cal localization of cytoplasmic genes in *Chlamydomonas* as well as recombinational mapping experiments with these genes which have not been published in sufficient detail elsewhere. Many of the generalizations she makes about the *Chlamydomonas* system are open to alternative interpretations and cannot be taken for granted until the data themselves can be analyzed in detailed research papers.

With this exception the book is excellent. It is well illustrated and contains copious references to work both new and old. It also contains a useful appendix describing some of the physical methods used to characterize organelle DNA and a detailed glossary of the terminology used by the present-day "organelle geneticist."

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Phytochemistry

Plant Lipid Biochemistry. The Biochemistry of Fatty Acids and Acyl Lipids with Particular Reference to Higher Plants and Algae. C. HITCHCOCK and B. W. NICHOLS. Academic Press, New York, 1971. xiv, 388 pp., illus. $19. Experimental Botany.

This is the first book on plant lipid biochemistry in the English language. (An earlier book by Mazliak has not been translated from French.) The emphasis in this new volume is on metabolism, and so the book is complementary to that of Hilditch and Williams, *The Chemical Constitution of the Natural Fats.* It has been the intention of the authors to present a book that will permit a reader, by selective reading, to become familiar with research accomplished in a specific area. This purpose is well served since the book has a massive bibliography. However, the work is much more than a compendium of references: each chapter is readable and clear.

The advantage of having cooperating authors, rather than independent contributors, is apparent. Topics from chapter to chapter are well cross-referenced, there is little repetition, and most topics are discussed. (Terpenoids and steroids are not considered.) There is some unevenness in the treatment of topics; for example, the three chapters dealing with fatty acids, their biosynthesis, and their degradation cover almost 150 pages, whereas the corresponding three chapters for glycerolipids cover just over 40. At some points useful comparisons are made between the metabolic pathways in plants and those in bacteria and animals, but again these comparisons are more thorough for fatty acids than for glycerolipids.

The chapters on fatty acids are detailed and documented, reflecting the expertise of the authors. The brief chapters on glycerolipids give thorough literature citations; however, the stereochemical numbering system for these lipids could have been used appropriately, and there is an error in the description of bacterial phospholipid synthesis, where it is stated that phosphatidyl ethanolamine is synthesized by way of cytidine diphosphate ethanolamine. Specialists will undoubtedly find arguable points and even small errors, but taken as a whole the book successfully accomplishes its objective.

At several points in the book subjects for future research are noted, and the last chapter gives a survey of methods applicable to the study of lipids in plants. Thus the book is of value to both the practicing and the potential researcher in this field. At the same time it should be a useful supplement to the resources of the plant biochemist or physiologist who wishes to have a ready summary and bibliography of recent work in plant lipid biochemistry.

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Books Received

The Acceleration of History. Gerard Piel. Knopf, New York, 1972. x, 370 pp. $8.95.

Adrenal Steroids and Disease. Cuthbert L. Cope. Lippincott, Philadelphia, ed. 2, 1972. xii, 884 pp., illus. $32.

The Biological Bases of Behaviour. Neil Chalmers, Roberta Crawley and Steven P. R. Rose, and Judy Hicklin, Eds. Published for the Open University Press by Harper and Row, New York, 1972. 318 pp., illus. Paper, $6.95.

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Cytochromes. Current Research I. Papers by Yoshiyuki Ichikawa, Toshio Yamano, Richard Di Augustine, James Fouts, *et al.* MSS Information Corp., New York, 1972. 244 pp., illus. $15.

The Desert World. David F. Costello. Crowell, New York, 1972. viii, 264 pp., illus. $7.95.

Design of On-Line Computer Systems. Edward Yourdon. Prentice-Hall, Englewood Cliffs, N.J., 1972. xvi, 608 pp., illus. $16.

The Electronic Structure of Atoms and Molecules. A Survey of Rigorous Quantum Mechanical Results. Henry F. Schaefer III. Addison-Wesley, Reading, Mass., 1972. x, 438 pp., illus. $7.95.

The Evolution of Primate Behavior. Alison Jolly. Macmillan, New York, 1972. xiv, 398 pp., illus. Paper, $4.25. Macmillan Series in Physical Anthropology.

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The New Guide to the Planets. Patrick