
Book review

Esser, K.; Kubitzki, K.; Runge, M.; Schnepf, E.; Ziegler, H. (eds.): **Progress in Botany. Morphology, Physiology, Genetics, Taxonomy, Geobotany**, Vol. 45. Berlin, Heidelberg, New York: Springer 1983. xvii + 404 pp., 23 figs. Hard bound \$ 69.10.

In the 1983 progress report of Plant Science, the section on genetics spans 75 pages, comprises 6 chapters and is characterized by its high-level, critical approach. Attentive readers will be brought up-to-date.

In the chapter on replication (W. Nagl), understanding of the eucaryotic DNA polymerase and the initiation of replication are briefly discussed: two crucial aspects, differential DNA replication and the role of chromatin structure, are characteristic for higher eucaryotes. Of special interest to plant breeders is the excellent report on both new and classical approaches at the higher plant level (G. Wenzel). Only recently has a joint strategy of genetic engineering and a handling of plant cells with classical recombination and selection processes been shown to be a promising collaboration. In addition, progress has been made in combining asexual recombination with tissue culture and recombinant DNA technology. The ever increasing literature on spontaneous and induced mutation is reported (W. Gottschalk) with special regard being given to the efficiency of mutagens, their joint action, the interactions be-

tween mutagens and non-mutagens, and emphasis on polyploidy. The chapter on the function of genetic material (R. Blaich) reports on the genetics of proteins and nucleic acids in flowering plants, concentrating on the present stage of knowledge on gene expression and regulation. The chapter on extranuclear inheritance (R. Hagemann and M. Metzloff) concentrates on molecular biology of plastids, mentioning the new plastid-gene nomenclature, the localization of plastid genes on the physical map of the plastid chromosome, including the presence of introns, overlapping genes and hybrid variegation. Population genetics (K. Wöhrmann and V. Loeschke) shows a new approach by intensifying connections to general population biology, with emphasis on enzyme polymorphism, selection components and demography, co-evolution in host-parasite interactions and competition. More aspects of evolution can be found in the report on the classification of seed plants (H.H. Poppendiek).

Again this progress report in botany demonstrates its integrating function in the world of plant genetics. The study of its yearly issue assures breeders of an acquaintance with the highlights of experimental and theoretical genetics – so far as plants are concerned.

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Announcement

Professor Melchers – Member of Japan Academy

Professor Dr. Georg Friedrich Melchers, member of the editorial board of TAG, for many years managing editor of *Molecular and General Genetics*, has been elected an Honorary Member of The Japanese Academy at the 783rd General Meeting held on November 12th 1984. The Japanese Academy

considers this appointment “an indication of its deep appreciation of . . . great contributions to the progress of genetics and evolution”.

Congratulations from the Editorial-board of TAG!