

itself. In many cases, however, the way in which it is done is open to severe criticism. To illustrate this he shows photographs of Thames House, Millbank, floodlighted, first when special attention is paid to the roof and skyline and secondly when they are neglected. In the first case, the effect produced is beautiful but in the second case the floodlighting is very disappointing, the building appearing dwarfed and incomplete. The floodlighting in the first case was designed by Sir Frank Baines, the architect responsible for the building, and he supervised its execution. It is also pointed out what an important part the reflection factor of the lighted portion of the front of the building plays. In floodlighting the front of the Institution of Electrical Engineers, London, for example, the aggregate total load on the 26 floodlights used is 39 kilowatts. Owing to lack of time, the front had not been steam-cleaned prior to the installation and so the average reflecting factor was only 7 per cent. If it had been steam-cleaned, the average reflecting factor would have been increased about five times and so the saving, if the same total illumination were produced, would be about four-fifths of the present current bill.

#### Electric Cooking on the Thermal Storage System

SINCE coal can be produced at a uniform rate and stored ready for use as required, the plant necessary for its production has only to be capable of supplying the average demand. The same is true of oil and gas but not of electricity. Therefore the size of the necessary generating plant for electricity is fixed by the maximum and not by the average demand. As a rule the maximum output is about three times the average output and so most generating stations could treble their output provided the load was evenly distributed over the day and night. As capital charges usually represent an appreciable fraction of the selling price of electricity, any new demand which tends to level the load can be supplied economically at a reduced tariff. In thermal storage systems for heating buildings or for supplying hot water, use is made of this principle by supplying heat to the storage water at times of light load at a much reduced rate. In the case of electric 'cookers' using thermal storage, the problem is more difficult as the temperature required for cooking is much higher and the cost limits the use of too much thermal insulation. In an article on storage cookers in the *General Electric Co.'s Journal* for November, O. W. Humphreys and Dr. E. C. Walton describe different types of these devices used in America and various Continental countries as well as the 'magnet storage cooker'. Compared with the standard type of electric cooker, the latter has the following advantages. The cost of installation is very low as it is merely the cost of an extra lighting point in the house circuit. The cost of maintenance is also very low compared with the ordinary cooker, and no meter is required. When the electric supply is sufficiently cheap these cookers might well be used. Some are already in use in the Midlands in the homes of working-class people.

#### Research in Plant Industry in Australia

THE fifth annual report of the Australian Council for Scientific and Industrial Research shows that results of great economic value, far exceeding the total expenditure of the Council, have been achieved. Problems relating to the control of disease form one of the chief lines of investigation undertaken by the division of plant industry, and such outstanding success has been obtained in the control of bunchy top disease in bananas that it has led to the re-establishment of the crop on large areas. The heavy annual loss hitherto sustained from the development of bitter pit in exported apples should now be reduced to negligible proportions, since its relation to immaturity at picking time has been established. An additional activity of this division is the introduction from abroad of new varieties of plants likely to be of value, particularly in the drier districts. Following the success with which weed pests, such as St. John's wort, have been suppressed, the entomological division is extending the method of biological control to other noxious plants, and an appropriate insect for destroying the Noogoora burr having been recently discovered, on the completion of laboratory trials this fly will be liberated in the infested districts. The recently formed Division of Forest Products has carried out particularly valuable work on the seasoning of hard woods for the manufacture of cases, and has further devised a rapid and cheap method for treating wood to be used for butter boxes so as to avoid the development of taint, but although attention has been given mainly to problems of immediate importance, fundamental research has not been neglected.

#### Weeds of Grassland

IN spite of the increased attention paid to grassland farming in recent years, there is still a vast area of permanent grass of poor quality, and since the reduction of weeds is intimately associated with the best means for securing its improvement, the issue by the Ministry of Agriculture of "Weeds of Grassland" (prepared by H. C. Long, and published by H.M. Stationery Office, price 5s. net), should prove of great value. At the outset, emphasis is laid on the necessity for using clean seed when sowing land down to grass, as injurious weeds are readily introduced, and instances of the special dangers in the case of the rye-grasses and clovers are cited. The principles in eradicating weeds from grassland are those which make for general improvement in the herbage, and in many cases attention to drainage, manuring, grazing, etc., rather than direct methods of destruction (though spraying is considered), will lead to the eradication of undesirable species. A large number of the worst weeds that occur on grassland are dealt with individually, classification being made according to the natural orders to which they belong. A short botanical description, in which technical terms are so far as possible avoided, coupled with 92 illustrations (18 of which are coloured) from seeding to fruiting stages, renders identification a comparatively simple matter, and points of interest such as the association