

of artificial eyes in Babylonian times has recently been proved by the discovery of a cuneiform inscription of about 1600 B.C., in which 22 artificial eyes, 9 of agate and 13 of chalcedony, are mentioned. In ancient Greece statues were often provided with artificial eyes, Pheidias's statue of Athena being a celebrated example. In ancient Rome the *faber ocularius*, or maker of artificial eyes, existed as well as the *medicus ocularius*, who was a favourite subject for contemporary satirists, especially Martial. There is no definite description of artificial eyes to replace those lost by disease or accident before the middle of the sixteenth century, when they are mentioned by Ambroise Paré, but, as Dr. Bruce points out, the terms in which he speaks of them do not indicate that they were an innovation at that time.

The Development Commission

THE twenty-ninth report of the Development Commissioners, for the year ending March 31, 1939, has just been published (H.M. Stationery Office. 2s.). The total sum recommended for the fund was £625,642, of which agriculture and rural industries accounted for £579,480, and fisheries and harbours £46,162. These grants, particularly in the latter case, were rather smaller than in the previous year, when the amounts were £608,911 and £131,555 respectively. A short section describes the subject of study, size of staff and total sums available for expenditure at each of the agricultural research institutes in receipt of grants from the Fund, but details of their work are supplied in other publications. Results accruing from grants are necessarily difficult to assess, but it must be remembered that it is largely through her research institutes that Great Britain maintains such a close touch with agricultural science throughout the world, and has been able to assist in Empire development through supplying trained men.

As regards rural industries, the greater part of the sum allocated has taken the form of grants to the Rural Industries Bureau. The latter exists both to help the craftsmen for their own sakes and to maintain the village workshop for the sake of the country. By its advisory service and the introduction of improved equipment and methods of business it is hoped to secure the interest of the younger generation in industries of vital importance to the farmer. Investigations undertaken by the Fishery Departments are largely carried out under schemes adopted by the International Council for the Exploration of the Sea. Both the English and Scottish share of the investigations receive support from the Fund, and grants have also been made for research on freshwater fisheries.

Colorimetry of Electric Discharge Lamps

It is claimed in the *G.E.C. Journal* of February that during last year very satisfactory progress was made in developing various types of technique for improving electric discharge lamps. Unsolved problems in heterochromatic photometry and colorimetry previously stood in the way. The problem was complicated by the practical application of fluorescent

discharge lamps to domestic and other forms of interior lighting. This made it necessary to measure the colour-rendering properties of the light sources in a way distinct from their colour. Although non-selectively reflecting surfaces or fabrics, such as 'whites' or 'greys', will have the same coloured appearances when illuminated by light from such sources, since reflection by these surfaces produces no change in the spectral energy distribution of the light, the coloured appearance of selectively reflecting surfaces, such as dyed fabrics, may be quite different. Therefore, although the colour of these two light sources is the same, their colour-rendering properties are different, and it is this latter property which it is desired to measure.

Two types of measurement are made: (a) the determination of the most desirable colour-rendering properties of light sources when performing different tasks at different illuminations (this involves major research into chromaticity scales under different observational conditions); (b) the recording of the spectral luminosity distribution of light sources already established as satisfactory for particular purposes, so that the manufacture of such lamps can be controlled in a manner to ensure uniformity of colour-rendering properties of the commercial lamps or fittings. These measurements are carried out by visual photometric measurements of spectral luminosity made, in turn, through a series of spectral filters which transmit light only within defined wavelength limits. This involves a comparatively simple technique which can be undertaken commercially with photometric apparatus. For differentiating and defining the colour-rendering properties of many electric discharge lamps, this method is not sufficiently sensitive. One recent method, which is being used to define the luminosity distribution throughout the spectrum, utilizes physical photometric methods of measuring the relative luminosity in eight suitably chosen adjacent spectral bands, extending throughout the physical spectrum.

Trench Fever

IN his inaugural thesis (*Thèse de Paris*, No. 870; 1939), Dr. Robert Schapiro remarks that since the War of 1914-18, during which trench fever was very prevalent both on the French and Italian fronts as well as in Salonica and Mesopotamia, endemic cases have been reported in the south of France and Russia. It is also probable that many cases have passed unrecognized. Reports received from Spanish doctors living in their own country or as refugees in France indicate that there has been an outbreak of the disease in Spain, although Schapiro has been unable to obtain confirmation of this from other sources. The possibility, however, of a return of the disease must be recognized in view of the fact that defective hygienic conditions, and particularly the presence of lice among the troops, favour the spread of trench fever.

Moreover, the risk of its occurrence is increased by the transfer last autumn of German troops from east to west, as the disease is undoubtedly more

prevalent in Central Europe than in the west. Soldiers, however, are not the only persons liable to contract the disease, although they were chiefly affected during the Great War, but owing to the contacts between the army and the civil population the latter are also liable to become infected, especially in the case of large agglomerations and refugees. Although trench fever is not a serious disease in itself, it may be the cause of a considerable degree of invalidism, as is shown by the fact that Sir Wilmot Herringham calculated at eight million the total number of days off duty in the British Army due to this cause. Prevention consists in immediate isolation of the first cases, delousing of contacts and other methods for the destruction of lice.

Miniature Circuit-Breakers

THE *Electrical Review* of March 29 points out that an amendment has been made by the Standards Association of Australia to its wiring rules, by a provision that the loading of final sub-circuits may be increased if sealed circuit-breakers of an approved type are used in place of fuses. In this case two general purpose socket outlets in a room of a dwelling-house can be counted as one if connected with an 8, 12 or 18 ampere final sub-circuit, and any permanently connected appliance rated at 100 watts or less may be counted as a lighting point. It is stated that in many cases the additional cost of the circuit-breaker will be largely offset by the reduction in the number of fuses required. While the Wiring Rules of the Standards Association of Australia differ materially from the Regulations of the Institution of Electrical Engineers, thus precluding the possibility of direct comparison, the value of a circuit-breaker the setting of which cannot be tampered with would in many cases be high.

The Science Masters' Association

THE report for 1939 of the Science Masters' Association records a rapid growth in membership. Last year no fewer than 914 schools were represented, whereas twenty years ago there were only 143. So extensive a combination can produce effective action, which we notice in the first annual report of the London and Home Counties Branch. Suggestions on the new physics syllabus of the London General School Examination were made after discussion, sent to the general committee of the Association, passed on, and accepted. The result is changes which are announced to "take effect in the physics paper at the next examination".

Memorandum on Scabies

SCABIES, or the 'itch', is a superficial inflammation of the skin caused by infestation with the itch mite, the female of which burrows into the skin producing much irritation. The affection is very liable to occur among collections of persons living together in restricted circumstances such as are met with in war-time, among evacuee children, soldiers and others. The Ministry of Health has therefore issued a useful

memorandum on the subject (Memo. 229/Med. H.M. Stationery Office. 2d. net). It describes the affection and its complications, diagnosis, methods of spread and prevention, and the treatment.

The Iron and Steel Institute

MR. JOHN CRAIG, chairman and managing director of Messrs. Colvilles, Ltd., has been elected president of the Iron and Steel Institute for the next two years. Mr. Craig will be inducted into the presidential chair by the retiring president, Lord Dudley, at the annual general meeting on May 2. The Bessemer Gold Medal for 1940 of the Institute has been awarded to Dr. Andrew McCance, of Glasgow, in recognition of his eminent services in connexion with the application of science to the iron and steel industry. Dr. McCance is a director and general manager of Messrs. Colvilles, Ltd. M. Eugène Schneider has been nominated an honorary member to celebrate the fiftieth anniversary of his election to membership. M. Schneider joined the Institute in 1890 and was president for the period 1918-20. An Andrew Carnegie Silver Medal has been awarded to Mr. Bo W. L. Ljunggren for his memoir entitled "Method of Sclero-grating employed for the Study of Grain Boundaries and of Nitrided Cases; Grain Structures revealed by Cutting". The Williams Prize for 1939 has been divided between Mr. W. B. Lawrie, for his paper on "The Refining of Metal in the Basic Open-Hearth Furnace. The Influence of Fluorspar on the Process", and Mr. W. T. Wilson, for his paper on "The Rolling of Sections at the Appleby-Frodingham Steel Company, Limited." No papers have been received in competition for the Ablett Prize for a paper on a subject connected with engineering in iron and steel works written by a junior engineer. Captain Ablett has renewed the offer of the Prize for competition in 1941. Particulars can be obtained from the Secretary of the Institute; papers must be submitted not later than January 31, 1941.

Announcements

THE annual joint meeting of the Institute of Radio Engineers and the American Section of the International Scientific Radio Union will be held at the National Academy of Sciences, Washington, D.C., on April 26. A programme of abstracts will be available in booklet form about April 15. Correspondence should be addressed to S. S. Kirby, National Bureau of Standards, Washington, D.C.

A RESEARCH department for racial hygiene has recently been created in the Welfare Ministry in Japan. It is preparing a new law on marriage and sterilization.

ACCORDING to the United States National Health Survey the prevalence of blindness is greater among men than among women. For every one hundred blind women, one hundred and eleven men were affected. Nearly twice as much blindness was found among coloured people as among white.