

Bard, S.: Bibliography of Selected Publications of Life Sciences Under the Aspect of Replacing Animal Experiments, vol. 3, 1980–1981. München: Salem Forschungsinstitut 1982. 230 pp. Soft bound DM 80,-.

The Salem Research Institute, founded in 1974, aims to promote basic knowledge useful in reducing or replacing animal experiments with especially cell cultures of human fibroblasts and transformed cells. The bibliography in question contains more than 1,000 references for the period 1980/1981 which discuss the possibilities of replacing animal experiments by *in vitro* test systems. It covers the fields parasitology, microbiology, immunology, neurology, toxicology, cancer research, biochemistry, physiology, heart-circulation-systems, pathology, pharmacology, radiation, cell- and tissue-culture, epidemiology and computer models. Of special interest are the sections on genetic engineering (39 references), and genotoxicology (83 references). It is surprising how many efforts are made to replace animals by *in vitro* systems whereas the application of plants and plant cell cultures rarely occur in the medical field.

The institute also offers its own archives on the topic of its goal, as well as a computer service with a link to the data bank of the German Institute for Medical Documentation. Contact address is Salem Foundation, D-8652 Stadtsteinach, Federal Republic of Germany.

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Kosuge, T.; Meredith, C. P.; Hollaender, A. (eds): Genetic Engineering of Plants. An Agricultural Perspective. New York, London: Plenum Press 1983. xi + 499 pp., several figs., several tabs. Hard bound \$ 69.50.

This volume examines the recent advances in genetic technology and assesses the possible impact on agriculture and the

well-established plant breeding methods of essentially generation-wise assortive mating. It is the official record of a symposium held in 1982 at the University of California, Davis, an appropriate location for an examination of the impact of the new technology on food and fibre production.

The organization of the book is admirable in that as many as 33 chapters are dealt with by twice as many authors, enabling a very wide coverage of what in reality is a very broad subject. The topics have been carefully chosen so as to properly address the impact of genetic engineering. Thus the book begins with chapters on the more traditional procedures of plant breeding, followed by consideration of several better known genes and their regulation, including cytoplasmic male sterility. Then the methods of genetic engineering are introduced – at first the potential vectors such as cauliflower mosaic virus, T₁ plasmid and liposomes, and then several chapters follow on chromosome structure. Protoplast fusion finds a place in this volume, as does somoclonal variation. Although consideration of the use of microspores for genetic modification is dealt with, the potential use of pollen as vector or vehicle in the introduction of foreign genes into plants is not discussed.

The remainder of the volume deals with such aspects of crop productivity as salt and drought tolerance, pathogen produced toxins, nutrition and stress, disease resistance, and the problems confronting the breeder in obtaining a desired range of new forms for crop improvement. The volume is rounded off with a consideration of differentiation and finishes with a record of a panelist discussion and a very extensive index. Phillips, in a summarizing chapter, when speaking of genetic engineering, reminds us that, "We cannot afford not to pursue every available avenue to improve food production."

J. F. Jackson, Glen Osmond