

vented us from constructing an acceptable history of medieval science. Goldstein provides us with a remarkably well-cut stone for the task, but we are still in need of someone to erect the temple.

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Sun and Earth

Solar-Terrestrial Physics. Papers from the Inter-Union Symposium, Belgrade, Aug.-Sept. 1966. J. W. KING and W. S. NEWMAN, Eds. Academic Press, New York, 1967. 402 pp., illus. \$16.50.

This book contains the ten invited review papers given at the Inter-Union symposium on solar-terrestrial physics in Belgrade. Five topics were discussed at the symposium, and there were two review papers pertaining to each topic.

The first paper (by Lüst) gives a good description of the observed properties of the interplanetary gas and magnetic field and of the ways in which the observations are made. Together with the next paper (by Parker) it deals with the solar aspects of the solar-terrestrial relationship. These two chapters of the book may be recommended as an appropriate introduction for anyone who wants to familiarize himself with the solar-wind phenomenon.

The next two papers treat the observations (Ness) and the theory (Dungey) of the earth's magnetosphere under quiet solar conditions. There is some overlap with the subjects treated by Lüst and by Ness, but this hardly detracts from the book.

One of the longest chapters (by Obayashi, 60 pages) is devoted to the magnetosphere and its response to increased solar activity. Parts of what is discussed in the first section of the article have already been treated by Lüst in his chapter. The other two sections, on disturbances in the earth's upper atmosphere and on disturbances in the magnetosphere, give a comprehensive description of the phenomena. They also furnish a discussion of origins of the disturbances, including treatments of particle precipitation and of ionospheric current systems.

The very worthwhile task of trying to arrive at "an understanding and a coherent summary" of the interrelations of all the observed charged par-

ticles in the magnetosphere has been well coped with (by O'Brien) in the next chapter of the book. The characteristics of auroral radiations, Van Allen belts, the magnetosheath, and the solar wind are here related. The following long chapter (by Troitskaya, 60 pages) treats micropulsations of the earth's magnetic field, and shows how investigations of this subject can also give information about the phenomena caused by the interaction of the solar wind with the magnetosphere. In a short, well-conceived article Krassovsky discusses auroras. He distinguishes between ordinary auroras, caused by the injection of low-energy particles, and red auroras, associated with intense heating of the atmosphere by hydromagnetic waves.

The final chapters consist of an article (by Evans) on ground-based measurements and one (by Gringau) on rocket and satellite measurements of the temperature of the particles in the ionosphere and in other parts of the atmosphere. It is of interest to have the two methods juxtaposed, and it shows to some extent the inherent strengths and weaknesses of both.

A book written by a number of authors will necessarily omit aspects that other scientists in the field would like to see included. Similarly, some repetition and overlap can hardly be avoided. The present book suffers from both of these drawbacks, but—in the reviewer's judgment—not to such a degree that its value is significantly diminished. It can be recommended to all who want to delve into this fascinating inter-field that has so often been ignored—particularly by astronomers.

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Books Received

The Adaptations of Organisms. Rodolfo Ruibal, Ed. Dickenson, Belmont, Calif., 1967. x + 110 pp., illus. Text ed., \$2.25; trade ed., \$3. Dickenson Series on Contemporary Thought in Biological Science.

Advances in High Temperature Chemistry. Vol. 1. Leroy Eyring, Ed. Academic Press, New York, 1967. xiv + 334 pp., illus. \$14.50.

The Agricultural Research Service. Ernest G. Moore. Praeger, New York, 1967. xii + 244 pp., illus. \$5.95. Praeger Library of U.S. Government Departments and Agencies.

American Space Exploration. The First Decade. William Shelton. Little, Brown, Boston, 1967. xii + 367 pp., illus. \$5.95.

The Americanization of the Unconscious. John R. Seeley. International Science Press (distributed by Lippincott, Philadelphia), New York, 1967. viii + 456 pp. \$8.95.

Analytical and Numerical Methods of Celestial Mechanics. G. A. Chebotarev. Translated from the Russian edition (Moscow, 1965) by Scripta Technica. Ludwig Oster, Translation Ed. Elsevier, New York, 1967. xviii + 331 pp., illus. \$17.50. Modern Analytic and Computational Methods in Science and Mathematics, 9.

Ancient Medicine. Selected Papers of Ludwig Edelstein. Owsei Temkin and C. Lilian Temkin, Eds. Translated from the German by C. Lilian Temkin. Johns Hopkins Press, Baltimore, 1967. xiv + 496 pp. \$12.50.

Annual Review of Genetics. Vol. 1. Herschel L. Roman, Laurence M. Sandler, and Gunther S. Stent, Eds. Annual Reviews, Palo Alto, Calif., 1967. xii + 334 pp., illus. \$8.50.

Antibiotics. Origin, Nature and Properties. Tadeusz Korzybski, Zuzanna Kowczyk-Gindifer, and Włodzimierz Kuryłowicz. Translated from the Polish by Edwin Paryski. Pergamon, New York; Polish Scientific Publishers, Warsaw, 1967. Vol. 1 (xx + 1144 pp., illus.); vol. 2 (xviii + 406 pp., illus.). \$45.

Approximate Methods for Solution of Differential and Integral Equations. S. G. Mikhlin and K. L. Smolitskiy. Translated from the Russian edition (Moscow, 1965) by Scripta Technica. Robert E. Kalaba, Translation Ed. Elsevier, New York, 1967. xii + 308 pp., illus. \$14.

Archaeological Discoveries in the Holy Land. Compiled by the Archaeological Institute of America. Crowell, New York, 1967. xvi + 220 pp., illus. \$12.50.

Arithmetic for Science Students. Programmed Discussion. Jay A. Young. Prentice-Hall, Englewood Cliffs, N.J., 1968. vi + 106 pp., illus. Paper, \$1.56.

Aromatic Amine Oxides. Eiji Ochiai. Translated from the Japanese by Dorothy U. Mizoguchi. Elsevier, New York, 1967. x + 456 pp., illus. \$30.

Aromatic Rearrangements. Henry J. Shine. Elsevier, New York, 1967. x + 405 pp., illus. \$23.50. Reaction Mechanisms in Organic Chemistry Monograph 6.

Atlas of African Prehistory. Compiled by J. Desmond Clark. Maps by Eve Kemnitzer. University of Chicago Press, Chicago, 1967. 12 maps and 38 overlays, boxed, with explanatory booklet (64 pp., illus.). \$32.

Australian Aboriginal Portraits. Charles P. Mountford. Melbourne University Press, Melbourne, Australia; Cambridge University Press, New York, 1967. 89 pp., illus. \$11.50.

Background to Evolution in Africa. Proceedings of the symposium "Systematic Investigation of the African Later Tertiary and Quaternary," Burg Wartenstein, Austria, July-August 1965. Walter W. Bishop and J. Desmond Clark, Eds. University of Chicago Press, Chicago, 1967. x + 935 pp., illus. \$27.50.

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