the United Kingdom. Dorothy Temple Cross Research Fellowships in Tuberculosis: to give special opportunities for study or research to suitably qualified British subjects of either sex "intending to devote themselves to the advancement by teaching or research of curative or preventive treatment of tuberculosis in all or any of its forms". Completed applications for either of these fellowships must be lodged with the Council not later than June 1. Further particulars and forms of application are obtainable from the Secretary, Medical Research Council, 38 Old Queen Street, Westminster, S.W.1.

Cambrian Archæological Association Awards

At the meeting of the general committee of the Cambrian Archæological Association held on April 5 at Shrewsbury, the first awards of the G. T. Clark Prizes, founded in 1939 by Mr. Wyndham D. Clark in memory of his grandfather, Mr. G. T. Clark, author of "Medieval Military Architecture in England" and other works, were announced as follows: *Section (a): Prehistory*: To Mr. W. F. Grimes, keeper and secretary of the London Museum, for his "Guide to the Collections illustrating the Prehistory of Wales", published by the National Museum of Wales; *Section (b): Roman Period and Dark Ages to c. A.D. 1100*: To Sir Cyril Fox, director of the National Museum of Wales, for his Sir John

Rhys Memorial Lecture on "The Boundary Line of Cymru", published in the *Proceedings of the British Academy*, 1940; *Section (c): Medieval Period, c. A.D. 1100 to 1550*: To Mr. F. H. Crossley, for his series of articles on "Welsh Screens and Lofts" in *Archæologia Cambrensis*, 1943 onwards; *Section (d): Post-Medieval Period, after c. A.D. 1500*: To Dr. Iorwerth C. Peate, keeper of the Department of Folk-Life in the National Museum of Wales, for his work "The Welsh House", vol. 47 of *Y Cymmrodor*, 1940. These prizes were awarded "to the authors of the best book or books, paper or series of papers published during the preceding ten years on the Archæology of Wales and the Marches in each of the four special periods". They will be formally presented at the centenary annual general meeting of the Cambrian Archæological Association, to be held at Aberystwyth during September 3-7.

Hungarian Academy of Sciences

A NEW Academy of Sciences has been founded in Budapest under the presidency of Prof. A. Szent-Györgyi. The academy is publishing five journals: *Acta Hungarica Mathematica, Physica, Chimica, Physiologica* and *Biologica*. The journals are written in the usually accepted languages, and are predominantly in English. They contain original papers only. The Academy is anxious to enter into exchange relations. Its address is Eszterházy u 9, Budapest.

The Night Sky in May

NEW moon occurs on May 1d. 13h. 16m., U.T., and full moon on May 16d. 02h. 52m. The following conjunctions with the moon take place: May 3d. 02h., Venus 2° N.; May 6d. 05h., Saturn 2° S.; May 7d. 10h., Mars 2° S.; May 13d. 01h., Jupiter 3° S. No occultations of stars brighter than mag. 6 take place during the month. Mercury is in superior conjunction with the sun on May 31 and is not well placed for observation throughout the month. Venus is a conspicuous object in the western sky and sets about two hours after the sun during the month. The portion of the illuminated disk visible from the earth varies from 0.93 to 0.86 during May. Mars and Saturn are still visible in the earlier portion of the night, the former setting at midnight on May 31 and the latter about an hour earlier. Jupiter is still favourably placed for observation and does not set until 4h. 07m. and 2h. 10m. at the beginning and end of the month respectively. There is a partial eclipse of the sun on May 30, invisible at Greenwich.

Announcements

MR. LEWIS LEWIS has succeeded Mr. Guy Gresford as secretary of the Australian Scientific Research Liaison Office at Australia House, Strand, London, W.C.2. The latter will shortly be returning to Australia to take up an appointment with the Council for Scientific and Industrial Research.

IN reply to a question from Mr. Weitzman in the House of Commons on April 11, the Minister of Labour said that it is not proposed to publish the report of the Hankey Committee on Further Education and Training. The information which it contains as to prospects and training facilities in the professions has been made generally available in the handbook and pamphlet in the "Careers for Men and Women" series, and the steps to be taken to expand university education are now being actively considered.