

Foreword

A three-day course organised by the Royal Netherlands Society for Agricultural Sciences and the Netherlands Institute of Agricultural Graduates was held at Wageningen, from 9th to 11th January, 1962. 75 Dutch scientists took part in it.

The aim of the course was to provide a conspectus of our present knowledge of the production of organic matter by crops and the distribution of the produced matter over the various organs of the plant.

The programme was organised by a committee consisting of Miss S. C. VAN ALTENA (secretary), G. G. BOLHUIS, Dr. J. DOORENBOS, Prof. Dr. J. D. FERWERDA, Prof. M. L. 'T HART (chairman), Prof. Dr. G. HELLINGA, Prof. Dr. G. J. VERVELDE and Prof. Dr. S. J. WELLENSIEK.

The papers were revised for publication in this issue, but no research work subsequent to 1961 is mentioned. A few papers have been omitted at the request of the authors.

The subjects presented here may be considered to be of prime importance to Dutch agriculture. Holland is one of the countries in the world in which greatest emphasis is placed on the objective of maximum production per unit of area. Thanks to the close collaboration between research work and its application to agricultural and horticultural practice the yields obtained in this country are among the highest in the world. Extensive use is made of fertilizers and other chemical agents, regulation of water supplies, and influencing of the temperature. In recent years horticulturists have also been making increasing use of lighting and carbon dioxide supplies.

Owing to the diverse responses of different crops and the mutual effect of the various growth factors research has been especially directed to the general interrelationships of assimilation and dissimilation. The agronomist is increasingly confronted with the problem of discovering the limits with regard to production, considered from the viewpoint of the factors that can be influenced by human agency.

The formative development of the plant is also extremely important to the grower. On the one hand it determines to what extent and during which periods of the year the crop is able to make use of the available solar energy, and moreover the value of the production is largely influenced by the distribution over the various organs of the matter produced. The latter factor plays a very divergent role in the various crops because, as for example in a green fodder crop, all parts above ground are

often valuable as cattle fodder. On the other hand in many seed and fruit crops the harvest only constitutes a small part of the formative development.

As a result the influencing of the distribution of the dry matter inside the plant has become a field of research which is constantly expanding and in which many phenomena occur which are still difficult to fit into general interrelationships.

This issue aims at providing a survey of our knowledge in this extensive field and it is to be hoped that it will be of use to research workers in agriculture and allied scientific fields.

M. L. 'T HART