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BOOK REVIEW

KOZIOŁ, M. J., WHATLEY, F. R. (ed.): GASEOUS AIR POLLUTANTS AND PLANT METABOLISM. — Butterworths, London—Boston—Durban—Singapore—Sydney—Toronto—Wellington 1984. 466 pp., H/c £ 50.00.

The amount of information on the biochemical interactions of pollutants with various aspects of plant metabolism is steadily increasing but the knowledge is not uniformly divided through the whole range of the problem. As we are concerned here with a pressing problem of our time, the leading scientists of Great Britain *i.e.* F.R. Whatley, M. J. Kozioł, J. N. B. Bell, D. W. Cowling, T. A. Mansfield, P. J. W. Saunders, T. L. V. Ulbricht and A. R. Wellburn set up the Organizing Committee with the aim to correlate the biochemical aspects with the physiological and ultrastructural ones, to assess the impact of the biochemical responses in terms of effects on crop yields and on the nutritional quality of the crop, and to appreciate the importance of these interactions in the context of global pollution problems. For this purpose the Committee proposed to organize a series of international symposia, the first of which was held in Oxford 25 August 1982 with 60 participants from 19 countries (17 UK, 10 USA, 4 Canada, France, Sweden, 3 FGR, Japan, 2 Italy, Poland, The Netherlands, 1 Australia, Belgium, Denmark, Ireland, Finland, India, People Republic of China, Switzerland and Yugoslavia). The proceedings of this symposium, dedicated to D. W. Cowling in memoriam, consists of review papers which not only summarize the work that was done but also served to identify the areas meriting further research.

The content is divided into seven sections: I. Defining pollution problems (5 papers), II. Pollutants and plant cells (4 papers), III. Effects on light reactions (5 papers), IV. Effects on photophosphorylation and respiration (3 papers), V. Effects on metabolite pools (4 papers), VI. Relationship of biochemical effects to environmental problems (3 papers) and VII. Biochemical mechanisms of pollutant tolerance (4 papers). In general, a need was stated for more intensive research into the interactions of gaseous pollutants with insect, fungal and viral attacks on crops, into changes in the nutritional quality of crops and into the postharvest physiology of crops. The importance of suitable diagnostic tests for pollutant resistance to be used in plant breeding programmes, for comparative laboratory and field studies using mixtures of pollutants was also recognized. As matter of the book will be interesting to readers from various scientific branches the text is complemented by lists of abbreviations, Latin and common names of plants and insects, instructions and the computer programme for conversion of air pollutant units and concentrations; as is customary in symposium proceedings the list of participants, and species and subject indexes are also added. Unfortunately, the time from the symposium to proceedings publication was rather long (longer than one year) but, nevertheless, the book presents a comprehensive overview of up-to-date knowledge of the effects of the major gaseous pollutants (hydrogen fluoride, ammonia, the nitrogen oxides, ozone, sulphur dioxide and peroxyacetyl nitrate) on plant metabolism *i.e.* bioenergetic pathways, enzyme activities, metabolite pools and cell buffering capacities, and points out the need for further research. It can be recommended to research workers and teaching staffs in plant biochemistry, physiology, agronomy, forestry and related branches.

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