

the subject—the review of solid state polymerization covers material which has been the subject of numerous reviews dating from 1961 through 1967, with not enough new material or interpretation to justify another review.

In spite of the excellence of the two articles discussed previously, the book remains a collection of reviews of highly specialized topics and as such must be regarded as a volume suitable for a library but not normally worth a permanent place on the individual's bookshelf.

A. H. FRAZER

*Pioneering Research Laboratory,
E. I. du Pont de Nemours and
Company, Wilmington, Delaware*

Monitored Solar Activity

The Proton Flare Project. (The July 1966 Event.) A. C. STICKLAND, Ed. M.I.T. Press, Cambridge, Mass., 1969. xiv + 514 pp., illus. \$19.50. *Annals of the IQSY*, vol. 3.

The Proton Flare Project of 1966 was a magnificent example of the kind of international cooperation this small planet must have. A large solar flare which injects energetic protons into interplanetary space is the most energetic impulsive phenomenon in the solar system, yet we have little understanding of the details of the physical processes involved. As part of the International Years of the Quiet Sun 1964–1965 an attempt was made to choose a single proton flare and to marshal all possible observational attention upon it. Observations of a flare and its surrounding active region can be obtained in many different ways, including several new techniques of the space age. No single laboratory has more than a small fraction of the necessary instruments, and observatories in many parts of the world are required for continuous coverage.

At the chosen time in 1966 solar activity was increasing after the minimum of the 11-year sunspot cycle, but had not yet reached a level at which flares might occur so frequently as to confuse the interpretation of effects to be attributed to a single flare. For the Proton Flare Project an elaborate rapid international communication system was established. Solar active regions were carefully monitored, and when a particular region reached a pregnant configuration on 5 July 1966 a warning was

sent to all stations so that detailed observations could begin before the possible flare. The sun cooperated by producing a large proton flare just after midnight on 7 July 1966. This book describes the resulting cooperative efforts by more than 100 workers at 54 institutions in 18 nations. It must be said that we still do not understand the mechanism of a solar flare, but the present effort is a significant step toward this goal. Everyone interested in flares from the viewpoint either of fundamental processes or of practical applications such as effects on astronauts, supersonic plane passengers, and terrestrial communications will want to be familiar with this book.

I recommend that the book be read in the following sequence: first, the general summary by P. Simon and Z. Svestka; second, the specialized summaries on the development and activity of the active region by V. Banin *et al.*, on energetic particles by S. M. Krimigis, and on low-energy particle effects in the ionosphere by W. Dieminger. One can then pick from among the 60 detailed technical papers to suit one's own interest and needs.

JOHN M. WILCOX

*Space Sciences Laboratory,
University of California, Berkeley*

Books Received

Analytical Serology of Microorganisms. Vol. 1. J. B. G. Kwapinski, Ed. Interscience (Wiley), New York, 1969. xii + 692 pp., illus. \$25.

Analyzing Children's Art. Rhoda Kellogg. National Press Books, Palo Alto, Calif., 1969. iv + 308 pp., illus. \$8.95.

Anatomy of the Monocotyledons. C. R. Metcalfe, Ed. Vol. 3, Commelinales-Zingiberales. P. B. Tomlinson. Oxford University Press, New York, 1969. xx + 448 pp., illus. \$14.75.

Anson Marston: Iowa State University's First Dean of Engineering. Herbert J. Gilkey. College of Engineering, Iowa State University, Ames, 1969. xii + 292 pp. + plates. \$4.50.

La Biologie des Sols. Yvon Dommergues. Presses Universitaires de France, Paris, 1968. 128 pp., illus. Paper, 3.30 F. "Que Sais-Je?", No. 399.

Biology of the Reptilia. Carl Gans, Ed. Vol. 1, Morphology A. Angus d'A. Belairs and Thomas S. Parsons, Eds. Academic Press, New York, 1969. xvi + 376 pp., illus. \$11.50.

The Chemistry of Germanium. Frank Glockling. Academic Press, New York, 1969. viii + 236 pp., illus. \$11.

Conflict and Reconciliation. A Study in Human Relations and Schizophrenia. Helm Stierlin. Anchor (Doubleday),

Garden City, N.Y., 1969. xii + 268 pp. Paper, \$1.45.

Critical Readings in Chemistry. M. G. Brown. Houghton Mifflin, Boston, 1968. xii + 92 pp. Paper, \$1.75. Concepts in Chemistry.

Demonstrations in Physics. Julius Sumner Miller. Ure Smith, Sydney, Australia, 1969. xlii + 446 pp., illus. \$5.50.

Depressed Metabolism. Proceedings of the First International Conference, Washington, D.C., 1968. X. J. Musacchia and Joseph F. Saunders, Eds. Elsevier, New York, 1969. xxii + 632 pp., illus. \$16.

Dictionary of Symbols of Mathematical Logic. Robert Feys and Frederic B. Fitch, Eds. North-Holland, Amsterdam, 1969. xiv + 174 pp. \$9.50. Studies in Logic and the Foundations of Mathematics.

Endocrinology and Human Behavior. Proceedings of a conference, London, 1967. Richard P. Michael, Ed. Oxford University Press, New York, 1968. xviii + 350 pp., illus. \$18. Oxford Medical Publications.

The Evolution of Chemistry. A History of Its Ideas, Methods, and Materials. Eduard Farber. Ronald Press, New York, ed. 2, 1969. x + 438 pp., illus. \$10.

Evolutionary Operation. A Statistical Method for Process Improvement. George E. P. Box and Norman R. Draper. Wiley, New York, 1969. xii + 244 pp., illus. \$11. Wiley Series in Probability and Mathematical Statistics.

Foetal and Neonatal Physiology. A Comparative Study of the Changes at Birth. Geoffrey S. Dawes. Year Book Medical Publishers, Chicago, 1968. 248 pp., illus. \$11.

Gene Activity in Early Development. Eric H. Davidson. Academic Press, New York, 1969. xii + 376 pp., illus. \$12.50.

The Indians of Texas in 1830. Jean Louis Berlandier. Edited and introduced by John C. Ewers. Translated from the French by Patricia Reading Leclercq. Smithsonian Institution Press, Washington, D.C., 1969 (distributor, Random House, New York). xii + 212 pp. + plates. \$10.

Insecta. Commonwealth Institute of Entomology. Zoological Society of London, London; Commonwealth Institute of Entomology, London, 1968. xvi + 468 pp. Paper, \$17. Zoological Record, vol. 102, section 13, 1965.

Inter-Institutional Cooperation and International Education. Shepherd L. Witman. Education and World Affairs, New York, 1969. 72 pp. Paper. Occasional Report, No. 8.

Intestinal Absorption and Malabsorption. Proceedings of a symposium, Zurich, 1967. D. H. Shmerling, H. Berger, and A. Prader, Eds. Karger, Basel, 1968 (U.S. distributor, Phiebig, White Plains, N.Y.). x + 214 pp., illus. \$12. Modern Problems in Pediatrics, vol. 11. Bibliotheca Paediatrica, No. 87.

Jahrbuch der Deutschen Akademie der Wissenschaften zu Berlin, 1967. Akademie-Verlag, Berlin, 1968. viii + 746 pp. DM 48.

Laboratory Exercises in Microbiology. George A. Wistreich and Max D. Lechtman. Glencoe, Beverly Hills, Calif.;

(Continued on page 218)

2nd Edition

THE EYE, Volume 1



edited by **HUGH DAVSON**, *Physiology Department, University College, London, England*

In this completely revised edition of Volume 1 there have been some essential changes in scope. The great advances in our knowledge of the biochemistry of the retina have made a separate chapter necessary to cover this aspect adequately; similar advances in the biochemistry of the lens have made it advisable to split the subject into two chapters.

Contents: Peter C. Kronfeld, **THE GROSS ANATOMY AND EMBRYOLOGY OF THE EYE**; H. Davson, **THE INTRAOCULAR FLUIDS**; H. Davson, **THE INTRAOCULAR PRESSURE**; Antoinette Pirie, **THE VITREOUS BODY**; S. G. Waley, **THE LENS: FUNCTION AND MACROMOLECULAR COMPOSITION**; Ruth van Heyningen, **THE LENS: METABOLISM AND CATARACT**; D. M. Maurice, **THE CORNEA AND SCLERA**; C. N. Graymore, **GENERAL ASPECTS OF THE METABOLISM OF THE RETINA**. 1969, 679 pp., \$26.00

FLUORESCENCE ASSAY IN BIOLOGY AND MEDICINE, Volume 2

by **SIDNEY UDENFRIEND**, *Roche Institute of Molecular Biology, Nutley, New Jersey*

A Volume of Molecular Biology
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Provides a working knowledge of fluorescence theory and practice, and conveys to the biologist the potentialities of fluorescence assay, seeking to make him aware that applications to structural studies on proteins and other macromolecules, enzyme-coenzyme-substrate interaction, and immunochemistry will open new vistas and that the development of newer instrumentation and chemical methodology will make more metabolites amenable to microfluorometric assay. An attempt has been made to instill the feeling that this is a versatile and powerful tool and that present applications do not begin to realize its full potential.

September 1969, about 618 pp.

METHODS IN ENZYMOLOGY

Volume 13; **CITRIC ACID CYCLE**

edited by **JOHN M. LOWENSTEIN**, *Graduate Department of Biochemistry, Brandeis University, Waltham, Massachusetts*
June 1969, 728 pp., \$29.50

Volume 14; **LIPIDS**

edited by **JOHN M. LOWENSTEIN**, *Graduate Department of Biochemistry, Brandeis University, Waltham, Massachusetts*
Third quarter, 1969, 704 pp., \$29.50

Volume 15; **STEROIDS AND TERPENOIDS**

edited by **RAYMOND B. CLAYTON**, *Stanford University School of Medicine, Palo Alto, California*
August 1969, 796 pp., \$32.50

Volume 16; **FAST REACTIONS**

edited by **KENNETH KUSTIN**, *Department of Chemistry, Brandeis University, Waltham, Massachusetts*
Fourth quarter, 1969, about 438 pp.



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(Continued from page 168)

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Mathematical Papers. William Kingdon Clifford. Robert Tucker, Ed. Chelsea, New York, 1968. lxxii + 658 pp., illus. \$15. Reprint of the 1882 edition.

Mechanical Engineering for Professional Engineers' Examinations. Including Questions and Answers for Engineer-in-Training Review. John D. Constance. McGraw-Hill, New York, ed. 2, 1969. xx + 492 pp., illus. \$11.50.

Mechanisms of Molecular Migrations. Vol. 2. B. S. Thyagarajan, Ed. Interscience (Wiley), New York, 1969. x + 470 pp., illus. \$22.50.

Medical Thermography. Proceedings of a Boerhaave Course for Postgraduate Medical Education Given in Collaboration with the Netherlands' Society of Radiology, Leiden, 1968. S. F. C. Heerma van Voss and P. Thomas, Eds. Karger, Basel, 1969 (U.S. distributor, Phiebig, White Plains, N.Y.). viii + 224 pp., illus. Paper, \$15.60. Bibliotheca Radiologica, No. 5.

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The Mutants of Maize. A pictorial survey in color of the usable mutant genes in maize with gene symbols and linkage map positions. Arranged by chromosome location. M. G. Neuffer, Loring Jones, and Marcus S. Zuber. Crop Science Society of America, Madison, Wis., 1968. vi + 74 pp., illus. Cloth, \$6; paper, \$5.

Orbitals and Chemical Bonding. P. F. Lynch. Mifflin, Boston, 1968. viii + 56 pp., illus. Paper, \$1.75. Concepts in Chemistry.

The Organic Compounds of Lead. Hymen Shapiro and F. W. Frey. Interscience (Wiley), New York, 1969. xiv + 498 pp., illus. \$18. Chemistry of Organometallic Compounds.

Origin and Distribution of the Elements. An international symposium, Paris, 1967. L. H. Ahrens, Ed. Pergamon, New York, 1968. xviii + 1178 pp., illus. + 2 plates. \$48. International Series of Monographs in Earth Sciences, vol. 30.

The Origins of Intellect: Piaget's Theory. John L. Phillips, Jr. Freeman, San Francisco, 1969. xviii + 150 pp., illus. Paper, \$2.75. Psychology Series.

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Plant Cell Organelles. Proceedings of the Phytochemical Group Symposium, London, 1967. J. B. Pridham, Ed. Academic Press, New York, 1968. xiv + 264 pp., illus. \$9.50.

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Pergamon, New York, 1968. viii + 600 pp., illus. \$25. International Series of Monographs in Pure and Applied Biology: Zoology, vol. 39.

Psycholinguistics. Experiments in Spontaneous Speech. F. Goldman Eisler. Academic Press, New York, 1968. viii + 172 pp., illus. \$8.50.

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Reality and Dream. Psychotherapy of a Plains Indian. George Devereux. Psychological tests edited and interpreted by Robert R. Holt. Anchor (Doubleday), Garden City, N.Y., 1969. 1 + 622 pp. + 8 plates. Paper, \$3.95. Revised version of the 1951 edition.

Reforming American Education. The Innovative Approach to Improving Our Schools and Colleges. Alvin C. Eurich. Harper and Row, New York, 1969. xviii + 270 pp. \$6.50.

Rock and Mineral Analysis. John A. Maxwell. Interscience (Wiley), New York, 1968. xviii + 590 pp., illus. \$24.50. Chemical Analysis, vol. 27.

Spectral Properties of Disordered Chains and Lattices. J. Hori. Pergamon, New York, 1968. xii + 232 pp., illus. \$10. International Series of Monographs in Natural Philosophy, vol. 16.

Spiders, Scorpions, Centipedes and Mites. J. L. Cloudsley-Thompson. Pergamon, New York, 1968. xvi + 280 pp., illus. + 18 plates. Cloth, \$6.50; paper, \$4.50. Commonwealth and International Library: Biology Division. Reprint, with additions, of the 1958 edition.

The Starch Industry. J. W. Knight. Pergamon, New York, 1969. xiv + 190 pp., illus. + 16 plates. Cloth, \$5.50; paper, \$4. Commonwealth and International Library: Chemical Industry.

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The Transport of Plant Hormones. Proceedings of the NATO/EGE University Summer Institute, Izmir, Turkey, 1967. Y. Vardar, Ed. North-Holland, Amsterdam, 1968. viii + 460 pp., illus. \$20.