

JACQUES, R. (ed.): *Etudes de Biologie Végétale* (Hommage au Professeur Pierre Chouard). — Paris 1976. 603 pp., (mostly in French).

This volume is an homage to professor Chouard and was published on the occasion of his retirement. The intention of the editors was to show various aspects of plant biology to which prof. Chouard has directly or indirectly contributed during his scientific career, and to recall his personal achievements. Of the 44 contributions only the introductory ones are of a biographic nature, commemorating prof. Chouard's activities as a botanist. Most of the papers are original contributions summarizing the work done in recent years by professor Chouard's students, colleagues and foreign friends. The greater part is devoted to various aspects of flowering, and includes stimulating articles on the nature of floral stimulus (Bernier) and on the importance of correlative factors (Miginiac and Sotta). Other contributors in this section are Prat, Maresquelle, Blondon, M. Jacques and R. Jacques, Tran-Thanh Van, Chaylakhyan and Wellensiek. The other general theme of the book is organ correlations (marked by original views of Champagnat) phytotonies and endogenous rhythms. The volume contains additionally articles on subjects ranging from soilless open-air cultures on sand in the Sahara to investigations of assimilate transport. It provides a good insight into the research being actually carried on at Phytotron and in some other French centres. It brings a lot of original information and stimulating ideas in physiology of flowering, plant correlations and endogenous rhythmicity. What might have easily become a loose collection of unintegrated articles turned out to be an excellent book on developmental physiology. The book is a worthy homage to prof. Chouard.

J. KREKULÉ (*Praha*)

CLARK, B. F. C.: *The Genetic Code*. — The Institute of Biology's Studies in Biology No. 83, Edward Arnold (Publishers) Ltd., London 1977. 74 pp., £ 1.60.

The author, a professor at Aarhus University, Denmark, tried to do a seemingly impossible thing, i.e. to present within the scope of a thin booklet but at a high professional level a basic summary of contemporary knowledge of the metabolism and function of nucleic acids and proteins in living cells, even including very recent data (references from 1972—1976 predominate in the list of recommended literature). If he did not satisfy some of the specialists, he certainly created an excellent handbook for all the others interested in the problem. The matter is very well dealt with from the didactic point of view. It is divided into four main chapters (1. Cellular Macromolecules, 2. Elucidation of the Genetic Code, 3. Components of Protein Biosynthesis, 4. Punctuation), in which the reader is led from the repetition of generally known facts (formulae of amino acids) to the understanding of the principles of genetic code and of regulatory mechanisms of proteosynthesis. The reader has not only been supplied with many facts but also with the basic history of key discoveries and informed on mental and methodical approach of the experimentalists. Thanks to this form of presentation, the author was highly successful in giving "the reader a better understanding of the nature and scale of things we handle in molecular biology and hence a better 'feel' of the subject."

Z. OPATRŇÝ (*Praha*)

CRISTEA, M.: *Rasile de Porumb din România* [Races of Maize in Romania]. — Editura Academiei Republicii Socialiste România, 1977, 230 pp., Lei 25.

Maize is one of the most important crops in Romania. Both the high productive varieties and hybrides have their origin in local races and populations. The book describes 1880 maize samples collected in Romania, which are divided into racial complexes, races and subraces. The races of the flint variety include 4 racial complexes: 1) Conical flint short cob maize, 2) Romanian flint long cob maize 3) Flint maize with small orange kernels and 4) Eight kernel-row flint maize. Further races belong to the everta and dent types. The geographical distribution and main biological and agronomic characters of the individual races are presented. Races with valuable gene sources are recommended for plant breeding purposes, e.g. for cold resistance, earliness, drought resistance, disease and pest resistance, for high protein, lysin, oil, starch contents etc. The book is printed in Romanian and is accompanied by English and Russian Contents and Summaries. The book can be recommended to breeders of maize with a reading knowledge of Romanian.

T. GICHNER (*Praha*)

PILET, P. E. (ed.): **Plant Growth Regulation**. Proceedings of the 9th International Conference on Plant Growth Substances at Lausanne, August–September 1976. — Springer-Verlag, Berlin, Heidelberg, New York 1977. 305 pp., DM 64, US \$ 28.20.

In accordance with the program of the Conference the present proceedings are different from the previous. Thirty reports of invited speakers are presented in full extent whilst only titles of 203 paper demonstrations (posters) are included. Reports are distributed to eight chapters: The Wall of Growing Cells, Hormones — Membranes, Hormone Analysis, Auxins and Root Growth Inhibitors, Gibberellins and Cytokinins, Ethylene and Other Regulators Gravity and Light Effects and Hormonal Control. Proceedings of periodically held conferences dealing with a such special subject as is regulation of plant growth indicate which are the most promising and progressive fields of research. As compared with the 8th Conference more attention is paid to interactions of hormones and cell membranes including membrane receptors. There is described a successful isolation of auxin binding proteins which were solubilized from the corn coleoptile membranes and characterized by gel electrophoresis and their molecular weight. Interesting results are reported about a transcription factor which is released by treatment, of isolated plasma membrane vesicles by auxins. These results are consistent with a single master reaction of auxin which is initiated at receptors located on plasma membrane. On this basis the early and delayed effects of auxins can be explained. The progress of plant hormone research is dependent on the progress of methods. This progress is characterized in the contributions describing the use of high performance liquid chromatography and gas chromatography for analysis of gibberellins, abscisic acid and indoles, including auxins. Much attention is paid to interaction of auxins and root growth inhibitors in regulation of root elongation and georesponses. Presented evidence indicates that these processes are under the control of aeropetally moving IAA and ABA moving in basipetal direction. According to these results a revision of the Cholodny-Went hypothesis of the role of IAA in regulation of root elongation and geotropism is needed. This book does not contain special chapters on all individual classes of plant growth regulators. Special attention is, however, paid to gibberellins, cytokinins and to some less known regulators. The contribution of MacMillan dealing with metabolism of gibberellins shows some points which can simplify studies of this so complex class of plant hormones (evaluation of analytical procedures, irreversible deactivation of certain gibberellins by 2 β -hydroxylation, etc.). Contributions dealing with cytokinins describe a successful isolation of high affinity binding protein with high degree of specificity for cytokinins, the effect of environmental factors on synthesis and metabolism of cytokinins and function of cytokinins in regulation of cell metabolism. Two reports on ethylene describe identification of three classes of target cells for auxin- or ethylene-induced growth and different action of ethylene in senescence at cellular and organ levels. Attention is also paid to mechanisms by which phenolic substance affect the growth. The chapter on gravity and light effects contains a short review of geotropism mechanisms and an interesting attempt of Sievers and Volkman to explain the georeception on the basis of interactions of sedimenting amyloplasts with the endoplasmatic reticulum. The contribution of Bruinsma about hormonal regulation of phototropism presents evidences that, similarly to geotropism, the tropic curvature is rather the result of growth inhibition than growth promotion. Interesting are also reports on hormonal control of cell division cycle, abscission and flowering. The book is well edited, clearly arranged, containing good quality illustrations and subject index. It can be recommended as a source of up to date informations and literature for research workers and advanced students in plant physiology and biochemistry.

M. KAMÍNEK (*Praha*)