

proteins synthesized periodically through the cycle? In studies of proteins separated on gels and of enzyme activity, Sauer finds no evidence of periodicity in *Physarum*. Howell and Baumgartel, on the other hand, do find periodicity in *Chlamydomonas* (at any rate in the rates of synthesis) and suggest that only some of this periodicity might be due to their system of light-dark synchrony. Finally, Rao and Sunkara show from fusion experiments that there is an S-phase inducer present in the G₁ cytoplasm of mammalian cells. A concentration-dependent inducer either of DNA synthesis or mitosis is a familiar concept in various cell types. What is surprising here is that the inducer is not concentration-dependent. Two cells in the same stage of mid- or late-G₁ are accelerated into S after fusion, and, even more surprising, they are not accelerated if they are in early-G₁. This paradoxical result should stimulate further work on S-phase control.

J. M. MITCHISON

Department of Zoology,
University of Edinburgh,
Edinburgh EH8 9YL, Scotland

Celestial Mechanics

Dynamics of Planets and Satellites and Theories of Their Motion. Proceedings of a colloquium, Cambridge, England, Aug. 1976. VICTOR SZEBEHELY, Ed. Reidel, Boston, 1978. xii, 380 pp., illus. \$39. Astrophysics and Space Science Library, vol. 72.

This proceedings volume contains the papers presented at the 41st Colloquium of the International Astronomical Union. The volume covers planetary theory and analytical methods, numerical and other techniques, satellites of Jupiter and Saturn and artificial satellites, and gravitational problems of three or more bodies. In total 28 papers and 15 abstracts are included.

The first two parts of the book deal with planetary and lunar motion. Some interesting, highly theoretical papers are presented, mostly by European scientists and mathematicians, particularly from the Soviet Union and from France. These papers are of high quality and indicate a much-needed resurgence of analytical methods to complement the current emphasis on numerical methods.

Most of the contributions in the third part of the book discuss extensions and refinements of useful and currently popular numerical methods. One contribution, by Petrovskaya of the Leningrad Institute, introduces modifications of the geopotential expansion designed to im-

prove its convergence and usefulness at the surface of the earth.

Part 4 concerns satellites, with a number of papers giving emphasis to improving the existing analytical series solutions of the natural satellites of Jupiter and Saturn. Some of these papers are status reports of continuing research projects in the area. Several new results or new extensions of previous results are given, especially the extension of deSitter's work by Aksnes and the second-order theory of the Galilean satellites by Ferraz-Mello.

Part 5 considers periodic orbits and orbital stability. A paper by Hadjimetriou and Michalodimitrakakis presents recent major results concerning periodic orbits in the general three-body problem. Other papers report on several interesting analytical and numerical results concerning the theory of orbits. Robinson discusses the effect of a large space station at the location of the Lagrangian points. Markellos presents a new kind of periodic orbit: the asymmetric, three-dimensional periodic orbit. Message and Taylor consider asymmetric planar periodic orbits.

The overall quality of the papers is high, and there are contributions from nearly every research center in celestial mechanics throughout the world. Workers in the field will refer to this volume for many years to come.

PAUL NACOZY

Department of Aerospace Engineering
and Engineering Mechanics, University
of Texas, Austin 78712

Books Received and Book Order Service

Books Received and the Book Order Service will be combined in issues in which there is a Readers' Service Card. To order any of the Book Order Service books, circle the corresponding number on the Readers' Service Card (pages (694A and 782A); the participating publisher(s) will ship the title(s) ordered and send you a bill. Where no Readers' Service number is given, the publisher is not participating in the Book Order Service; send your order and check directly to the publisher.

Advances in Parenteral Nutrition. Proceedings of a symposium, Bermuda, May 1977. Ivan D. A. Johnston, Ed. University Park Press, Baltimore, 1978. xvi, 582 pp., illus. \$29.50.

Aha! Aha! Insight. Martin Gardner. Scientific American, New York, and Freeman, San Francisco, 1978. viii, 180 pp., illus. Paper, \$6.50.

Algebra and Trigonometry for College Students. Richard S. Paul and Ernest F. Haeussler, Jr. Reston (Prentice-Hall), Reston, Va., 1978. xii, 560 pp., illus. \$15.95.

Alternatives to Animal Experiments. D. H. Smyth. Scholar Press, London, 1978 (U.S. distributor, Southwest Book Services, Dallas). 218 pp. Cloth, \$11.95; paper, \$5.95.

... and the Desert Shall Rejoice. Conflict, Growth, and Justice in Arid Environments. Arthur Maass and Raymond L. Anderson. MIT Press, Cambridge, Mass., 1978. viii, 448 pp., illus. \$19.95.

Applied Atomic Spectroscopy. Vol. 1. E. L. Grove, Ed. Plenum, New York, 1978. xviii, 314 pp., illus. \$39.50.

Astronaut Observations from the Apollo-Soyuz Mission. Farouk El-Baz. Smithsonian Institution Press, Washington, D.C., 1977 (available from the Superintendent of Documents, Washington, D.C.). x, 400 pp., illus. Paper, \$10.25. Smithsonian Studies in Air and Space, vol. 1.

Atom and Ion Sources. L. Vályi. Translated from the Hungarian. Wiley-Interscience, New York, 1978. 430 pp., illus. \$41.

Audiological Handbook of Hearing Disorders. Stephen V. Prescott. Van Nostrand Reinhold, New York, 1978. xiv, 274 pp., illus. \$17.95. To order this book circle No. 400 on Readers' Service Card

Automated Immunoanalysis. Part 1. Robert F. Ritchie, Ed. Dekker, New York, 1978. xiv, 334 pp., illus. \$34.50. Clinical and Biochemical Analysis, vol. 7.

The Bedouin. Shirley Kay. Crane, Russak, New York, and David and Charles, Newton Abbot, England, 1978. 160 pp., illus. \$10.50. This Changing World.

Behavior Modification. What It Is and How to Do It. Garry Martin and Joseph Pear. Prentice-Hall, Englewood Cliffs, N.J., 1978. xxii, 470 pp., illus. Paper, \$12.95.

Biochemical and Medical Aspects of Active Oxygen. Papers from a symposium, Kyoto, Japan, Nov. 1976. Osamu Hayaishi and Kozi Asada, Eds. University Park Press, Baltimore, 1977. xiv, 314 pp., illus. \$34.50.

Biocultural Evolution. A Workbook for Physical Anthropology and Archaeology. Kenneth L. Beals and Timothy G. Baugh. Burgess, Minneapolis, 1978. x, 114 pp., illus. Paper, \$5.95.

The Biology and Chemistry of the Compositae. Papers from a symposium, Reading, England, July 1975. V. H. Heywood, J. B. Harborne, and B. L. Turner, Eds. Academic Press, New York, 1977. Two volumes, illus. xiv, 620 pp., and xiv + pp. 621-1190. Each volume \$53.75.

Biology of the Reptilia. Vol. 7, Ecology and Behaviour. A. Carl Gans and Donald W. Tinkle, Eds. Academic Press, New York, 1977. xvi, 720 pp., illus. \$60.60.

Care of the Aging. Papers from a conference. Carolyn Spieler, Ed. Josiah Macy, Jr. Foundation, New York, 1978 (distributor, Independent Publishers Group, Port Washington, N.Y.). viii, 118 pp. Paper, \$5.

A Checklist of Names for 3,000 Vascular Plants of Economic Importance. Edward E. Terrell. USDA Agricultural Research Service, Hyattsville, Md., 1977 (available from the Superintendent of Documents, Washington, D.C.). ii, 202 pp. Paper, \$3.50.

The Chemistry of Nonaqueous Solvents. Vol. 5A, Principles and Basic Solvents. J. J. Lagowski, Ed. Academic Press, New York, 1978. xviii, 298 pp., illus. \$31.

Child Behavior Therapy. David Marholin II, Ed. Gardner Press, New York, 1978 (distributor, Halsted [Wiley], New York). xvi, 476 pp., illus. \$26.

(Continued on page 782)