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 Book reviews
 

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**Sakaguchi, K.; Okanishi, M. (eds.): Molecular Breeding and Genetics of Applied Microorganisms.** Tokyo New York San Francisco London: Kodansha and Academic Press 1980. xii + 160 pp., several figs., several tabs. Hard bound \$ 27.00.

This book reviews recent progress in the application of new genetic techniques to industrially important microorganisms, particularly referring to developments in Japan. Plasmids are dealt with in considerable detail, especially as they are useful in antibiotic production. One entire chapter is devoted to this aspect, relating to the production of chloramphenicol, aureothricin, streptomycin and other antibiotics. As is pointed out, the role of plasmids is not at all well understood in many cases. In another chapter the potential of the so-called degradative plasmids is fully explored. These are the plasmids found in many *Pseudomonas* species which confer on the host the ability to degrade such compounds as salicylate, naphthalene, toluene, xylenes, camphor and octane. Clearly these have possibilities for man-made materials, either for anti-pollution measures or for the conversion to other products.

Chapters on selected topics follow, for example one gives an interesting account of the purification of the m-RNA for calf rennin. This milk clotting enzyme which acts as an acid protease cleaving casein very specifically, is indispensable for cheese-making processes and so is in great demand worldwide. The ultimate aim of the work is clearly to clone the c-DNA for this enzyme in *E. coli*. Because of the possibility that in the future the RNA plasmids are expected to provide relatively safe systems for gene cloning (RNA is chemically and biologically labile), examples are given of enzymes useful for techniques of RNA manipulation (polynucleotide phosphorylase and RNA ligase). Naturally, the book would not be complete without chapters dealing with protoplast fusion, and that topic is found in the book.

The organisms dealt with in this way include *Brevibacterium* (amino acid producers), *Streptomyces* (antibiotics), *Saccharomyces* (fermentation products) and *Aspergillus*. Cloning with recombinant DNA is the subject of a further

chapter, and other genetic approaches are considered in a final chapter.

Conclusion: a very readable book, giving examples of the new genetic manipulation technology as used in microorganisms with high commercial potential.

J. F. Jackson, Nijmegen

**Zeven, A. C.; de Wet, J. M. J.: Dictionary of Cultivated Plants and Their Regions of Diversity, Excluding Most Ornamentals, Forest Trees and Lower Plants.** Wageningen: Pudoc 1982. 263 pp., 123 figs., 1 tab. Hard bound Hfl. 90,-.

This is the second revised edition of the dictionary, it first appeared in 1975 with P. M. Zhukovsky as second author who died shortly after publication. The first version has been reviewed in detail in this journal (Vol. 47, 1976, p. 308), but its great importance to theoretical research and plant breeding must be stressed once more. The arrangement of the chapters in more general ones discussing the origins of agriculture, domestication of plants and the regions of diversity and into more specialized ones on the treatment of cultivated species according to their occurrence in the 12 different regions of diversity (megacentres of Zhukovsky), has been retained. The chapter on plant domestication has been largely rewritten and the number of cultivated species has been increased from 2300 to nearly 2500. I am sorry to say that the revision seems to have been done a little too hastily. Criticisms from the above-mentioned and other reviews have been neglected. Still to be found are incorrect species names (e.g. *Lens esculenta*, *Aegilops squarrosa*), many misprintings, lack of data regarding the use of cultigens, inconsistencies in the treatment of species, incorrect statements on the history of agriculture (on p. 48 the story of the Spirit Cave of Thailand is reported without reference to newer data), etc. This is regrettable because otherwise the book presents highly useful information on many species of cultivated plants nowhere else discussed in such a comprehensive manner.

P. Hanelt, Gatersleben