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Fig. 3 at the end of the issue.

BOOK REVIEW

LEWIS, W. H. (ed.): POLYPLOIDY. BIOLOGICAL RELEVANCE. — Plenum Press, New York—London 1980. 583 pp., \$ 55.00.

The 13th Volume in the monograph series: Basic Life Science (General editor A. Hollaender) provides the Proceedings of the International Conference on Polyploidy: Biological Relevance, held at Washington University, St. Louis, Missouri, May 24—27, 1979. The introductory part of the Proceedings presents papers on the role of polyploidy in plant evolution. It is estimated that between 30 to 50 percent of flowering plant species have genetic chromosome numbers in multiples of the basic number characteristic of the genus to which they belong. As expounded in the delivered presentations, the common mode of polyploidy is not by spontaneous chromosomal doubling from a diploid to a tetraploid condition, but rather through the formation of sexual functioning of cytologically unreduced gametes in species population. The second part of the book deals with the distribution and evolutionary significance of polyploidy in the various plant taxa (Algae, Fungi, Mosses, Pteridophyta, Gymnosperms, Monocotyledons and Dicotyledons). Papers on polyploidy forms of insects as well as of fish, amphibians and of reptiles are presented in the third section. In contrast to the apparent success of polyploid plants, polyploid animals are rare exceptions. The number of existing insect species is estimated to be more than 2 million. In comparison with this diversity, the list of known polyploid forms is less than one hundred. The fourth part of the book considers the application of induced polyploidy in plant breeding. The performance of induced polyploids has consistently fallen short of expectation. Artificial autopolyploids once thought to have considerable agricultural merit like sugarbeets, rye, red clover *etc.*, are cultivated less today than they were 10—15 years ago. Induced autopolyploidy has its greatest breeding value probably in the perennial forages like alfalfa, orchardgrass *etc.* Moreover, induced amphiploidy offers the only opportunity for introgression between species if their F_1 hybrids are totally sterile. The concluding part of the Proceedings 'Polyploidy: future prospects' includes papers on molecular technique applied to polyploids, principles of demographic analysis and on clonal reproduction in animals.

Readership: anyone interested in plant breeding, plant and animal genetics and evolution.

T. GICHNER (*Praha*)