

roduce themselves to recent advances in endocrine physiology and biochemistry, but the breadth and depth of treatment have made them almost impenetrable to the uninitiated. In this book McKerns addresses "beginning students" and others who "wish to learn modern concepts of cellular biochemistry." "The goal has been to present the necessary basic concepts and to develop them in terms of current ideas of regulation and function."

Although some excellent summaries of the action of various hormonal steroids are included, comprehensive review is often sacrificed for the sake of introductory material. Even the presentation of basic material suffers from the inevitable constraints of a small book devoted to a fairly extensive subject. An introductory section on steroid chemistry does not include any useful discussion of the details of steroid nomenclature. A chapter on the "genetic control of metabolism" works its painstaking way through the primary and secondary structure of nucleic acids, whereas other chapters in which there is discussion of the effects of steroids on enzyme activity contain virtually no discussion of the secondary and tertiary structure of proteins. Discussions of lipid and carbohydrate metabolism, although coherent, are not adequately cross-referenced in the text itself.

Beginners will find this book frustrating because of its peculiar organization and because of a number of omissions and ambiguities. Examples include the statement that the steroid hydroxylase cytochrome P-450 couples to hydroxylases; omission from the discussion of glucocorticoid action of the activation of hepatic glycogen synthetase, pyrophosphate-glucose-phosphotransferase, and glucose-6-phosphatase; and the curious statement that "cortisone, unlike cortisol, has little or no suppressive effect on ACTH secretion."

Despite the fact that the book was written at least two years ago, it is generally quite up to date. Not to provide extensive discussion of steroid-protein binding or of the role of protein synthesis in hormonal stimulation of steroid biosynthesis is certainly the author's prerogative. Although this book is not inclusive enough to be a good introduction either to cellular biochemistry or to the general mechanisms of hormone action, it does an excellent job in describing recent advances in intermediary metabolism. The

chapter dealing with gluconeogenesis is a particularly lucid and critical exposition of the roles of uni- and bidirectional enzymes. There is an extensive discussion of lipid metabolism in another chapter which, although not correlated very well with mechanisms of hormone action, is worthwhile for its review of recent literature. A brief summary on the uncertainties of corpus luteum function and the still unknown mechanism of luteolysis is noteworthy, although it is somewhat impaired by a lack of recognition that the effect of prolactin in maintaining corpus luteum function may be restricted to only a few mammalian species.

In conclusion, this book does not appear to be very successfully directed toward McKerns's declared audience. It should, however, be quite useful for endocrinologists wishing to review intermediary metabolism related to hormone action and for those who are interested in teaching these concepts.

EDWIN D. BRANSOME, JR.  
*Unit of Experimental Medicine,  
Massachusetts Institute of  
Technology, Cambridge*

## Books Received

**Advances in Chemical Physics.** Vol. 16. I. Prigogine and S. A. Rice, Eds. Interscience (Wiley), New York, 1969. x + 422 pp., illus. \$21.

**Advances in Mathematical Systems Theory.** Preston C. Hammer, Ed. Pennsylvania State University Press, University Park, 1969. viii + 178 pp., illus. \$9.50.

**Advances in Plasma Physics.** Vol. 3. Albert Simon and William B. Thompson, Eds. Interscience (Wiley), New York, 1969. viii + 264 pp., illus. \$14.95.

**Alkaline Storage Batteries.** S. Uno Falk and Alvin J. Salkind. Wiley, New York, 1969. xvi + 656 pp., illus. \$32.50.

**Analytical Chemistry of the Polyurethanes.** D. J. David and H. B. Staley. Wiley-Interscience, New York, 1969. xii + 628 pp., illus. \$28.50. High Polymers, vol. 16, part 3.

**Applications of Group Theory in Quantum Mechanics.** M. I. Petrashen and E. D. Trifonov. Translated from the Russian edition (Moscow) by S. Chomet. Edited and revised by J. L. Martin. M.I.T. Press, Cambridge, Mass., 1969. vi + 318 pp. \$12.

**The Behavioral and Social Sciences: Outlook and Needs.** A Report by the Behavioral and Social Sciences Survey Committee under the auspices of the Committee on Science and Public Policy, National Academy of Sciences, and the Committee on Problems and Policy, Social Science Research Council. Prentice-Hall, Englewood Cliffs, N.J., 1969. xvi + 320 pp., illus. \$7.95.

**The Behavioral Repertoire of the Stumptail Macaque.** A Descriptive and

Comparative Study. Mireille Bertrand. Karger, Basel, 1969 (U.S. distributor, Phiebig, White Plains, N.Y.). xii + 276 pp., illus. Paper, \$14.65. Bibliotheca Primatologica, No. 11.

**Biographical Memoirs of Fellows of the Royal Society.** Vol. 15. The Royal Society, London, 1969. vi + 266 pp. + plates. \$6.50.

**Botany Simplified.** Joan E. Rahn. Barnes and Noble, New York, 1969. vi + 122 pp., illus. Paper, \$2.25. Keynotes 723.

**Choice and the Destiny of Nations.** Elizabeth E. Hoyt. Philosophical Library, New York, 1969. x + 154 pp. \$5.

**Climates of Northern and Eastern Asia.** H. Arakawa, Ed. Elsevier, New York, 1969. xii + 248 pp., illus. \$33.50. World Survey of Climatology, vol. 8.

**Comparative and Evolutionary Aspects of the Vertebrate Central Nervous System.** A conference, New York, December 1968. J. M. Petras and Charles R. Noback, Eds. New York Academy of Sciences, New York, 1969. Illus. Paper, \$29.50. *Annals of the New York Academy of Sciences*, vol. 167, art. 1, pp. 1-513.

**A Comprehensive Guide to the English-Language Literature on Cannabis (Marihuana).** J. R. Gamage and E. L. Zerk. STASH Press, Beloit, Wis., 1969. xii + 272 pp. Paper, \$5.95.

**Corticonuclear and Corticovestibular Projections of the Cerebellum.** An Experimental Investigation of the Anterior Lobe, the Simple Lobule and the Caudal Vermis in the Rabbit. J. van Rossum. Van Gorcum, Assen, Netherlands, 1969 (U.S. distributor, Davis, Philadelphia). viii + 172 pp., illus. \$16. *Studies in Neuro-Anatomy*, vol. 7.

**Crack Problems in the Classical Theory of Elasticity.** I. N. Sneddon and M. Lowengrub. Wiley, New York, 1969. x + 230 pp., illus. \$14.95. The SIAM Series in Applied Mathematics.

**Culture and Commitment.** A Study of the Generation Gap. Margaret Mead. Published for the American Museum of Natural History by Natural History Press, Garden City, N.Y., 1970. xxx + 114 pp. \$5.

**Diagnostic Cytology of the Uterine Cervix.** Stanley F. Patten, Jr. Williams and Wilkins, Baltimore, 1969. x + 210 pp., illus. \$11.50. *Monographs in Clinical Cytology*, vol. 3.

**Earth Resources.** Brian J. Skinner. Prentice-Hall, Englewood Cliffs, N.J., 1969. x + 150 pp., illus. Cloth, \$5.95; paper, \$2.50. Foundations of Earth Science Series.

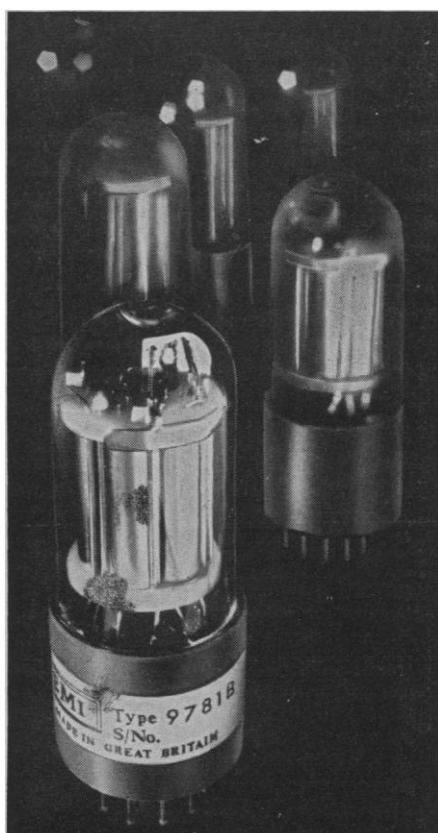
**Encyclopedia of Industrial Chemical Analysis.** Vol. 8, Bromine to Carrier Gas and Vacuum Fusion Methods. Foster Dee Snell and Leslie S. Etre, Eds. Interscience (Wiley), New York, 1969. xvi + 752 pp., illus. \$45; by subscription, \$35.

**The Engineer and the City.** A symposium, Washington, D.C., October 1969. National Academy of Engineering, Washington, D.C., 1969. 116 pp. Paper, \$7.

**Equilibrium.** A Chemistry of Solutions. Thomas R. Blackburn. Holt, Rinehart and Winston, New York, 1969. xii + 228 pp., illus. Cloth, \$6.50; paper, \$3.50.

**Évolution des Vertébrés.** De leur origine à l'homme. Georges Vanderbroeck. Mas-

(Continued on page 412)



## What's the difference?

Some typical squirrel cage photomultipliers. All similar in shape. But the one in the foreground, the new EMI Type 9781B, is different. Take a look at these typical performance figures:

- Photocathode sensitivity...55 $\mu$ A/L
- Overall gain at 1000V... $2 \times 10^7$
- Overall voltage at gain of  $10^6$ ...650V
- Dark current at gain of  $10^6$ ...1.2nA

The 9781B, a 9 stage tube with UV transmitting glass envelope, is designed for use with low level UV and visible radiation in spectrometer and similar applications. The B11A (B11-88) base means the 9781B will replace other tubes of this design to improve system performance.

For details of the complete EMI P.M. tube range contact:

**GENCOM DIVISION**  
varian/EMI

80 EXPRESS STREET, PLAINVIEW, N.Y. 11803  
TELEPHONE: (516) 433-5900

Circle No. 78 on Readers' Service Card

## BOOKS RECEIVED

(Continued from page 364)

son, Paris, 1969. xx + 584 pp., illus. 120 F.

**France. A Geographical Survey.** Philippe Pinchemel. Translated and revised from the second French edition (Paris, 1964) by Christine Trollope and Arthur J. Hunt. Praeger, New York, 1969. x + 454 pp., illus. \$16.50.

**Genetic Load.** Its Biological and Conceptual Aspects. Bruce Wallace. Prentice-Hall, Englewood Cliffs, N.J., 1970. xii + 116 pp., illus. \$5.95. Concepts of Modern Biology Series.

**A History of Electrical Power Engineering.** Percy Dunsheath. M.I.T. Press, Cambridge, Mass., 1969. 368 pp. + plates. Paper, \$2.95. Reprint of the 1962 edition.

**Hospitals and Patients.** William R. Rosengren and Mark Lefton. Atherton, New York, 1969. xii + 228 pp. \$8.95.

**Human Ecology in the Tropics.** A symposium. J. P. Garlick and R. W. J. Keay, Eds. Pergamon, New York, 1970. viii + 112 pp., illus. \$5.50. Symposia of the Society for the Study of Human Biology, vol. 9.

**Infinite Abelian Groups.** Vol. 1. László Fuchs. Academic Press, New York, 1970. xii + 292 pp. \$15. Pure and Applied Mathematics, vol. 36.

**International Review of General and Experimental Zoology.** Vol. 4. William J. L. Felts and Richard J. Harrison, Eds. Academic Press, New York, 1969. xii + 396 pp., illus. \$22.50.

**The Interneuron.** Proceedings of a conference, Los Angeles, September 1967. Mary A. B. Brazier, Ed. University of California Press, Berkeley, 1969. xviii + 554 pp., illus. \$20. UCLA Forum in Medical Sciences, No. 11.

**The Interrelationship of Chemotherapeutic Agents and Radiation Therapy in the Treatment of Cancer.** Proceedings of a symposium, San Francisco, October 1968. Jerome M. Vaeth, Ed. Karger, Basel, 1969 (U.S. distributor, Phiebig, White Plains, N.Y.). viii + 204 pp., illus. \$16.30. Frontiers of Radiation Therapy and Oncology, vol. 4.

**Kirk-Othmer Encyclopedia of Chemical Technology.** Vol. 20, Tetracyclines to Unsaturated Polyesters. Herman F. Mark, John J. McKetta, Jr., Donald F. Othmer, and Anthony Standen, Eds. Interscience (Wiley), New York ed. 2, 1969. xvi + 848 pp., illus. \$50; by subscription, \$40.

**Laboratory Anatomy of the Domestic Chicken.** Michael C. Robinson. Brown, Dubuque, Iowa, 1970. viii + 120 pp., illus. Spiral bound, \$2.25.

**Limnology.** An Introduction to the Fresh Water Environment. William H. Amos. LaMotte Chemical Products, Chestertown, Md., 1969. 40 pp., illus. Paper, 50¢.

**Malnutrition Is a Problem of Ecology.** A conference, Bellagio, Como, Italy, October 1968. Paul György and O. L. Kline, Eds. Karger, Basel, 1970 (U.S. distributor, Phiebig, White Plains, N.Y.). xii + 244 pp., illus. Paper, \$6.70. Bibliotheca "Nutritio et Dieta," No. 14.

**Northern Plainsmen.** Adaptive Strategy and Agrarian Life. John W. Bennett.

Aldine, Chicago, 1969. xviii + 354 pp., illus. \$9.75.

**Nutrition and Aging.** A Monograph for Practitioners. Sandra C. Howell and Martin B. Loeb. Gerontological Society, St. Louis, 1969 ii + 126 pp. Paper, \$3. *The Gerontologist*, vol. 9, No. 3.

**Physics Simplified.** Andres Manning. Barnes and Noble, New York, 1969. vi + 106 pp., illus. Paper, \$2.25. Keynotes 720.

**Plant Physiology.** Robert M. Devlin. Van Nostrand Reinhold, New York, ed. 2, 1969. xii + 452 pp., illus. \$11.95.

**The Pomo Indians of California and Their Neighbors.** Vinson Brown and Douglas Andrews. Albert B. Elsasser, Ed. Naturegraph, Healdsburg, Calif., 1969. 64 pp., illus. + map. Cloth, \$450; paper, \$2.50; map alone, \$1.

**Potassium-Argon Dating.** Principles, Techniques and Applications to Geochronology. G. Brent Dalrymple and Marvin A. Lanphere. Freeman, San Francisco, 1969. xiv + 258 pp., illus. \$7.50.

**Principles of Crystal Structure Determination.** Gene B. Carpenter. Benjamin, New York, 1969. xii + 244 pp., illus. \$14.50.

**Principles of Optics.** Electromagnetic Theory of Propagation, Interference and Diffraction of Light. Max Born and Emil Wolf. With contributions by A. B. Bhatia, P. C. Clemmow, D. Gabor, A. R. Stokes, A. M. Taylor, P. A. Wayman, and W. L. Wilcock. Pergamon, New York, ed. 4, 1970. xxviii + 808 pp., illus. \$18.

**Principles of Perceptual Learning and Development.** Eleanor J. Gibson. Appleton-Century-Crofts, New York, 1969. x + 538 pp., illus. \$8.50. Century Psychology Series.

**Probability and Random Processes for Engineers and Scientists.** A. Bruce Clarke and Ralph L. Disney. Wiley, New York, 1970. xviii + 350 pp., illus. \$9.95.

**Problems in Systematics of Parasites.** Proceedings of an American Association for the Advancement of Science symposium, December 1968. Gerald D. Schmidt, Ed. University Park Press, Baltimore, Md., 1969. vi + 136 pp., illus. \$7.95.

**Progress in Boron Chemistry.** Vol. 3. R. J. Brotherton and H. Steinberg, Eds. Pergamon, New York, 1970. viii + 392 pp., illus. \$19.

**Progress in Experimental Tumor Research.** Vol. 12. F. Homburger, Ed. Karger, Basel, Switzerland, 1969. viii + 176 pp., illus. \$12.

**Psychotomimetic Drugs.** Proceedings of a workshop, Irvine, Calif., January 1969. Daniel H. Efron, Ed. Raven, New York, 1970. 368 pp., illus. \$15.95.

**The Quantum Physicists.** And an Introduction to Their Physics. William H. Cropper. Oxford University Press, New York, 1970. xii + 260 pp., illus. Paper, \$4.

**Remote Sensing.** With Special Reference to Agriculture and Forestry. Committee on Remote Sensing for Agricultural Purposes, National Research Council. National Academy of Sciences, Washington, D.C., 1970. xvi + 424 pp. + plates. \$12.95. NAS Publication No. 1723.

**Rheumatoid Factors and Their Biological Significance.** A conference, New York, May 1969. Harry Bartfeld and Wallace V. Epstein, Eds. New York Academy



of Sciences, New York, 1969. Illus. Paper, \$14.50. *Annals of the New York Academy of Sciences*, vol. 168, art. 1, pp. 1-207.

**The Schizophrenic Reactions.** A Critique of the Concept, Hospital Treatment, and Current Research. Proceedings of the Menninger Foundation Conference on the Schizophrenic Syndrome, Topeka, Kansas, April 1969. Robert Cancro, Ed. Brunner/Mazel, New York, 1970. x + 294 pp. \$10.

**The Shadow of the Telescope.** A Biography of John Herschel. Günther Buttmann. Translated from the German edition (Stuttgart, 1965 by B. E. J. Pagel. David S. Evans, Ed. Scribner, New York, 1970. xvi + 224 pp., illus. \$7.95.

**Since Silent Spring.** Frank Graham, Jr. Houghton Mifflin, Boston, 1970. xvi + 334 pp. \$6.95.

**Social Work Practice, 1969.** Selected Papers from the 96th Annual Forum, National Conference on Social Welfare, New York, May 1969. Published for the National Conference on Social Welfare by Columbia University Press, New York, 1969. xx + 220 pp. \$7.50.

**Spanish Phonology.** James W. Harris. M.I.T. Press, Cambridge, Mass., 1969. xvi + 224 pp. \$10. Research Monograph No. 54.

**Steroid Biochemistry.** Erich Heftmann. Academic Press, New York, 1970. xiv + 226 pp., illus. \$9.50.

**Studies in the Methodology and Foundations of Science.** Selected Papers from 1951 to 1969. Patrick Suppes. Reidel, Dordrecht, Holland; Humanities Press, New York, 1969. xii + 476 pp., illus. \$21.

**A Systematic Study of Perideridia (Umbelliferae-Apioideae).** Tsan-lang Chuang and Lincoln Constance. University of California Press, Berkeley, 1969. vi + 76 pp., illus. Paper, \$2.50. University of California Publications in Botany, vol. 55.

**Techniques in Protein Biosynthesis.** P. N. Campbell and J. R. Sargent. Vol. 2. Academic Press, New York, 1969. xiv + 274 pp., illus. \$12.

**Third European Conference on Controlled Fusion and Plasma Physics and the Symposium on Beam-Plasma Interactions.** Utrecht, Netherlands, June 1969. Wolters-Noordhoff, Groningen, Netherlands, 1969. x + 136 pp., illus. Paper, \$5.25.

**Transistor Philosophy.** John Buchanan. Dorrance, Philadelphia, 1969. xxii + 150 pp., illus. \$3.95.

**Understanding Elementary Calculus.** Principles, Problems, and Solutions. Charles Godino. Benjamin, New York, 1969. xii + 340 pp., illus. Paper, \$4.95.

**Virology Monographs.** Vol. 7. Polyoma Virus. Bernice E. Eddy. Rubella Virus. E. Norrby. Springer-Verlag, New York, 1969. iv + 174 pp., illus. \$17.60.

**A Visual Approach to Histology.** Beth L. Wismar and G. Adolph Ackerman. Davis, Philadelphia, 1970. x + 74 pp. + 240 35-mm colored slides. Loose-leaf, \$140.

**Where Animals Live.** R. A. Marchant. Illustrated by Jo McManus. Macmillan, New York, 1970. vi + 170 pp. \$4.95.

**Who Shall Live?** Man's Control over Birth and Death. A Report Prepared for the American Friends Service Committee. Hill and Wang, New York, 1970. xvi + 144 pp. Cloth, \$3.95; paper, \$1.75.

# Follow life's little ups and downs.

Get all you can out of life. Record those peaks and valleys with the Joyce, Loeb Chromoscan.

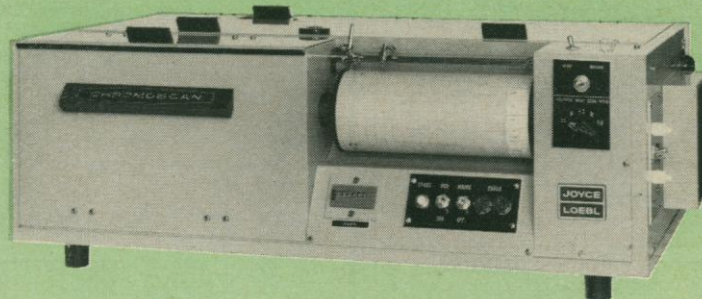
Chromoscan is a universal recording and integrating densitometer. For in-depth life studies and a good deal more.

Work in all matter of media. Like paper, cellulose acetate, starch, agar. Do thin layer work. Take on continuous flow studies in either visible or UV ranges. Handle all of the above and automatic colorimetry or reaction rate measurements, too.

Record in reflection, transmission and fluorescence modes. And make routine testing indeed routine.

If life study isn't your study, read on. Industry is making good use of Chromoscan on-line and in-lab for quality control. In printing, photographic work, and textile production.

Accuracy, versatility, and details are discussed in detail in our literature. Write for your copy. Dept. K-3, Tech/Ops Instruments, Northwest Industrial Park, Burlington, Mass. 01803. Tel. (617) 272-2000. In Europe contact our subsidiary Joyce, Loeb & Co. Ltd., Gateshead, England NE11 0UJ.



tech/ops

TECH/OPS INSTRUMENTS

JOYCE  
LOEB