

duced when the natural skylights are blacked out. The absence of distracting dazzle and the avoidance of glare raise and maintain the output of the factories.

War-Time Museum Exhibitions

THE *Museums Journal* of May shows in what way many museums in Great Britain are endeavouring to stimulate interest by supplying information bearing upon warfare or upon the needs which it has created. In the former group is the special war-time exhibition at the National Maritime Museum, described by Sir Geoffrey Callender. Two contrasting sets of medals are shown, one German and one wrongly described as "English", for the only representative mentioned is "the General Service Medal conferred on *British* officers and men" during the Napoleonic wars. Lightship and lifeboat models, models showing the story of the development of the torpedo-boat, and of the evolution of anchors from their simple beginnings as heavy stones, are arranged with larger exhibits such as that illustrating the evolution of naval ordnance, to make a varied show which as a whole illustrates "the age-long character of our sea-experience and the continuity of our maritime prestige". The second type of exhibit has been created in several museums "to show how the various kinds of foods, essential to man's existence, may be provided by vegetables and grown on a small allotment or in a garden". Several illustrations indicate how, by models of garden plots and cropping plans, this good work may be pursued.

Investigation of Atmospheric Pollution

REPRESENTATIVES of local authorities and other bodies co-operating in the investigation of atmospheric pollution met in London on May 28. The Conference, in considering its annual report to the co-operating bodies, unanimously agreed that while contribution to the war effort is the first duty and desire of every organization, the need for vigilant attention to the purity of the atmosphere has by no means decreased since the outbreak of the War. The wasteful burning of fuel, and the detriment which pollution causes to the nation's health were stressed. The Conference therefore urged all local authorities to do whatever lies in their power to maintain the investigation. At the close of the meeting, Prof. W. H. Roberts, associate professor of public health chemistry in the University of Liverpool, was unanimously elected chairman of the Conference.

Electricity Applied to Metallurgy

IN the Menelaus Memorial Lecture delivered to the South Wales Institute of Engineers on March 19, Dr. A. P. M. Fleming chose as his subject "Electricity as applied to Metallurgy". A most important application arises in connexion with methods of testing. Dr. Fleming points out that electricity has proved an invaluable aid to the metallurgist when making fine measurements and researches, as well as for checking the quality of his materials. Using standardized specimens the composition and heat treatment of which are known, comparisons may be made of

unknown specimens by magnetic testing. By suitable exploration of the magnetic behaviour of the specimen in an alternating magnetic field, it is possible to relate the phase and quadrature components of the voltage induced in a search coil, and by comparing these with the standardized specimen, definite inferences can be drawn as to the composition of the material without the necessity of destroying the specimen under test.

Magnetic methods have also been developed for fault detection, and have been of increasing importance due to the tendency to cut down material costs and weight, while still maintaining the safety factor, by more rigid inspection and care in production. The presence of a fault or change in magnetic composition can be detected by the distortion these cause in the magnetic field, the distortion being located either by a direction indicator like a magnetic needle or a moving search coil. Another and most valuable method is that developed largely by the Metropolitan-Vickers Electrical Co., Ltd., in which the specimen is magnetized and then subjected to examination under a coating of liquid containing very finely divided magnetic particles. When examining material in the shape of a bar for longitudinal cracks, a heavy current is passed down the bar while it is immersed in a bath of finely divided magnetic particles, suspended in a light oil. These particles form sharply defined lines which indicate the flaws. This method is of growing importance, and is probably the most effective means at present available of checking this form of weakness in metals.

Incorporated Municipal Electrical Association

THE activities of the Incorporated Municipal Electrical Association (I.M.E.A.) are described in the *Electrical Review* of May 10. The Association is taking steps to ensure that stocks of coal held by public utility undertakings in Great Britain shall be built up during the coming months to ensure that by September 30 the undertakings will have not less than ten winter weeks supply on hand. The Council has agreed that a scheme of insurance in respect to war damage to electricity undertakings should be prepared and has referred the matter to the Joint Committee of Electricity Supply Associations. The members of the Association have been recommended by the National Whitley Council to grant a temporary increase of salary to administrative, technical and clerical staffs. The Joint Committee of Electricity Supply Associations has approached the Minister of Home Security with a view to the relaxation of the restrictions upon the use of neon and other outdoor signs during hours of daylight.

The Finance Officer of the London and Home Counties J.E.A. (Mr. A. L. Burnell) recently prepared a memorandum on the transfer of hire-purchase agreements from one authority to another upon the removal of a consumer when he is unable immediately to complete payment. Difficulties are raised by the varying practice among undertakings in such matters as maximum periods, interest-rates, local limitations as to the type of apparatus and absence of hire