

the treatment of various atomic and nuclear resonance phenomena comes at the very end of the text and is on the brief side. Nevertheless, viewed as a whole, the text is an excellent one and a valuable addition to instructional literature.

The Life and Death of Cells. By Joseph G. Hoffman. 301 pp. Hanover House Books, Garden City, N. Y., 1957. \$4.50. *Reviewed by P. Morrison, Cornell University.*

There are three clear levels of unity in the wonderful pattern that is life: the biochemical, studying protein polymers common in most living forms, and their interlinked sequences of catalyzed reactions; the evolutionary, where the atomic unit is the whole organism, and statistical change the rise and fall of species; and the cellular. "The cell is the physical unit of life," writes the biophysicist author of this straightforward and detailed popular account of cytology as a physicist sees it.

There is not yet the depth of unity in general cytology to match what the biochemists have found, nor the results of the geneticists. The cell is almost everywhere, but it is marvelously diverse. Dr. Hoffman does not shrink before that diversity. He describes for us the forms of cells and tissues, their motions and changes. He looks at their grouping into an organism, their division and growth. He discusses errors, and naturally enough the deadly puzzle of cancer. Four of the freshest chapters end the book: an account of fibrous polymers, of the models of death and growth as the outcome of sequences of randomly varying steps, a look at the possibilities of specific chemical forces (of London type) between biological molecules, and a chapter on death, which merges into a discussion of the polymer code of the nucleic acids.

The exposition is always clear, and often illuminating. The tablespoonful of human eggs, which would span the life of our species back to the true Adam, and the ton of germ cells, which would carry genealogy back to the first living form, are unforgettable. The discussion is nontechnical at every point, but the over-all impression is not that of the simplicity of the world, but of the bewildering detailed diversity of the cell and what it does. That no cell of the body—except perhaps those of the cornea—lies more than a few cell-diameters from a tube carrying fluid is a clear statement of a geometry so complex that it may silence an expert on screw dislocations or on high-order Feynman graphs. None of this daunts Dr. Hoffman, who tells it all in an affable and winning way.

This is a first-rate popularization of a complex subject. It is not an easy book, though it is easy page by page. The credit which the author merits for his clarity, optimism, and width of knowledge, stands in contrast to the demerits of his publishers, who have allowed this work to come out without even one single halftone, line cut, graph, or table. It is a pity that we could not be brought closer to the world of the cytologist by see-

ing some of the things he has seen, and that we cannot find summarized or graphed any of the many relationships and differences Dr. Hoffman has discussed. The value of the text for readers from the most casual to the most devoted would have grown greatly with a mere dozen or so added pages of photos and figures. The editing is weak as well, but there is a satisfactory index.

Books Received

SERVICING COLOR TV. By Robert G. Middleton. 224 pp. Gernsback Library, Inc., New York, 1957. Clothbound \$4.60; paperbound \$2.90.

THE SCIENCE OF ENGINEERING MATERIALS. Edited by J. E. Goldman. 528 pp. John Wiley & Sons, Inc., New York, 1957. \$12.00.

PHYSICS (4th Revised Edition). By Erich Hausmann and Edgar P. Slack. 722 pp. D. Van Nostrand Co., Inc., Princeton, N. J., 1957. \$8.00.

ACOUSTICS FOR THE ARCHITECT. By Harold Burris-Meyer, Lewis S. Goodfriend. 126 pp. Reinhold Publishing Corp., New York, 1957. \$10.00.

CORROSION AND WEAR HANDBOOK FOR WATER COOLED REACTORS. Edited by D. J. DePaul. Sponsored by US Atomic Energy Comm. 293 pp. TID 7006. US Govt. Printing Office, Washington, D. C., 1957. Paperbound.

THE MOLECULAR THEORY OF SOLUTIONS. By I. Prigogine. 448 pp. (North-Holland, Holland) Interscience Publishers, Inc., New York, 1957. \$13.25.

H. A. LORENTZ: Impressions of his Life and Work. Edited by G. L. de Haas-Lorentz. 172 pp. (North-Holland, Holland) Interscience Publishers, Inc., New York, 1957. \$3.00.

MICROWAVE MEASUREMENTS. By Edward L. Ginzton. 515 pp. McGraw-Hill Book Co., Inc., New York, 1957. \$12.00.

EINFÜHRUNG IN DIE MAXWELLISCHE THEORIE, ELEKTRONENTHEORIE, RELATIVITÄTSTHEORIE. Vol. 1 of Theorie der Elektrizität (16th Revised Edition). By Richard Becker. Revised by F. Sauter. 302 pp. B. G. Teubner Verlagsgesellschaft, Stuttgart, Germany, 1957. DM 29.00.

TIME SAVING TIPS FOR THE DRAFTSMAN AND THE ENGINEER. 34 pp. Frederick Post Co., Chicago, Ill., 1957. Paperbound. No charge.

THE UNITED KINGDOM CONTRIBUTION TO THE INTERNATIONAL GEOPHYSICAL YEAR 1957-58. 72 pp. The Royal Society, London, England, 1957. 10s.

PHYSICS FOR SCIENCE AND ENGINEERING. By Robert L. Weber, Marsh W. White, Kenneth V. Manning. 618 pp. McGraw-Hill Book Co., Inc., New York, 1957. \$8.00.

GUIDED WEAPONS. By Eric Burgess. 255 pp. The Macmillan Co., New York, 1957. \$5.00.

X-RAY ATTENUATION COEFFICIENTS FROM 10 KEV TO 100 MEV. By Gladys White Grodstein. 54 pp. NBS Circular 583. US Govt. Printing Office, Washington, D. C., 1957. Paperbound \$3.35.

CHEMISORPTION: Proceedings of Symp. (U. College of N. Staffordshire, Keele, Staffordshire, England, July 1956). Edited by W. E. Garner. 277 pp. (Butterworths, England) Academic Press Inc., New York, 1957. \$9.00.

MYSTERIES OF SCIENCE: A Study of the Limitations of the Scientific Method. By John Rowland. 214 pp. Philosophical Library, Inc., New York, 1957. \$6.00.

ACOUSTICS. By Joseph L. Hunter. 407 pp. Prentice-Hall Inc., Englewood Cliffs, N. J., 1957. \$8.50.

SPHEROIDAL WAVE FUNCTIONS. By Carson Flammer. 220 pp. Stanford U. Press, Stanford, Calif., 1957. \$8.50.

LINEAR ALGEBRA FOR UNDERGRADUATES. By D. C. Murdoch. 239 pp. John Wiley & Sons, Inc., New York, 1957. \$5.50.

WORLD DIRECTORY OF CRYSTALLOGRAPHERS. Compiled by William Parrish. 79 pp. Philips Laboratories, Irvington-on-Hudson, N. Y., 1957. Paperbound.

LA DIFFUSION DANS LES METAUX: Colloq. Proceedings (Eindhoven, Sept. 1956). Edited by J. D. Fast, H. G. van Bueren, J. Philibert. 124 pp. Bibliotheque Technique Philips, Eindhoven, Holland, 1957. \$5.25.

CONFERENCE ON ELECTRICAL INSULATION OF THE DIV. OF ENGINEERING & INDUSTRIAL RESEARCH: Annual Report, 1956. 63 pp. Publ. 512. Nat'l Academy of Sciences—Nat'l Research Council, Washington, D. C., 1957. Paperbound \$3.00.

THE GALACTIC NOVAE. By Cecilia Payne-Gaposchkin. 336 pp. (North-Holland, Holland) Interscience Publishers, Inc., New York, 1957. \$8.50.

THE DEVELOPMENT & MEANING OF EDDINGTON'S FUNDAMENTAL THEORY: Including a compilation from Eddington's unpublished manuscripts. By Noel B. Slater. 299 pp. Cambridge U. Press, New York, 1957. \$7.50.

MATHEMATICAL ANALYSIS: A Modern Approach to Advanced Calculus. By Tom M. Apostol. 553 pp. Addison-Wesley Publishing Co., Inc., Reading, Mass., 1957. \$8.50.

THE RELATIVISTIC GAS. By J. L. Synge. 108 pp. (North-Holland, Holland) Interscience Publishers, Inc., New York, 1957. \$4.50.

FUNDAMENTALS OF OPTICS (3rd Revised Edition). By Francis A. Jenkins and Harvey E. White. 637 pp. McGraw-Hill Book Co., Inc., New York, 1957. \$8.50.

THE A-B-C OF ELECTRONS, ATOMS, AND MOLECULES: Their Mechanical Actions and Functions and Their Simple Ratios in Mathematical Terms. By Frank X. Graser. 104 pp. Greenwich Book Publishers, Inc., New York, 1957. \$3.00.

LABORATORY EXPERIMENTS IN COLLEGE PHYSICS (2nd Edition). By Cicero H. Bernard. 328 pp. Ginn & Co., New York, 1957. Paperbound \$4.25.

SPECTROSCOPY II. Vol. 28 of Handbuch der Physik. Edited by S. Flügge. 448 pp. Springer Verlag, Berlin, Germany, 1957. DM 98.00 (subscription price DM 78.40).

BASIC MATHEMATICS FOR RADIO AND ELECTRONICS. By F. M. Colebrook and J. W. Head. 359 pp. (Iliffe, England) Philosophical Library, Inc., New York, 1957. \$6.00.

RADIATION SHIELDING. By B. T. Price and C. C. Horton. 350 pp. Pergamon Press, London and New York, 1957. \$10.00.

THE PRESIDENT'S COMMITTEE ON EDUCATION BEYOND THE HIGH SCHOOL (2nd Report to the President). 108 pp. US Govt. Printing Office, Washington, D. C., 1957. Paperbound \$5.5.

NEUTRON AND GAMMA IRRADIATION FACILITIES. Compiled by John H. Martens and F. G. Minuth. 79 pp. (AEC) US Gov't. Printing Office, Washington, D. C., 1957. Paperbound \$6.0.

PROCEEDINGS OF THE INTERNAT'L CONGRESS ON CATALYSIS (Philadelphia, Pa., Sept. 1956). Vol. 9 of Advances in Catalysis and Related Subjects. Edited by Adalbert Farkas. 847 pp. Academic Press Inc., New York, 1957. \$16.00.

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By KAISER S. KUNZ, Case Institute of Technology. 381 pages, \$8.00

For both students at the senior-graduate level, and computer engineers and designers, this book develops a fundamental understanding of the use of finite difference methods in obtaining numerical solutions to problems in applied mathematics. No other text offers as thorough a treatment of the basic theory, along with an adequate treatment of partial differential and integral equations. Starting with a study of numerical solutions of algebraic equations, methods of interpolation, and numerical integration, the book carries through to an application of the finite difference techniques to ordinary and partial differential equations, and the numerical solution of integral equations.

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