HORTICULTURAL SCIENCE AT THE UNIVERSITY OF READING

THE diamond jubilee of the Horticultural Education Association was marked by a conference at the University of Reading during September 6-9. The object of the conference indicated by the theme, "Horticultural Science at the University of Reading", was to bring together contributions from a number of the branches of science that find a meeting point in the technology of horticulture. It was part of the success of the conference that it directed attention to the importance of border-line research between disciplines and to the desirability of combining pure and applied research.

Contributions from the Department of Horticulture were concerned with plant physiology and plant protection. Prof. O. V. S. Heath discussed methods of measuring stomatal aperture and pointed to the importance of a knowledge of stomatal physiology in attempts to control water loss from crop plants. Dr. H. Meidner demonstrated a portable and relatively cheap instrument for measuring the water content of soils by determination of their heat conductivity. One of the main advantages of the method was that the probe employed, unlike the porous block used in other techniques of soil moisture determination, did not have to equilibrate with water in the soil.

Papers by Dr. D. Vince and Dr. G. P. Harris were concerned with the photoperiodic control of flowering in long-day plants. Dr. Vince described experiments with different strains and species of *Lolium* that demonstrated a changing sensitivity to red and far-red radiation during a 16-h night. It appeared that in order to produce a maximum promotion of flowering by interruption of the night with red light, the timing of the interruption had to be varied according to the species or strain of *Lolium* used. The potentialities of detailed investigations of the photoperiodic responses of plants of horticultural importance were underlined in the paper by Dr. Harris on flowering in the glasshouse carnation. Out of a number of photoperiodic treatments tested, the use of lighting from tungsten-filament bulbs throughout the night was found to be most effective in promoting flowering under winter conditions. Applications of this observation to commercial practice were discussed. Dr. H. F. van Emden bridged the gap between plant physiology and entomology in a discussion of plant-insect relations. Results were presented indicating the role of the nitrogen status of the plant and particularly the soluble-nutritional content in controlling rates of aphid multiplication.

The Agricultural Research Council Unit of Flower Crop Physiology, which, under the direction of Prof. O. V. S.

Heath, is attached to the Department of Horticulture, was represented both in a comprehensive demonstration of equipment and in a paper read by Dr. A. P. Hughes. The main item of equipment in the Unit is 9 (later to be 12) growth cabinets designed by the National Institute of Agricultural Engineering and housed in a special hall with controlled ventilation. Dr. Hughes described the use of this equipment to investigate interactions of light intensity, temperature and carbon-dioxide concentration. He also presented results of experiments demonstrating effects of photoperiodic treatments on leaf expansion in a variety of plants and discussed the use of such treatments under conditions where light intensities are limiting to growth in dry weight.

In a contribution from the Department of Physiological Chemistry, Dr. K. A. Hassall discussed problems encountered in the use of crop protection chemicals including questions of toxicity, persistence and selectivity. Experimental results showed how the persistence and effectiveness of a pre-emergence weed-killer could vary with the amount of rain falling after application.

From the Department of Agricultural Botany there were papers on physiological ecology and plant breeding and genetics. Prof. A. H. Bunting described work on the water relations of plants growing on soils of the chalk downs near Reading and demonstrated the capacity of the chalk to retain water by reference to its pF -moisture content curve. The pore size distribution derived from this curve was shown to be similar to a distribution based on direct measurements of pore sizes in electronmicrographs. Dr. J. K. Jones and Mr. G. D. Rowley in contributions concerned with plant breeding both emphasized the value of using wild species as sources of genetic variation. Dr. Jones presented evidence that the sets of chromosomes in all species of strawberries were homologous, that it was possible to produce many inter-specific hybrids and to induce polyploidy and therefore to use most, if not all, of the species in breeding. Mr. Rowley showed how the derivation of cultivars of rose could be traced by crossing supposed parent species and underlined the importance of making provision for the conservation of species and cultivars that might not be of immediate commercial value.

This report indicates the varied nature of the papers presented; but the contributions had in common an immediate or potential value to horticulture. The conference provided members with the opportunity to examine the role of the University in the development of this subject.

G. P. HARRIS

THE WORLD HEALTH ORGANIZATION, 1964

A REMINDER that the control of communicable diseases is "still the most important health challenge facing mankind" is given by Dr. M. G. Candau, director-general of the World Health Organization, in his annual report for 1964*.

It is not, therefore, surprising that, notwithstanding the new developments in the work of the World Health Organization, the chapter on communicable diseases remains the longest in the volume. While some diseases have declined in public health and economic importance, others are still obstinate or present new problems.

* Official Records of the World Health Organization, No. 139: *The Work of WHO. Annual Report of the Director-General to the World Health Assembly and to the United Nations*. Pp. xiv + 240. (Geneva: World Health Organization; London: H.M.S.O., 1965.) 4 Sw. francs; 6s. 8d.; 1.25 dollars.

Dr. Candau points to the increasing incidence of plague the heavy toll of cholera and smallpox, the continuing problems of malaria and tuberculosis, the upsurge in the incidence of syphilis and gonorrhoea. He lists, as the three main obstacles to effective control, lack of knowledge, insufficient international support for the Organization and financing of campaigns and, most formidable of all, lack of adequate health services in the countries most affected. Lasting success can be achieved only through the establishment of permanent and effective health services applying national health plans.

The experience of the Organization has shown that quick results cannot be expected; the countries most in need of assistance for national health planning are those where