those physicists not already very familiar with group theory. Indeed, parts 2 through 7 cover many of the same topics as part 1, but in a much more leisurely fashion. For this reason a reading of the second "book" can serve in part as a preparation for the first.

The duplication of subject matter probably arises, in part at least, because different authors have written different sections. Part 1, entitled "Theory of Groups and Axiomatized Mathematics for the Use of Physicists," is by P. Cavaillès and Kahan. Part 2, on the inhomogeneous Lorentz group, is by T. D. Newton; part 3, by R. Gouarné, is on abstract groups; parts 4 and 5, by G. Rideau, are on group representations and the symmetric group; part 6, by Kahan, is on the axioms of quantum mechanics; and part 7, by R. Nataf, is on the rotation group. The ordering of these sections seems mysterious to me. Why, for example, should the rotation group be treated after the Lorentz group, when the former is simpler? Why should the section on the symmetric group be sandwiched between a section on group representations and another on quantum mechanics? Furthermore, the symmetric group is considered, not only in the part devoted to it, but in at least three other sections as well. If learning proceeds by repetition, the reader of this volume will learn about certain aspects of the symmetric group exceedingly well. The index refers to the treatments in parts 1 and 3, but inexplicably, not to those in parts 5 and 7.

I have some quarrel with the emphasis of certain sections. For example, in discussing the axiomatic foundations of quantum mechanics, Kahan makes the observation that "The difficulty of the new ideas is due largely to the unfamiliar character of these physical postulates." Surely, the basic physical ideas of quantum mechanics are by now well known to the theoretical physicists for whom the book is intended. The author's statement might have been timely if written in the late 1920's, but not today.

Although the work lacks unity as a whole, most of the individual parts contain considerable information about group theory that is of value to physicists. Especially useful, although too brief, is Newton's treatment of the Lorentz group. The information contained in this volume is available elsewhere, but not always with the same emphasis or clarity, and not all collected in a single reference work. For these reasons, the book will be valuable in the library. But because of the shortcomings of the work, coupled with its extremely high price, it will probably not find its way to the individual bookshelves of many physicists.

* * *

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Physics in biology

PHYSICAL TECHNIQUES IN BIOLOGICAL RESEARCH. (2nd ed.) Arthur W. Pollister, ed. Vol. 3, part A: Cells and Tissues. Academic Press, New York, 1966. $13.50

by Joseph G. Hoffman

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* * *

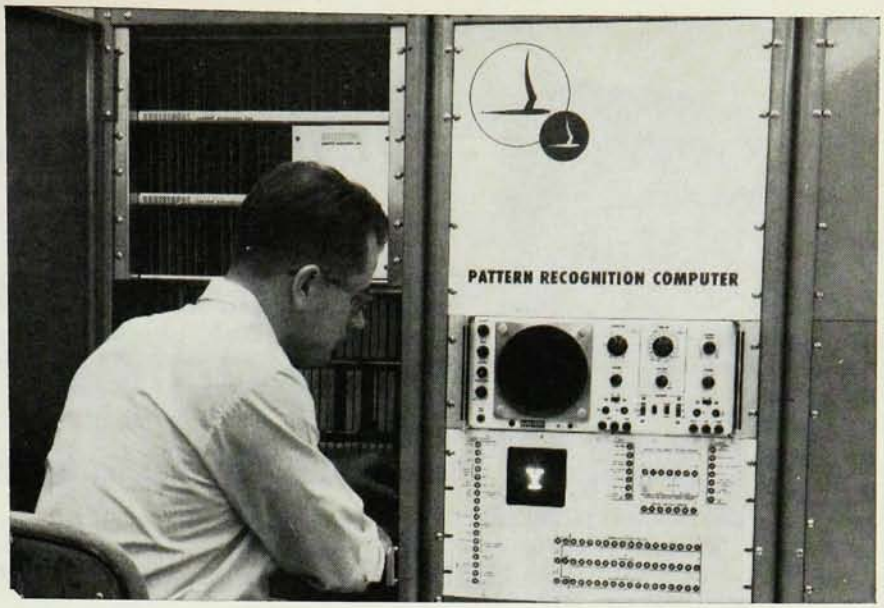
The reviewer, who often writes on biophysical topics, is a professor at the State University of New York at Buffalo.

Low frequency circuits

TRANSISTOR PHYSICS AND CIRCUITS. (2nd ed.) By Marlin P. Ristenblatt, Robert L. Riddle. 549 pp. Prentice-Hall, Englewood Cliffs, N. J., 1966. $14.00

by H. J. Hagger

The two parts forming the content of the book did not give the reviewer the impression of a well balanced "source of transistor circuit theory for circuit designers and technicians." The first part, on physics–even if it requires less than 20% of the book–is to some extent on a level too low for the reader of such a book and simultaneously also far away from the subject. It seems strange that Newtonian physics and its application to the solar system are essential just for explaining atomic structure. The sections on semiconductors follow the well known lines found in every book on transistor applications. Very briefly transistor and diode types are described. In the second part, on circuits, one section is devoted to a review of the basic principles of circuits and networks, forming an excellent basic training in circuit analysis on the basis of Kirchhoff's laws. In the section on the transistor as a circuit element equivalent circuits and the *h*-parameter approach are discussed. These basic principles are then extensively used in the next chapter on small-signal (low-frequency) amplifiers. It covers all the essential circuit parameters and circuit arrangements. A number of numerical examples are given. Power amplifiers are treated more on a descriptive basis than on exact circuit analysis. Problems on cascaded amplifier stages both for low and high frequencies are discussed in the next chapter. A good approach is



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