Book Reviews

McKay, R.; Raff, M.C.; Reichart, L.F. (eds.): Monoclonal Antibodies to Neural Antigens. Cold Spring Harbor Report in the Neurosciences. Vol. 2. Cold Spring Harbor N.Y.: Cold Spring Harbor Laboratory 1981. 282 pp., 121 figs., 28 tabs. Hard bound $ 42.00.

The use of monoclonal antibodies to identify molecules is of increasing interest. Conventional procedures of obtaining antisera from the blood of immunized animals has already considerably improved our knowledge of the nervous system. New and more detailed insights into the function and structure of the nervous system became possible by the use of highly specific monoclonal antibodies. The basis for their production is a new technology – the hybridoma technology – which is now used in research on the nervous system. In this meeting's report, scientists engaged in exploring the application of hybridoma technology to the nervous system discussed the state of technology and the developing trends in this field. The report is composed of five chapters concerned with defining neuronal cell types and cell lines, defining antigens, the synapse, the retina and the neuromuscular junction. Emphasis was placed on the use of monoclonal antibodies for purifying antigens, the study of the ontogeny and differentiation of cells and the function of specific molecules or cells in the nervous system. Monoclonal antibodies also provide a powerful tool for the biochemical characterization of the nervous system. There is the hope that new technology will make possible a further considerable increase in our achievements and will provide physicians with new weapons in their fight against neurological and psychiatric diseases. Therefore, this very good volume is interesting not only for specialists but also for neurologists and psychiatrists. H. Stäber, Berlin

Ellenberg, H.; Esser, K.; Kubitzki, K.; Schnepf, E.; Ziegler, H. (eds.): Progress in Botany. Morphology Physiology Genetics Taxonomy Geobotany, Vol. 43. Berlin, Heidelberg, New York: Springer 1981. XIV/382 pp., 25 figs. Hard bound $ 60.10.

The genetics section of this annual report on the still unhurt world of plant science covers the field of higher plant genetics for the recent year in an agreeable manner. Replication is treated by W. Nagl with emphasis on endoreplication, meiotic and differential DNA replication. Recombination is distinguished in sexual and asexual recombination. The authors (H. Binding and R. Nehls) give an interesting report which includes the discussion of protoplast fusion techniques, regeneration from fusion bodies, chromosomal behavior in hybrid cell lines and in whole plants, and the fates of extrakaryotic genophores. Asexual recombination with economically important plants is a promising area. The ample work being done on gene, and genome mutations in higher plants is treated by W. Gottschalk; the subject of chromosome mutations is destined for the next volume. The genetics of storage proteins and gene-enzyme relationships is skilfully reviewed by R. Blaich. Plastid genetics emphasizes the localization of plastid genes (R. Hagemann and T. Börner). In population genetics one can still distinguish between a theoretical approach and investigations of natural populations (K. Wöhrmann and J. Tomiuk). All the articles mentioned give an highly selective overview and are accompanied with long lists of references. H. F. Linskens, Nijmegen

Davern, C.I.: Genetics, Readings from Scientific American. Oxford: Freeman 1981. 331 pp., 252 figs. Soft bound £ 6.20.

This anthology represents a selection of Scientific American articles on fundamental problems of genetics together with Gregor Mendel's classic paper "Experiments in plant hybridization". After introductions by C.I. Davern the papers deal with the following topics: principles of heredity (Mendel, Crow, Beadle), the chemical basis of heredity (Hotchkiss and Weiss, Crick, Taylor, Cairns), genetic analysis and recombination (Zinder, Jacob and Wollman, Edgar and Epstein, Benzer, Ruddle and Kucherlapati), gene expression and regulation (Ingram, Crick, Yanofsky, Fiddes, Maniatis and Ptashne), plasmids (Clowes), virus insertion (Campbell), RNA-directed DNA synthesis (Temin), transposable genetic elements (Cohen, Shapiro), evolution (Mayr, Kimura), adaptation (Lwontin), repeated segments of DNA (Britten and Kohne) and selected topics of applied genetics (recombinant DNA, Grobstein; amniocentesis, Fuchs; bacterial tests of potential carcinogens, Devoret).

This book is well illustrated and the paper-back edition represents good value for the money. The anthology "Genetics" is ideal for the use of students of biology and medicine and of anyone with an interest in genetics.

F. H. Herrmann, Erfurt