As might be expected in a work of this scope and magnitude, there are some errors and omissions. These, however, appear to be of minor nature and do not detract from the value of this scholarly book—a book which represents a truly outstanding contribution to the literature of primatology.

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Theoretical Physics

Proceedings of the Fifth Annual Eastern Theoretical Physics Conference. Providence, R.I., Nov. 1966. DAVID FELDMAN, Ed. Benjamin, New York, 1967. x + 248 pp., illus. $6.95.

A question may be asked as to the purpose of publishing proceedings of *theoretical* conferences. To those active in the field the results presented in any particular paper are probably well known, and in general the presentation is too concise to be of practical use. The conciseness of the papers likewise limits their utility to a physicist interested in starting research in a new area. Even if he is too lazy to search the journals, a random sampling of recent summer-school notes will provide a more detailed exposition. A good purpose such published proceedings might serve is to give a professional survey to physicists not directly involved in research discussed in a particular article. If we keep this view in mind, then the proceedings under review here do a good job. The topics discussed cover three fundamental, active, and exciting areas of theoretical research. These are astrophysics, high energy physics, and topics loosely grouped as many-body physics.

It is gratifying to note that, in spite of familiarity, those engaged in cosmology and astrophysics have not lost awe for the large numbers they play with. There is excitement generated in discussing processes, already encountered in undergraduate physics, occurring at 10^{10}°K with a density of 10^{10} g/cm^3 over a period of 10^{10} years. Most of the articles in this section are down-to-earth discussions of everyday physics applied in a sophisticated way to stellar or nebular occurrences. Among these we have a talk on the application of molecular physics to the cooling of gaseous clouds or the joint use of hydrodynamics and nuclear physics in setting up models for the last gasps of a star. This section demonstrates that in astrophysics we have a synthesis of all of physics.

Approximately two-thirds of these proceedings are devoted to high energy or elementary particle physics. One has a sampling of most of the current ideas about fundamental interactions. The talks are mainly evaluative in nature. The results of current algebra as well as its difficulties are aptly presented. Likewise, various recent developments of the dispersion and field theory approach are reviewed. One talk in this section stands out as having interest to a broader audience than just high energy physicists. A. S. Wightman's paper should be of value to those desiring a deeper understanding of some mathematical details of ordinary quantum mechanics.

The talks on many-body problems do not do justice to all areas now being investigated, but what is covered is covered in an interesting and easy manner. F. Dyson's discussion of the status of quantum mechanics for systems of many charged particles and bounds on their energy will be of interest to many physicists.

One minor objection that may be raised to these proceedings is that several of the talks are either inadequately referenced or not referenced at all. With the need for better referencing obvious, it is hoped that editors of future proceedings will pay more attention to this matter.

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Microbial Metabolism

Respiration and Phosphorylation of Bacteria. NINA S. GEL'MAN, MARINA A. LUKOYANOVA, and DMITRII N. OSTROVSKII. Translated from the Russian edition (Moscow, 1966). Gifford B. Pinchot, Translation Ed. Plenum, New York, 1967. x + 238 pp., illus. $12.50.

This volume is an excellent summary of the information available on the respiratory pathways in bacteria (in contrast to the animal). The first two chapters discuss the nature and structure of bacterial membranes, which are the sites of the respiratory mechanisms. There are in this discussion some dubious statements; for example, "there is no respiratory control mechanism in bacteria" (p. 3) and "It is obvious that obligate anaerobes . . . will not contain membranous structures" (p. 7). These may result from the translation, for later, in the detailed discussion of the literature, such sweeping generalities are avoided and a careful consideration of the experimental observations is given which shows that there is such control and that there are membranes in anaerobes. A third chapter takes up the respiratory chain of bacteria, and the fourth and last chapter discusses oxidative phosphorylation in bacteria with detailed consideration of the five somewhat unrelated cases known. There is then a summary of ten pages, which is less useful. About a thousand recent papers are referred to. Most of the literature is from the West, and most of the Soviet literature is that produced by the authors.

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Halley's Activities

Edmond Halley. ANGUS ARMITAGE. Nelson, London, 1966. xii + 220 pp., illus. 42 s.

Edmond Halley flourished in England in the last half of the 17th century and the first half of the 18th—at the summit of what can be called the scientific revolution in the country most involved in it. Halley's contributions to many of the facets of this revolution, with only so much of his biography as is necessary to illuminate them, form the subject matter of this study.

Halley improved astronomical instruments, both those for use on land and those for use at sea. He urged the use of telescopic sights and visited and observed with Hevelius, who did not use them. Halley determined the positions of numerous stars in both hemispheres and catalogued them, traveling to St. Helena to chart southern stars. He devised a method for determining a planet's orbital elements from three determinations of the planet's position. He suggested many refinements of the methods for determining longitude at sea and made numerous observations of the moon for that purpose. He consulted with Newton on the theory of gravity, predicted the periodicity of a comet, explained the rainbow, plotted compass variations, charted the oceans, took barometer readings for a study of the atmosphere, observed eclipses, ob-