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BOOK REVIEWS AND ANNOUNCEMENTS

R. R. BROOKS, F. MALAISSE and A. EMPAIN: *The heavy metal-tolerant flora of southcentral Africa. A multidisciplinary approach.*
A. A. Balkema, Rotterdam, Boston, 1985. X + 199 pp., ill. Cloth. Dfl. 110.25.
ISBN 90-6191-543-0.

This book will present all the literature about heavy metal plants in South Central Africa, i.e. Zaire, Zambia, and Zimbabwe with the aim of an increased accessibility of non-English papers to English readers. Due to the steady destruction of the heavy metal vegetation by mining activities such a synthesis on the origin and evolution, phytosociology, phytochemistry, and physiology of the heavy metal tolerant plants in Africa should be very welcome.

It is a great disadvantage of this book, that the authors demonstrate a very superficial handling of data. According to figure 1, heavy metal plants are not present in Central and Western Europe; but even localities such as Sisenga (DREW & REILLY 1972) in Zambia are missing. ERNST (1974) should have described a plant association "Mohrio-Batopedinetum pulvinellati (Tab. 4.4), which he never has mentioned.

In a book with an enormous emphasis on microspecies differentiation a careful treatment of systematics may be expected. But this aspect is desolate. One can learn that *Armeria maritima* is a Caryophyllaceae instead of a Plumbaginaceae (p. 190), *Combretum* can switch from Combretaceae to Leguminosae (p. 191), *Cryptosepalum maraviense* is sometimes a Labiatae (p. 47, 51), but fortunately sometimes also a Caesalpiniaceae. *Uapaca* may be a member of the Leguminosae or Euphorbiaceae, *Landolphia* alters from Sapotaceae to Apocynaceae, *Pearsonia* from Papilionatae to Euphorbiaceae. There is no clear decision in the use of Graminae or Poaceae, Labiatae or Lamiaceae, Papilionatae or Fabaceae, Asteraceae or Compositae. Even in the botanical index no consequent treatment of families is given.

It is incredible that a discussion about the evolution and phytogeography of metallophytes in South Central Africa does neglect the contribution by WILD & BRADSHAW (*Evolution* 31: 282–293, 1977) to this topic. There is no reference to WILD (*Excelsa* 5: 17–22, 1975), WERGER et al. (*Vegetatio* 37: 79–89; 151–161, 1978), REILLY & REILLY (*Plant Soil* 38: 671–674, 1973), REILLY (*Nature* 215: 667–668, 1967) and ERNST (in KINZEL (ed.): *Pflanzenökologie und Mineralstoffwechsel*, pp. 472–506. Ulmer, Stuttgart).

Sometimes the authors suffer by overestimation of their own work. Despite only four standard publications on copper tolerance of *Silene dioica*, this plant should be "one of the best known of the metallophytes". This statement is a complete ignorance of all the work on *Agrostis, Anthoxanthum, Armeria* and *Silene cucubalus* in Europe (see review in ERNST 1982). In the same chapter we can learn that *Silene otites* is a serpentinophyte, ignoring the occurrence of this species on a wide range of soil conditions from heavy metal soils up to sand dunes. In addition, the authors do not demonstrate a good understanding of metal tolerance, if the authors state that "it is difficult to decide to which element (Cu or Co) a plant is tolerant". Indeed, there is no lable on the plant in the field. Without carrying out experiments and with an arrogant prejudice about well established procedures for metal tolerance testing (p. 128) there will be no progress in knowledge.

I had hoped to have a pleasant reading; however, due to the superficial treatment of data and topics this book is a missed chance.

W. H. O. ERNST

W. G. BEEFTINK, J. ROZEMA and H. L. HUISKES (Eds.): *Ecology of the coastal vegetation.* Advances in vegetation science 6 (reprinted from Vegetatio, vol. 61/62, 1985) Dr. W. Junk, Publishers, Dordrecht, 1985. XX + 598 pp., ill. Cloth. Dfl. 400.00, US$ 139.50, £ 110,95. ISBN 90-6193-531-8.

This book brings together contributions from participants in the 1982 Symposium on the ecology of coastal vegetation which was organized on the occasion of the 25th anniversary of the Delta Institute for Hydrobiological Research (Yerseke, the Netherlands). The aim of the symposium was to integrate various aspects of geobotanical and environmental research in salt marshes and sand dunes. The volume is divided into 6 parts: the first five comprise specialized papers on the following topics: vegetation studies; investigations at the population level; ecophysiological research; studies on biogeochemical and physical processes; and conservation and management. In part 6 five authors present more generalized results.

In their preface, the editors point out that due to the type of papers presented at the meeting, they were forced to classify most of them into classical topics. Unfortunately, the first part, on vegetation studies, is not logically arranged. It is a combination of descriptive work on vegetation and of experimental work often carried out with single species. On the whole, relatively few contributions at the vegetation level are given. Interesting examples of such studies are those from Corre on environmental structures and variation in coastal vegetation of the Golfe du Lion, from Roozen and Westhoff on a long-term salt-marsh succession and from Haeck et al. on phytosociological amplitudes of a number of Dutch coastal species. The paper of Doing clearly demonstrates the high variation in species composition in coastal areas around the world. In contrast, the paper of A. Beeftink focuses on two species. The interactions between *Limonium vulgare* and *Plantago maritima* are studied both in the field and under experimental conditions in the greenhouse. In addition, the reactions of some dune-plant species to experimentally imposed environmental changes are described. This part of the book proves that holistic and reductionistic approaches are often combined in ecological studies.

The gap between studies at a vegetation level on the one hand and those at a population level (part 2) or on the ecophysiology of plant species (part 3) on the other hand, is relatively small. In part 2, population studies on "for example" *Salicornia* species, *Plantago maritima, Aster tripolium, Puccinellia maritima,* and *Festuca rubra* are presented. In this part such topics as genetic differentiation and phenotypic flexibility are also discussed. The clear black-and-white photographs in Jadwiga Wilkon-Michalska's paper are of considerable help when considering different growth forms of *Salicornia patula.* Clear photographs are also presented in the outstanding paper of Ernst (page 541). These figures present a good insight into differentiation of *Phleum arenarium* due to self pollination and microisolation of habitats as well as into the isoenzyme patterns of peroxidase of the different types.

Part 3, on ecophysiology, is a necessarily specialized but first-class collection of contributions by excellently selected authors. The responses of coastal species to variations in salinity, nitrogen, sulphide, manganese, and iron are discussed. The role of stress metabolites as well as those of osmotic adaptation and the characteristics of cell walls in relation to salt resistance of some halophytes are described. There is a good coverage of the most important physiological processes in coastal plants and the papers in this part show clearly the importance of the ecophysiological approach in understanding the behaviour of species in natural habitats. In addition to the case studies, general ecological processes are also discussed, especially in the first three parts of this book.

The part on biogeochemical and physical processes in coastal ecosystems, comprising four contributions, is relatively small but it is important that these aspects are included.

Articles on conservation and management of coastal areas complete this volume and focus primarily on the effects of mowing and grazing on coastal communities. Very interesting are the papers on vegetation development on newly embanked sandflats, on salt marsh research with respect to civil-engineering projects, and on the distribution and ecology of coastal species on roadsides. Recreation undoubtedly influences vegetation in many dune areas, and it is a serious omission that no paper on the effects of these human activities is inserted.

The concluding papers, written by W. G. Beeftink, Watkinson & Davy, Rozema et al., Westhoff,

and Ernst, illustrate clearly the increasing awareness of the importance of integrating different approaches in ecology. In fact, the synthesis given in part 6 is of a wider importance than the other parts.

This volume, presented in Junk's usual high-quality style, is generally well produced and the text largely error free. Furthermore, the literature coverage on the various topics is comprehensive and up-to-date. Altogether this book provides useful information for all ecologists. However, only those with the widest interests are likely to invest in this expensive book, particularly if the papers are already published in Vegetatio. Therefore, many people will use these papers individually, but it is certain that presenting them in a book form increases their value beyond that of their original publication. In conclusion then, this book is a valuable contribution and necessary for anyone working in dune areas. The three editors, Beeftink, Rozema and Huiskes are to be congratulated with this welcome addition to the ecological literature.

C. W. P. M. Blom

K. R. Shivanna & B. M. Johri: *The Angiosperm Pollen. Structure and Function.* Wiley Eastern Limited, New Delhi, Bangalore, Bombay, Calcutta, Madras, Hyderabad, 1985. XV + 374 pp., 107 ill. Rs. 275.00. ISBN 0-85226-738-X.

Based on more than 1200 literature references, the book as an advanced textbook tries to fill the gap between the knowledge accumulated in the Encyclopedia of Plant Physiology of 1962 (not cited) and several other monographs in the field, and illustrates the explosion of knowledge during the last 15–20 years. It is intended for post-graduate students, teachers and research workers "in conventional universities" and applied biological institutes. The monograph fulfills this aim to a large extent. It is divided into sections on pollen development, pollen sterility, viability and storage, in vitro germination and tube growth, pollen/pistil interaction, and intraspecific and interspecific incompatibility. In an appendix, laboratory procedures for pollen collection, germination and viability tests are described. The book is dedicated to the eminent investigators in the field of angiosperm reproduction, John and Yvonne Heslop-Harrison, whose charming pictures are included. Criticism: the quality of several figures is below an acceptable level, e.g. 2.20 D, 3.7 B, 4.7 B, 4.9 B, 5.7 E, 8.2 C.

H. F. Linskens

R. P. Pharis and D.M. Reid (Eds.): *Encyclopedia of Plant Physiology, New Series, Vol. 11. Hormonal regulation of development. III. Role of environmental factors.* Springer Verlag, Berlin, Heidelberg, New York, Tokyo, 1985. XXII + 887 pp., 121 figs. Cloth. DM 318.40. ISBN 3-540-10197-7.

This impressive volume 11 of the New Series of the Encyclopedia of Plant Physiology concludes the series devoted to hormonal regulation of development. After vol. 9, on the molecular aspects, and vol. 10, on the levels from cell to whole plant, this third part is on the interrelations with the environment. "Environment" is broadly interpreted to cover not only external factors but also such internal conditions as nutitrional state (both inorganic and photoassimilates) and time- and directions -related factors. The book therefore surveys a vast spectre of topics in which the hormonal aspects are discussed of such different phenomena as rhythms, juvenility, polarity, gravity, light, electromagnetic fields, temperature, lack and excess of water, and wounding. The arrangement of chapters and subjects is sometimes equivocal, but the extensive indices are helpful. Also chapters are included on pollen, symbiosis, and hormone production by microorganisms, insects and nematodes. The book concludes with a discussion of the ecological role of plant growth substances, i.e. on their contribution to the plant's adaptation to environmental conditions.

How to evaluate this abundant meal prepared by a thirty cooks? The quality of the dishes vances

of course with the inspiration and the care of the preparer. Several chapters are jewels of information with challenging ideas, others rather dull summaries. Sometimes, when the perspective is very one-sided, one would have wished a co-authorship. The worst example of this is the treatment of phototropism, where the author starts with the questionable statement "The only hormone that has been proven to mediate phototropism in shoots of vascular plants is auxin". Subsequently, experimental evidence on the participation of other hormones is scantily presented and swept under the carpet with irrelevant arguments, whereupon it is concluded "but of course supposition is no substitute for experiment"! However, this chapter is not at all representative for the quality of the book that generally rather well reflects the present-day state of the art of this part of plant physiology. Literature references are up to 1983, sometimes addenda signal new developments, e.g., turgorines. Here and there quite some overlap with other volumes of the Encyclopedia occurs, but the present volume is somewhat better provided with figures and tables than earlier published ones.

J. BRUINSMA

H. BORRIS and E. LIBBERT (Eds.): *Wörterbücher der Biologie: Pflanzenphysiologie.* Gustav Fischer Verlag, Stuttgart, 1985. 591 pp., 1985 ill., 11 tables. Board. DM 34.80. ISBN 3-437-20332-0.

To the volume "Plant Physiology" of the series "Dictionaries of Biology" have contributed: BERNHARD, KÖHLER, and BORRIS (Greifswald, DDR), EHWALD, GÖRING, HOFFMANN, and KOHL (Berlin, DDR), JACOB (Halle, DDR), LIBBERT (Rostoc, DDR), HAUPT (Erlangen, BRD), and LINSKENS (Nijmegen, The Netherlands). Remarkably, the name of the last author is not given at the title page.

In the preface the editors state to have aimed at a book with a function intermediate between a dictionary and an encyclopaedia: an attempt in which they may be considered to have succeeded. For example, "Gluconeogenesis" is explained in about 250 words: to "Glycolysis" one page (about 500 words), an additional scheme of reactions and their enzymes (also a full page) have been devoted.

In order to make the book easier to consult for non-German readers, typically German names such as Zellulose and Glukose have been given the internationally more usual spelling Cellulose and Glucose. But this tendency makes it sometimes difficult to find the explanation of typically German words. For example, the word "Milchsaft" is not explained; one has to realize that its synonym is more usual "latex". It would be better to insert "Milchsaft" and to refer to "latex".

Of course it is not difficult to sum up words one looks for in vain; the book has to remain a pocket-book. But the editors may consider to include in a possible second edition definitions of such important units as "Candela" and "Lux" and an ecologically important term as "Pheromone". The additional space could possibly be found by omitting terms as "Knightscher Versuch".

The book can certainly be recommended as a compendium to plant physiologists, but especially to all kinds of other botanists, who regularly or incidentally come accross plant physiological terms.

The book has been carefully edited, and contains clear schemes and illustrations. Its price is low for what it offers: a wealth of accurately and clearly written information.

J. VAN DIE

S. H. MANTELL, J. A. MATTHEWS and R. A. MCKEE: *Principles of Plant Biotechnology. An introduction to genetic engineering in plants.* Blackwell Scientific Publications, Oxford, London, Edinburgh, Boston, Palo Alto, Melbourne, 1985. 269 pp., ill. Paperback £ 10.80. ISBN 0-632-01215-3.

The subjects of "Principles of Plant Biotechnology" are treated in eight chapters: Introduction, Plant molecular biology, Cloning plant genes, Vectors for gene cloning, Cultural tools and techniques, Rapid clonal propagation, Crop breeding, and Industrial plant products. At the end of

the book a number of appendices, a list of abbrevations, a glossary, references, and an index are included.

Although the first four chapters take about half of the text, that apparently is not sufficient space to cover the complicated material, and in this part of the book the authors frequently refer to more detailed literature. Thus the reader needs a library for the full understanding of the treated subjects. However, this approach is preferably to an oversimplification of matters.

Further chapters are less complicated and easy to read. They give a rather complete survey of the indicated subjects.

The great value of the book depends on the approval of traditional tissue culture techniques as fundaments for the development and application of genetic engineering in plants. Such an approach might led to a better understanding of the several aspects of plant biotechnology and to a more balanced support of research in this field, nowadays excessively concentrated on gene manipulation.

The book is well-written, well-produced and very moderately priced and therefore not only recommended but also within reach of everybody interested in plant biotechnology, including advanced students.

G. STARITSKY

P. BAAS and R. B. MILLER (Eds.): *Functional and ecological wood anatomy.* Proceedings of the Martin H. Zimmermann memorial symposium, August 12, 1985. Reprinted from IAWA Bulletin n.s. 6(4), 1985. Rijksherbarium, Leiden, 1985. pp. 279–397, ill. US$ 15.00.

Martin H. Zimmermann, born in Switzerland in 1926, was an outstanding plant physiologist/wood anatomist. He came to the USA in 1954, assumed the Charles Bullard Professorship and the full directorship of the Harvard Forest in 1970. He died March 1984. His scientific work was mainly in the field of water and solute translocation in plants, especially in trees. He was strongly aware of the mutual dependency of transport physiology and vascular anatomy and that both disciplines should be studied simultaneously in order to make real progress in the understanding of either of them. He has much contributed to the growth of scientific knowledge on phloem as well as xylem transport and became well known as general editor of the new series of the Encyclopedia of Plant Physiology. Apart from that, he was a long-time member of the International Association of Wood Anatomists. A symposium, dedicated to him, was organized by this Association and held in August 1985.

The proceedings of this symposium contain contributions from BAAS and MILLER, from BAAS and CARLQUIST, and from CARLQUIST and HOEKMAN on ecological wood anatomy; from BORAJAS-MORALES and RURY on comparative and systematic wood anatomy respectively; from EWERS on xylem structure and water conduction; from GIBSON, CALKIN and NOBEL, and from ELLMORE and EWERS on hydrolic conductance in the xylem, and from SPERRY on xylem embolism.

The booklet contains clear pictures and photomicrographs and is excellently produced. It ought to be present in the libraries of botanical laboratories engaged in research on transport processes and the multicellular structures involved in them.

J. VAN DIE

B. T. STYLES (Ed.): *Infraspecific classification of wild and cultivated plants.* (The Systematics Association, Special volume No. 29). Clarendon Press, Oxford, 1986. XIV + 435 pp., ill. Hard cover £ 47.50. ISBN 0-19-857701-X.

The issue of the Int. Code for Nomenclature of Cultivated Plants in 1953 was an exceedingly useful step to start to regulate naming crop plants. Dialogue between scientists concerned with infraspecific

variation continued, but not frequent enough to be optimum.

The Oxford meeting of September 1984 brought together many specialists of 4 separate professions: "pure" plant taxonomists, foresters, crop and horticultural botanists, and plant breeders. The Systematics Association so arranged a forum discussing various viewpoints in infraspecific classification, and produced a firm basis for further deliberations at the 1987 Berlin and later Botanical congresses. It also stimulated the organisation of the First International Symposium on the Taxonomy of cultivated Plants during August, 1985, at Wageningen.

The well-written papers in the Symposium's proceedings present practice and problems of infraspecific classification (Hawkes, Stace, Hanelt, Parker, Lewis, Harlan & Wet and others) and review classification in particular groups or crops, such as cereals, grasses and legumes, forest trees, peas, beets and *Brassica rapa*. In tree crops the provenance is a practical unit to communicate about a group of trees or a population.

The various usages of the categories subspecies and variety are highlighted; by no means, unfortunately, these are applied unequivocally. Advanced techniques to distinguish between taxa and genotypes are considered auxiliary methods, and are useful when morphological and genetical features are insufficient. Baum discussed the application of computers for classification. The ICNCP history is reviewed by Brickell, and relations with ICBN are explained by several authors. Plants registration and variety rights as well as patents are described in relation to taxonomy. In his overview Heywood voiced the message that it is the consumer who needs consideration: a classification with clear, simple and usable information about both cultivars and wild species.

The editor did a commendable job and the book is produced in a well-readable format, if any errors remained these are not obvious. The price is steep and it is unfortunate that it took almost two years to produce the book.

The book is recommended to anyone in plant sciences coming across theoretical and practical problems in the classification below species level. The reviews are particularly suited to direct further reading.

L. J. G. VAN DER MAESEN

A. W. ROBARDS (Ed.): *Botanical Microscopy 1985*. Oxford University Press, 1986. X + 368 pp., ill. Cloth. £ 18.00. ISBN 0-19-854587-8

This book is a collection of 14 papers presented at the 'Third International Botanical Microscopy Meeting' which was held in York, England, in July 1985. The nature of these papers is twofold: some concentrate on specific aspects of preparation methodology of botanical specimens for ultrastructural analysis, whereas in others the main theme is a given question pertaining to plant cell structure and functioning, and how to tackle it by using modern techniques.

Chapters belonging to the first category deal with the following topics: factors that influence the quality of primary fixation by aldehydes (Coetzee); cryofixation methods, such as freezing, cryoprotection, low temperature scanning electron microscopy, freeze-substitution, freeze-fracturing (Robards); stereo transmission EM of thick specimens (Hawes); quantitative morphological analysis of cells and organelles (Briarty); principles and instrumentation of laser Doppler microscopy (Johnson & Dunbar); immunofluorescence microscopy (Knox & Singh); and micro-injection methods for studying intercellular transport processes (Goodwin & Erwee).

The remaining chapters are primarily devoted to specific plant cell phenomena, such as vesicle dynamics (Steer); cell wall microfibrils as studied by freezing methods and by negative staining (Willison & Abeysekera); the plant cytoskeleton (including the cortical cytoskeleton, preprophase band of microtubules, mitotic apparatus, phragmoplast, and membrane-cytoskeleton interactions) (Hepler); the application of immunofluorescence microscopy to study microtubule rearrangements in developing plant cells (Roberts, Burgess, Roberts & Linstead); wall formation as studied by freeze-fracturing (Herth); and protein body dynamics in cotton radicles as visualized by thin section EM and by stereo freeze-fracture images (Vigil, Steere, Christiansen & Erbe).

In all, the book provides a highly informative cross section of the modern techniques that are available to study the structure of plant cells. The combination of conciseness and clarity of presenta-

tion makes most contributions well suited to introduce the novice into new techniques, but the wealth of practical information presented in this volume will be appreciated by the more experienced as well. Considering its modest price, this very useful book will undoubtedly find its way to many libraries, both institutional and personal.

H. J. SLUIMAN

P. JACQUARD, G. HEIM & J. ANTONOVICS (Eds.): *Genetic differentiation and dispersal in plants.* Springer Verlag, Berlin, Heidelberg, New York, Tokyo, 1985. (NATO ASI Series. Series G: Ecological Sciences No. 5). XVII + 452 pp., ill. Hard cover DM 179,– ISBN 3-540-15977-0.

The present volume is based on papers presented at an international workshop on 'population biology of plants', held in Port Camargue, France, from May 21–25 1984. There is a total of 28 contributions, 16 have french addresses, the rest dutch (4), american (3), british (2), japanese (1), belgian (1) and german (1) addresses. Having very varied contents, it is a volume that will appeal to different readers in different ways.

The volume contains four parts, two of which are concerned with diversification and two with dispersal of plant populations. A further subdivision of the results concerns the gene and molecular level and the phenotypic and fitness level. Jacquard rightly remarks in the preface that simultaneous study from the point of view of a geneticist, a physiologist and a demographer only become fully meaningful in the light of evolution. Space does not permit a discussion here which each of the papers deserves, and I shall confine myself to those which I found most absorbing.

The paper by Cuguen et al. on enzymatic polymorphism in beech stands, analysed in the whole beech area, represents one of the rare treatments of a species with a 'long generation'. Allelic frequencies appear to constitute geographical clines, some of which are related to climatic variation. The role of natural selection is strongly suggested by the observed biochemical variation, but in other cases also genic migration, stochastic processes and historical factors seem to be responsible. An interesting paper by van Damme and Graveland is devoted to the study of differences between populations in the cytoplasmic genome of the gynodioecious species *Plantago lanceolata.* No clear differences in growth and biomass production could be demonstrated between the two cytoplasmic types. Dommée and Jacquard studied the genetic structure of populations of the gynodioecious species *Thymus vulgaris* with the use of allozymes. A predominance of female plants appears to occur in unstable biotic environments. It is interesting to note that in the outbreeding species *Armeria maritima* (paper by Lefèbre), of which hybrid swarms between the subspecies *maritima* and *elongata* occur in the Netherlands, genetic drift is the major component in the differentiation, whereas adjacent subpopulations appear to be reproductively isolated units.

In the part of the volume concerned with dispersal the contributions by van Dijk on gene flow parameters and by Gliddon and Salee on gene flow in *Trifolium repens* present many stimulating thoughts. In *Trifolium* the vegetative growth component of gene dispersal causes the genetic neighbourhood area to increase with the age of the plant. Van Dijk discusses the terms neighbourhood size and neighbourhood area in *Plantago major.*
He carried out a series of computer simulations in order to check the method for the estimation of some important gene flow parameters from a continuous population structure.

The contributors to this workshop volume are to be congratulated for synthesizing such an amount of information and for presenting the results so clearly and concisely. I keenly recommend the book to all working in the field of plant population biology.

TH. W. J. GADELLA.

ANNOUNCEMENT

Taxonomy of Cultivated Plants

The First International Symposium on Taxonomy of Cultivated Plants took place from 12–16 August 1985 in Wageningen, Netherlands.

W. A. Brandenburg, C. D. Brickell and F. Schneider were the conveners of the Symposium and L. J. G. van der Maesen edited the manuscripts. The opening address entitled "Historical Survey of the Naming of Cultivated Plants" was given by W. T. Stearn. The papers were divided in the following sections: 1. Nomenclature (11 papers), 2. Classification (9 papers), 3. Identification (4 papers), 4. Registration (10 papers), 5. Documentation (3 papers) and 6. Research Methods (7 papers).

In the proceedings a review of 10 posters is published.

The final summing up is given by J. G. Hawkes and L. J. G. van der Maesen reports on the panel discussion. 104 participants from 15 countries attended the symposium.

Acta Horticulturae 182– First International Symposium on Taxonomy of Cultivated Plants, 436 pages.

Price: Dfl. 81,– for ISHS-members, Dfl. 66,– for affiliated members, Dfl. 101,– for non-members.

The book is available from: the ISHS secretariat, De Dreijen 6, 6703 BC Wageningen, Netherlands