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BOOK REVIEW

STERN, H. ET AL.: RETTET DEN WALD. — Kindler Verlag GmbH, München 1980. 396 pp., 380 figs., DM 45.—.

The rising requirements on the creation and protection of living environment has stimulated the interest in forests even in many non-forestry professions. To protect the forest from ever increasing adverse results of human activity and of natural disasters is possible only if the principles and laws of its development are known. This idea instigated the journalist H. Stern to prepare his book "Save the Forest" with a team of renown authors (members of the München University).

The introductory chapters of H. Stern on the relationship between Man and forest in various periods is followed by chapters dealing with the biological aspects of the forest. P. Burschel acquaints the reader with the intricate relations between the forest and its environment, and with the conception of the forest as an ecosystem. The explanation of fundamental physiological processes and biogeochemical cycles facilitates the understanding of the structure and function of this "solar factory". The modern ecological interpretation is indisputably a valuable contribution. The further chapter on the animal component of the forest ecosystem is conceived analogously (W. Schröder).

The history of forests since primeval ages up to date as submitted by R. Plochmann, gives clear evidence of a strong human influence on the configuration of forests and entire landscape. The further chapters inform about forest management and cultivation techniques (P. Burschel) and about problems of game keeping and hunting (W. Schröder). H. Schulz presents a concise overview of wood and its utilization.

The additional functions of the forest are discussed in three following chapters: Forest and Nature Protection, Protection Forests, and Recreation Management (H. Bibelriether). Accompanied by aesthetically pleasing photographs these sections show that the forest, as seen today, has many important functions besides being merely a wood producer. The concluding chapter "Position of the Forest Between Ecology and Economy" by R. Plochmann gives useful suggestions for securing these functions and for the regulation of future forest management.

This voluminous scientific-popular "text-book" on forests (almost 400 pages) is written in a lively style which makes it enjoyable to read. The text prepared by well-known experts and complemented by illustrative graphs and figures is engaging and easy to understand. Numerous first-rate photographs both in colour and in black-and-white enhance the aesthetic level of the book.

The volume published with the subvention of the Colonia Insurance Corporation and the Working Society of German Forest Owners will doubtless comply with the authors' wish — to contribute to the rescue of the forest.

B. VINŠ (*Jílovitě- Strnady*)

HAHN, O.: ZIERGEHÖLZE. LAUB- UND NADELGEHÖLZE FÜR DEN GARTEN. — BLV Verlagsgesellschaft, München—Wien—Zürich 1981. 127 pp., Paperback DM 9.80, ÖS. 80,—, Sfr. 9,80.

This manual presents a brief but comprehensive review of 148 well known species of ornamental conifers, evergreens and deciduous trees that are commonly grown in parks and gardens. Every species is denoted by its Latin botanical name and its characteristic features are described: height and diameter of the crown in full stature, shape and size of leaves and/or of flowers, time of flowering, edibility or inedibility of fruits, and its indigenous region. Great attention is given to the soil as a basic factor in cultivation and to the particular requirements of each species on mechanical and chemical composition of the soil, its temperature and moisture content. Recommendations for the arrangement of the plants discussed in the architectonic pattern of the garden or park are added. The descriptions are accompanied by excellent colour photographs of individual species, mostly in bloom, and this display of forms and colours must be a great inspiration for every reader. The book is a rich source of information for laymen but even the experts in garden architecture will certainly derive benefit from reading it.

DANUŠE HODÁŇOVÁ (*Praha*)

RUBENSTEIN, I., GEGENBACH, B., PHILLIPS, R. L., GREEN, C. E. (ed.): GENETIC IMPROVEMENT OF CROPS. EMERGENT TECHNIQUES. — University of Minnesota Press, Minneapolis 1980. 242 pp., US $ 22.50.

At the University of Minnesota as many as six symposia on new trends in biology of particular importance to plant improvement were organized. This book contains papers from symposium held in 1979 which paid attention to the progress and potential practical use of methods of genetic engineering in plant improvement. This approach has attracted much attention of plant scientists in the recent years. As mentioned by Strobel in his introductory lecture (Potentials for Improving Crop Production), the 3% average annual increase in grain production during the past 25 years was dependent largely upon exponential use of nitrogen fertilizers, and it is obvious that new approaches to the solution of the problem of human nutrition are very actual. Despite the fact that crop improvements in the next years will depend on classical plant-breeding processes we are at the beginning of the development of new promising techniques.

Basic theoretical information necessary for understanding the principles of these techniques is provided in the chapter Genome Organization and Function (Thompson *et al.*: Patterns of DNA Sequence Repetition and Interspersion in Higher Plants; Flavell *et al.*: Cereal Genome Studies and Plant Breeding Research). The basis of methods of gene isolation and transfer is presented by Bedbrook *et al.* (Molecular Cloning of Higher Plant DNA) and Chilton *et al.* (Characteristics of T-DNA in Crown Gall Tumors). Transfer of organels, which can be used for transfer of genetic information, is discussed in contributions of Bonnet *et al.* (The Analysis of Organelle Behavior and Genetics Following Protoplast Fusion or Organelle Incorporation) and Athwal and McBride (Chromosome-Mediated Gene Transfer and Microcell Hybridization). The final part of the book deals with some special uses of tissue cultures in plant improvement. It contains contribution of Shepard (Mutant Selection and Plant Regeneration) and Meins and Lutz (Epigenetic Changes in Tobacco Cell Culture: Studies of Cytokinin Habituation).

The basic principles and methods are presented to a very limited extent. The authors do not overestimate the possibilities of individual approaches and techniques and, especially in the two introductory articles, both our needs and limitations are shown. The future development and practical use of these promising techniques are mostly dependent on the solution of many "small" problems and on the progress of plant physiology and biochemistry. As mentioned by Kleese and Duvick in their contribution: "Perhaps our greatest need, both with laboratory and field approaches to crop improvement, is to learn much more about how plants grow, develop, and reproduce. This basic information must be on hand before we can make efficient use of the much-publicized genetic-engineering techniques".

This moderate-size, well edited book can be recommended as a source of information and ideas to plant scientists and advanced students in plant physiology, biochemistry and genetics.

M. KAMÍNEK (*Praha*)