

hot. The Amal burner is supplied in several sizes, that for ordinary use measuring $5\frac{1}{2}$ in. high and one inch across the head, and costing 12s. 6d.

Value of Anti-Diphtheritic Serum Treatment

THE autumn issue of the *Fight against Disease* (22, No. 4), the quarterly journal of the Research Defence Society, contains an article by Sir Leonard Rogers showing the reduction in the suffering and the deaths of children from diphtheria during the last forty years consequent upon the use of anti-diphtheritic serum treatment. He points out that the *case mortality*, the most scientific test of the value of treatment, from diphtheria in the hospitals of the Metropolitan Asylums Board, has steadily fallen every year from a percentage of 30.4 in 1890-93 before serum was used, to 9.0 in 1905, 7.4 in 1910, and less than 4.0 in 1933, following the treatment of the disease with the serum. More striking still is the fall in mortality for laryngeal cases, from 62 per cent in 1894 to 11.7 in 1910. The value of the serum treatment is even more conclusively shown by its remarkable efficacy in the early stages of the disease, as compared with its comparative failure when given after the fourth day of the disease, when the toxæmia of the disease is fully developed, in accordance with what animal experiments had indicated would be the case. The case mortality per cent when treatment is commenced on the first day of the disease is only 1.6, on the second day it is 7.9, and on the third 17.2. As Sir Charles Martin has pointed out, "If the antitoxin (serum) were a remedy of no value, whether it was administered on the first or on the fifth day of the disease would be immaterial". Clinical evidence is no less conclusive: many doctors still living can testify to the horrors of diphtheria in young children in the pre-serum days. This is now all changed, and the young diphtheria patient if treated early with serum will rarely succumb. Sir Leonard Rogers estimates that had the pre-serum mortality from diphtheria continued since 1911, there would have been 250,000 more deaths from diphtheria than were actually recorded.

Television in the United States

THE October issue of *Electronics* contains an illustrated article surveying the principal systems of television which are undergoing development in the United States of America. Of the six systems reviewed, four employ a cathode ray oscillograph type of tube for both transmission and reception; while the other two employ mechanical-optical systems comprising a vibrating mirror or a rotating mirrored disc, in conjunction with a photoelectric cell for transmission and a Kerr cell for reception. All the methods are capable of transmitting scenes photographed on the standard size of cinematograph film; most of them are also suitable for the transmission of studio scenes, while some can be successfully operated on outdoor scenic material. The number of scanning lines into which the picture is dissected for transmission varies from 60 to 400, while an average value of 240 lines is very popular.

The transmission of such a picture at the standard cinematograph rate of 24 per second requires a communication channel of the order of 1,000 kc./sec., as compared with the space of 9 or 10 kc./sec. permitted in modern sound broadcasting. Such a large band-width is considered to be essential for satisfactory picture reproduction, and this technical limitation presents one of the most serious problems to the television worker. It requires transmitting and receiving circuits of great complexity and high cost, and it would appear to limit the available wave-band for broadcast television to the ultra-short region below 10 metres. The article referred to discusses briefly the prospects of the commercial application of television in America, and expresses the opinion that in addition to the technical problems, there are other difficulties of a financial nature involved in the provision of a television programme service throughout the country.

General Štefánik

GENERAL MILAN R. ŠTEFÁNIK had the distinction of being almost the only Slovak man of science to attain any eminence since the time of Komenský (1592-1670). He studied in Paris, and before the War became secretary of the Observatory at Meudon and went on several French scientific missions. During the War, he was an air force officer in France, Serbia and Italy before becoming Czechoslovak Minister of National Defence in 1918. He was unfortunately killed when his aeroplane crashed near Bratislava as he was returning home in May 1919. Some account of his work has now been placed on record in a book recently published by Eos, Bratislava. The author, Mr. Ferdinand Pišecny, was closely associated with General Štefánik during his missions in Russia and the United States, and the book is a valuable addition to Czechoslovak literature; although it deals primarily with Štefánik's War career and his political activities, occasional reference is made to his scientific work.

Eskimo Studies

A PRIZE of a gold medal and a thousand crowns has been offered by the Royal Academy of Sciences and Letters of Denmark for a study of Eskimo origins. In the statement of the conditions upon which this prize is offered for competition, it is pointed out that there are two main opposing views on the origins and ethnological affinities of the Eskimo. The older of the two theories to which reference is made derives from the views put forward by the Danish authority, J. H. Rink, in 1871, that the Eskimo were of close affinity to the Indians of North America and had originated in a comparatively restricted centre in the interior of the American continent, from which they had migrated to Alaska and afterwards spread across the northern area as far as Greenland. Later, the place of origin was defined more precisely as in the neighbourhood of Hudson Bay. The alternative theory, which it may be said is that now more generally held, is that the Eskimo, while showing affinities with the Indians,

are derivative from certain peoples of Eastern Asia, but there is considerable difference of opinion on many points. Dissertations have, therefore, been invited in which an attempt is to be made to resolve the problem of the origin of the ancient Eskimo civilisation in the light of every available class of evidence, physical character, culture, linguistic, folklore and the like. The result of the competition will be announced in February next.

Annual Radiological Congress

THE Annual Congress of the British Institute of Radiology (incorporated with the Röntgen Society) will be held in the Central Hall, Westminster, London, S.W.1, on December 5-7. The Congress will be officially opened on December 5 by Sir Humphry Rolleston. The seventeenth Silvanus Thompson Memorial Lecture will be delivered by Dr. H. H. Berg on "The Digestive Mucosa" on December 6, and the fifteenth Mackenzie Davidson Memorial Lecture by Sir William Bragg on "X-Rays and the Coarse Structure of Materials" on December 7. In connexion with the Congress, an exhibition of X-ray apparatus will be held at the Central Hall. Further information can be obtained from the Organising Secretary, 47 Red Lion Street, High Holborn, London, W.C.1.

Ramsay Memorial Fellowships

THE following Ramsay Memorial fellowships for the year 1934-35 have been awarded: Mr. G. C. Hampson, a British fellowship of £300, tenable for two years, at the University of Oxford; Mr. George Bryce, a Glasgow fellowship of £300, tenable for two years, at the University of Cambridge; M. Berton, a French fellowship, at the Imperial College of Science and Technology, London; Dr. Charles Haenny, a Swiss fellowship of £300, at Birkbeck College, London; Prof. G. Semerano, an Italian fellowship of £300, at the Imperial College of Science and Technology, London; Dr. M. G. van ter Horst, a Netherland fellowship of £300, at the University of Cambridge. The following fellowships have been renewed for the same year: Dr. C. Kawassades (Greek fellow), Ramsay Memorial Laboratory of Chemical Engineering, University College, London; Dr. Ikutaro Sawai (Japanese fellow), University College, London; Dr. A. G. Winn (British fellow), University College, London.

Announcements

THE Buchan Prize of the Royal Meteorological Society for 1935 has been awarded to Dr. F. J. W. Whipple, for papers contributed by him to the *Quarterly Journal* of the Society during the years 1929-33.

PROF. ERNST HERZFELD, director of antiquities, Persia, will deliver the Schweich lectures on biblical archæology at the British Academy on December 3, 5 and 7. The subject of Prof. Herzfeld's lectures will be "The Archæological History of Iran".

PROF. W. L. BRAGG, Langworthy professor of physics in the University of Manchester, will deliver

the Christmas Lectures adapted to a juvenile audience at the Royal Institution on December 27, 29 and January 1, 3, 5 and 8, at 3 p.m. The subject of Prof. Bragg's lectures will be "Electricity". Further information can be obtained from the Secretary, Royal Institution, 21 Albemarle Street, London, W.1.

THE Meldola Medal, the gift of the Society of Maccabæans, is awarded annually by the Council of the Institute of Chemistry to the British chemist under thirty years of age whose published chemical work shows the most promise. The next award will be made in January 1935, and the Council would be glad to have attention directed, by December 31, to work of the character indicated. Communications should be addressed to the Registrar, Institute of Chemistry of Great Britain and Ireland, 30 Russell Square, London, W.C.1.

ARRANGEMENTS have now been completed in connexion with the symposium organised by the British Section of the International Society of Leather Trades' Chemists on "Technical Aspects of Emulsions" to be held at University College, Gower Street, W.C.1, on December 7 (not, as originally announced, at the Royal Society of Arts), at 10 a.m.-6 p.m., under the chairmanship of Prof. F. G. Donnan. The symposium has attracted considerable attention in chemical, industrial and medical circles, and a large attendance is assured. Members and others desiring to attend should notify Dr. C. H. Spiers at the offices of the Society, 17 Market Street, London, S.E.1. The papers read at the meeting are to be published in bound form, which will be available shortly after the symposium.

MR. ARCHIBALD THORBURN, the well-known bird artist, has again presented the Royal Society for the Protection of Birds with one of his beautiful pictures for its special Christmas greeting card. The painting is of a pair of longtailed tits poised on a spray of golden gorse. Copies may be obtained from the Royal Society for the Protection of Birds, 82 Victoria Street, London, S.W.1, for 4s. 7d. a dozen, inclusive of envelopes and postage.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A temporary assistant lecturer in zoology and geology at University College, Southampton—The Registrar (Dec. 8). A museum assistant at the Woolwich Borough Museum—The Town Clerk, Town Hall, Woolwich (Dec. 10). Two junior assistants at the Museum and Art Gallery, Birmingham—The Keeper (Dec. 11). A lecturer in physics and mathematics at the Northampton Polytechnic Institute, St. John Street, London, E.C.1—The Principal (Dec. 12). A lecturer in mechanical engineering at the University of Capetown—The Secretary, Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London (Dec. 19). A guide lecturer in the British Museum (Natural History)—The Secretary, British Museum (Natural History), London, S.W.7 (Dec. 31).