

Book reviews

Broertjes, A.M.; van Harten, A.M.: Applied Mutation Breeding for Vegetatively Propagated Crops. Developments in Crop Science, vol. 12. Amsterdam, Oxford, New York, Tokyo: Elsevier 1988. 345 pp., 28 figs., 48 tabs., 8 color plates. \$ 184.25.

The first edition of this well-received book appeared in 1978 as volume 2 of the series *Developments in Crop Science*; the revised and updated edition appears as volume 12 (why?). Both editions include an extensive coverage of the literature on practical mutation breeding in vegetatively propagated crops. In recent years, there has been a considerable increase in the literature available on mutation breeding, especially on in vitro techniques. Also, general mutation work is becoming a matter of routine, particularly in the breeding of ornamental plants. However, the labels have also been changed: "much of the work done in the past was 'mutation research'; today it is called 'biotechnology' or 'genetic manipulation', even though the methods applied remain largely unchanged. An example of this is the study of somaclonal variation and the irradiation of in vitro plant material for induction of mutations." It is not surprising, therefore, that the authors express their regrets that the present interest in biotechnology has had the consequence that funds have been withheld from mutation work, resulting in the decline in the number of mutation breeding research projects.

The number of crops mentioned in the first edition stimulated many breeders to apply mutation breeding. Thus, the new edition of an "old" book can expect to receive increasing attention, especially since it covers again the whole field. In addition to descriptions of methodology (mutagenic treatment, ploidy mutation, somaclonal variation, adventitious bud treatment), five chapters are devoted to the important species and their commercial mutants: root and tuber crops, ornamental and fruit crops, woody perennials and forest trees, and essential oil and fiber crops. Excellently designed indices ease the use of this book which has appeared at just the right moment to stimulate practical plant breeding.

H. F. Linskens, Nijmegen

Beach, D.; Basilio, C.; Newport, J. (eds.): Cell Cycle Control in Eucaryotes. Current Communications in Molecular Biology. Cold Spring Harbor, New York: Cold Spring Harbor Laboratory 1988. 211 pp. Soft bound.

This volume of short communications results from a meeting held at the cold Spring Harbor Banbury Conference Center in March 1988. The aim of this meeting was to ignore the slightly artificial barrier between growth control and cell cycle control. As a result, short, compact papers were presented by people whose interests range from mammalian growth factors signaling pathways to the simple biphasic division cycles of early frog embryos. Plant models are included only with yeast cells; the latter provide the best material for the genetic analysis of the eucaryotic cell cycle, and at least eight papers use yeast as subject material. In addition, mouse fibroblasts, *Xenopus* eggs, clams, *Drosophila*, diatoms, and *Aspergillus* are in. In the background of most articles is the topic of tumor cell proliferation. The articles concentrate of G1/S- and mitosis regulation; meiosis is excluded. However, "the primary event that causes mitosis to terminate has yet to be identified", say the editors.

H. F. Linskens, Nijmegen

Mayr, W.R. (ed.): Advances in Forensic Haemogenetics, vol. 2. Berlin, Heidelberg, New York: Springer 1988. XVIII/657 pp., 190 figs. Soft cover. DM 128.-.

The second volume of the series contains the scientific contributions presented at the 12th International Congress of the Society for Forensic Haemogenetics held in August 1987 in Vienna. This conference focussed on new developments in the analysis of alloantigens in red blood cells, leucocytes, platelets and certain plasma proteins, polymorphisms of plasma proteins and red blood cell enzymes, and their practical applications in disputed paternity.

From the genetical point of view, the most interesting communications were those on the use of monoclonal antibodies in forensic serology, on silent alleles in paternity testing, and on DNA polymorphism and typing for the identification of forensic biological material. HLA typing is possible on a single human hair by enzymatically amplified genes.

A whole group of lectures were devoted to population genetics and its practical application. Human populations are true populations, but finite in size. Generations overlap so that the evolutionary forces vary rapidly. This complexity influences gene frequencies, which are currently used for the biostatistical evaluation of paternity. Genetic markers, such as the HLA system, are now being widely applied to human population genetics.

These proceedings offer a valuable overview of up-to-date results on a certain aspect of human genetics – the forensic haemogenetic research.

H. F. Linskens, Nijmegen

Goodfellow, P. N.; Craig, I. W.; Smith, J. C.; Wolfe, J.: The Mammalian Y Chromosome: Molecular Search for the Sex-Determining Factor. Cambridge: The Company of Biologists 1987. 203 pp., 98 figs., 33 tabs. Hard bound.

This volume contains the papers and posters that were presented at a meeting on the mammalian Y chromosome held in Oxford in March 1987. In the first three papers, the genetic control of sex determination in *Caenorhabditis*, *Drosophila* and mice is reviewed. The role of X-chromosomal and autosomal testis-determining genes in males is summarized. Four papers report studies conducted on sequences in the Y chromosome: in the region of the telomere of the short arm, in the region of the centromere, and within the heterochromatin present on the long arm. Subsequent papers deal with the pseudoautosomal genes in man, the identification of the STS gene, the role of the mammalian Y chromosome in spermatogenesis, mapping of the H-Y gene, characterization of the serologically sex-specific antigene, DNA probes for analyzing specific regions of Y chromosome of mouse, and a testis-specific transcript detected by a human Y-probe. This supplement of the journal *Development* (vol. 101) presents up-to-date knowledge on the molecular aspects of the mammalian Y chromosome, including that of man. Postgraduates of medicine and biology, geneticists and human geneticists, as well as scientists who work in developmental biology will find this book most valuable.

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