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 Book reviews
 

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**Porceddu, E.; Jenkins, G. (eds.): Seed Regeneration in Cross-Pollinated Species. Proceedings of the C.E.C./Eucarpia Seminar Nyborg/Denmark/15-17 July 1981.** Rotterdam: A.A. Balkema 1982. vii + 293 pp., several figs. and tabs. Hard bound Hfl. 70,-.

This publication reports on a symposium organized by the Committee for Gene bank and Resistance Breeding of the Directorate General for Agriculture of the Commission of the European Communities in collaboration with the Section 'Wild Species and Primitive Forms' of EUCARPIA.

Geneticists, breeders and botanists, altogether forty-five scientists from eighteen countries, presented papers dealing with the all important problem connected with gene bank work: the preservation of plant genetic resources with a minimal loss of genetic integrity.

In four sessions, theoretical and practical aspects in the regeneration of field crops, pasture and horticultural plants were discussed, with special emphasis on cross-pollinating plants. The subjects were: theoretical aspects (2 papers), technical aspects: forage plants (8), horticultural plants (4) and field crops (4). Some of the general problems under discussion were the strategy of plant collection and conservation, isolation problems in cross pollinators and the frequency of regeneration of different crops.

This symposium was the first in its field in Europe and one of the first in the world, therefore, one can not expect answers to all questions connected with these subjects. Only relatively short communications were given to discussing the complex of factors resulting in different ways of evolution in populations of cultivated plants and on the preservation of complete agroecosystems.

It is to hope that further meetings will follow to encourage discussions and actions on an adequate preservation of cultivated plants and their wild relatives. We have to be aware that a loss of genetic diversity is a loss for future plant breeding.

Th. Gladis, Gatersleben

**Trautner, T.A. (ed.): Current Topics in Microbiology and Immunology, Vol. 108. Methylation of DNA.** Berlin, Heidelberg, New York, Tokyo: Springer 1984. x + 176 pp., 22 figs. Hard bound DM 88,-.

"Methylation of DNA" is a book which has been timely and topical in its production. The subject matter has expanded rapidly in recent years and two discoveries have added even more impetus to this research area - that of hypomethylation in eukaryotes during gene expression, and the conversion of DNA to its Z form following methylation of cytosine. Both these points are discussed in several of the chapters that make up this volume, as are the older and better established ideas that postreplicative methylation of bacterial DNA has a protective effect against destruction by restriction endonucleases.

The first four chapters deal with bacterial aspects of the methylation of DNA, including enzymological features in *E. coli* and *B. subtilis*, its effects in repair, mutagenesis and recombination in *E. coli*, and the Mom gene of bacteriophage Mu. The latter is an example of modification function without corresponding restricting activity. The remainder of the book deals with eukaryotic organisms and, as expected, gene expression finds wide usage in all chapters. For example, DNA methylation in cultured vertebrate cells (Friend erythro-leukemia cells) is considered in relation to triggering to undergo a major shift in phenotype under controlled conditions. Other chapters cover such topics as the role of DNA methylation in viral systems (Adenovirus in particular), replicative considerations in both plants and animals, methylation of DNA and differentiation in animal cells, and methylation of the genes for 18s, 28s and 5s ribosomal RNA, with particular reference to *Xenopus* germ cells. The final two chapters deal with eukaryotic DNA methylation and its action on chromatin and the control of maternal inheritance in *Chlamydomonas* by DNA methylation. The latter of course is considered particularly for maternal inheritance of chloroplast and mitochondrial genes, and has implications for other eukaryotes.

The book is not intended to be encyclopedic in its coverage of DNA methylation, but rather reviews more recent findings in order to point the way for future investigations. The book succeeds in this aim and has a useful but small subject index.

A useful addition to the library of the biology student and research scientist alike.

J.F. Jackson, Glen Osmond