
 Book Reviews

Denffer, D. von; Ehrendorfer, F.; Mägdefrau, K.; Ziegler, H.:
 Lehrbuch der Botanik für Hochschulen. 31. ed.

Stuttgart, New York: G. Fischer 1978. XX, 1080 pp., 1031 figs.
 51 tabs., 1 map in color. Hard bound DM 69,—

It is a pleasure to see the 31st German edition of this famous textbook of plant science; the 9th English edition of which was published in 1976. Started in 1894 by Eduard Strasburger and his associates, by whose name the textbook is still referred to by insiders, it is the oldest existing textbook in botany. At the same time each edition is up-to-date and innovative, largely because through the years it again and again has had new and enthusiastic editors. The committee of authors is this time enlivened by the presence of Hubert Ziegler, who completely rearranged and updated the section on Physiology. The book maintains a 'classical' format and is subdivided into 4 parts: Morphology, Physiology, Evolution and Systematics and Geobotany. It is fully integrated towards a unifying concept of plant science but not at the expense of general biology. More than in the preceding editions the writers have succeeded this time in presenting all aspects of botany in one volume, a consequence of which is that with this edition the book contains over 1000 pages for the first time.

Genetics has also been completely integrated into this textbook, but with a strong list towards evolution. The structure of DNA and RNA as information carriers as well as their replication are treated in the section on plasmatic constituents. The function of nucleic acids, including transcription, translation, the genetic code, t-RNA, polysomes, substrate induction and repression are part of the chapter on enzyme regulation. The greater part on genetics is, however, handled as an introduction to the section on Evolution and Systematics with classical genetics receiving complete coverage which includes references to extrachromosomal heredity, transduction and mutation. Population genetics is presented in great detail and the transition via hybridization, polyploidy, macro- and micro-evolution to systematics and phylogeny is without interruption. After reading this book one is astonished that such an integration of genetics in a zoology textbook does not exist. In any case this botany textbook provides students of biology, agriculture, pharmacy and related fields with an excellent introduction to biology before they are exposed to the isolated and chopped-up bits of information from specialists, the fashionable way of indoctrinating students today.

In the same way as Genetics, Ecology is also up-to-dated and completely integrated into the subject of plant science. It seems to me, speaking from the didactical point of view, that this is the right way to present the material.

The new edition of the 'Strasburger' is again beautifully printed and has received care from the publisher. The price is comparatively low, a factor which may contribute to the miraculous success of this textbook for it continues to maintain its popularity among biologists.

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P. Pouget; J.-P. Doazan (eds.): Génétique et amélioration de la vigne. II. Symposium International sur l'Amélioration de la Vigne Bordeaux, 14-18 Juin 1977.

Paris: Institut National de la Recherche Agronomique 1978. 472 pp., 89 figs., 105 tabs. Soft bound F 230.—

The Institut National de la Recherche Agronomique hosted an international symposium on grapevine breeding June 14-18, 1977 which was attended by 130 specialists from 27 different countries. The 72 papers and communications presented have been compiled into a bound symposium volume.

This report is divided into 4 sections. The first, with the title Genetical Problems and General Methodology of Vine Breeding, discusses such topics as heredity of characters, cytogenetics, mutagenesis, interspecific hybridisation, selection methods and technology. Olmo (Davis, Calif.) stresses the importance of the fact that by man's modification, the gene pool of many grape species may be restricted or lost. New methods such as tissue culture, analysis of isoenzymes and use of haploids appear to be very promising in working towards the solving of such problems as those of taxonomy and genetic relationship. The most urgent goal of applied breeding is the production of virus resistant lines on a worldwide basis. Despite the great diversity of this selection one is able to obtain some interesting information on hybrids, polyploids and on the electronmicroscopic structure of pollen exine in various cultivars. During diakinesis of the pollen meiosis the 19 bivalents of *Vitis sylvestris* could be demonstrated. The segregation results for the color of young leaves of a dihybrid are most remarkable. The second part concentrates on discussing the breeding for resistance to pests and diseases, with special emphasis on the parasites of the phyllosphere (downy mildew, Oidium, Grey Mold) as well as on animal parasites (Phylloxera and nematodes). The ideal model to aim for is polyresistance.

The third section is directed towards the adaptation of grapes to edaphic, climatic and cultural conditions. It is evident that grafting, selection of rootstocks, selection for resistance against drought and cold and adaptation for warm climate are still the main topics of interest to applied breeders. The fourth part discusses the technological criteria of quality with special emphasis on organoleptic characters and the quality of table grapes.

These proceedings represent a good survey of the actual situation in grape breeding. Considering the fact that vines are still the products of vegetative propagation and that the grapes collected are the products of sexual fertilization processes one regrets the absence of studies on the problems of cloning, degeneration and on the biology of pollination and fertilization. Compared with the breeding programmes of other crops, grape breeding is still in the stage of combination, and a little bit of recombination. Therefore the terminology of using 'genotype' is wrong.

It is a fact that the culture of grapes is still mainly 'méditerranéenne'.

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