

or confusing. The authors of this remarkable volume have undertaken the Herculean task of reviewing this literature and cleaning up the mess. They have organized the material well, so that papers from diverse sources and published at different times are brought together to bear upon some specific point. Their choice of cited papers has been excellent, no relevant papers having been omitted. Most of all, they add their own wise insights constantly, both as critical comments and as summary statements. The result is a highly readable book, rich with information and provoking many associations in the reader. One can hardly read more than a few pages without thinking of at least several possible new experiments.

The first major section of the book deals with neurotransmitter amines, such as acetylcholine, serotonin, and the catecholamines, with great emphasis on their relation to behavior. The second deals with the affective disorders, considering genetic influences, the role of brain amines, disturbances of water, mineral, and carbohydrate metabolism or altered pituitary-adrenocortical function, in relation to the various clinical manifestations. The third and major section of the book is concerned with the biochemistry of schizophrenia. Evidence for the many tantalizing theories of its pathogenesis is presented and critically evaluated. Few persons active in this field have been bold or energetic enough to apply themselves to this task, and this review of the biochemistry of schizophrenia is one of the best yet. Finally, the fourth section deals with experimental psychoses produced by various hallucinogenic drugs and their relation to schizophrenia.

More than a third of the volume is taken up by references and index, which are by no means "filler." The extensive referencing and indexing make the book extremely valuable as a guide to the literature. Should one wish to locate some recent references on electrolyte changes in mania, or the metabolism of mescaline, the organization of the book and the complete referencing make this job easy. This volume is likely to become a handbook in the true sense of the word: a book frequently pulled from the shelf to elucidate some discussion or to refresh one's memory about which drug affects which amine in what way under such-and-such conditions. By some good luck, references are included up to the actual year of publication of the book.

Although this new wave of biological research has not yet found a solution to some of the vexing problems of mental disorders, the accomplishments to date are promising. This book fills a most useful purpose in setting into proper perspective what has been accomplished so far and, more important, what must be done in the future. It is highly recommended to each of the many disciplines involved in the search for a rational pathogenesis and treatment of mental disorders.

LEO E. HOLLISTER  
*Veterans Administration Hospital,  
Palo Alto, California*

### Books Received

**Advances in Environmental Science and Technology.** Vol. 2. James N. Pitts, Jr., and Robert L. Metcalf, Eds. Wiley-Interscience, New York, 1971. x, 354 pp., illus. \$17.95.

**Basic Electronics for Scientists.** James J. Brophy. McGraw-Hill, New York, ed. 2, 1972. xvi, 512 pp., illus. \$12.95.

**Beginner's Guide to the Fungi.** C. L. Duddington. Drake, New York, 1972. 176 pp. + plates. \$6.95.

**Determination of Organic Structures by Physical Methods.** Vol. 3. F. C. Nachod and J. J. Zuckerman, Eds. Academic Press, New York, 1971. xvi, 470 pp., illus. \$22.50.

**The Erotic Ocean.** A Handbook for Beachcombers. Jack Rudloe. World, New York, 1972. xii, 448 pp. + plates. \$15.

**Linear Programming and Related Techniques.** C. van de Panne. North-Holland, Amsterdam; Elsevier, New York, 1971. x, 364 pp., illus. Cloth, \$15; paper, \$10.50.

**La Maladie Nodulaire Cutanée des Bovidés (Lumpy Skin Disease).** P. Bourdin. L'Expansion Scientifique Française, Paris, 1970. 100 pp., illus. Paper, 26.50 F. Maladies Animales à Virus.

**Mammals of the Sea.** Biology and Medicine. Sam H. Ridgway, Ed. Thomas, Springfield, Ill., 1972. xiv, 812 pp., illus. \$45.

**Mass Spectrometry.** Techniques and Applications. George W. A. Milne, Ed. Wiley-Interscience, New York, 1971. xii, 522 pp., illus. \$24.95.

**The New Totalitarians.** Roland Huntford. Stein and Day, New York, 1972. 354 pp. \$10.

**Nutrition et Hématopoïèse.** Alexandre Aschkenasy. Centre National de la Recherche Scientifique, Paris, 1971. 558 pp., illus. 129 F. Monographies des Annales de la Nutrition et de l'Alimentation.

**Olduvai Gorge.** Vol. 3. Excavations in Beds 1 and 2, 1960-1963. M. D. Leakey. Cambridge University Press, New York, 1971. xxii, 300 pp. + plates + maps. \$32.50.

**Project Aqua.** A Source Book of Inland Waters Proposed for Conservation. H. Luther and J. Rzóška, Eds. Published for International Biological Programme by

Blackwell, Oxford, England, 1971 (U.S. distributor, Davis, Philadelphia). xiv, 240 pp. + plates. Paper, \$7. IBP Handbook No. 21. IUCN Occasional Paper No. 2.

**Regional Variation in Indian Ocean Coral Reefs.** A symposium, London, May 1970. D. R. Stoddart and Maurice Yonge, Eds. Published for the Zoological Society of London by Academic Press, New York, 1971. xxxvi, 584 pp., illus. + tables. \$28. Symposia of the Zoological Society of London, No. 28.

**Respiratory Physiology.** N. Balfour Slonim and Lyle H. Hamilton. Mosby, St. Louis, Mo., ed. 2, 1971. viii, 230 pp., illus. \$10.75.

**Ring Theory.** Ernst-August Behrens. Translated from the German edition (Mannheim, 1972) by Clive Reis. Academic Press, New York, 1972. x, 322 pp. \$16.50. Pure and Applied Mathematics, vol. 44.

**The Role of Genetics in Mental Retardation.** A symposium, Miami, May 1970. Robert M. Allen, Arnold D. Cortazzo, and Richard P. Toister, Eds. University of Miami Press, Coral Gables, Fla., 1972. 116 pp., illus. \$6.95.

**The Roots of Civilization.** The Cognitive Beginnings of Man's First Art, Symbol and Notation. Alexander Marshack. McGraw-Hill, New York, 1972. 414 pp., illus. \$17.50.

**The Selected Correspondence of Michael Faraday.** Edited on behalf of the Royal Institution of Great Britain by L. Pearce Williams with the assistance of Rosemary Fitzgerald and Oliver Stalleybrass. Cambridge University Press, New York, 1972. Vol. 1, 1812-1848. xii + pp. 1-538, illus. Vol. 2, 1849-1866. viii + pp. 539-1080, illus. The set, \$55.

**Selected Papers in Biochemistry.** Vol. 7, Protein Synthesis; Yoshito Kaziro, Ed.; xii, 242 pp., illus., \$12.50. Vol. 8, Allosteric Regulation; Masanobu Tokushige, Ed.; xiv, 270 pp., illus., \$12.50. University Park Press, Baltimore, 1972.

**La Surface Cellulaire et Son Microenvironnement.** Role dans les Agrégations Cellulaires. A. Policard. Masson, Paris, 1972. viii, 88 pp., illus. Paper, 33 F.

**Survival of Food Crops and Livestock in the Event of Nuclear War.** A symposium, Upton, N.Y., Sept. 1970. David W. Benson and Arnold H. Sparrow, Eds. U.S. Atomic Energy Commission Office of Information Services, Oak Ridge, Tenn., 1971 (available from National Technical Information Service, Springfield, Va.). xii, 746 pp., illus. Paper, \$9. AEC Symposium Series, 24.

**Symposium on Infinite Dimensional Topology.** Baton Rouge, La., Mar. 1967. R. D. Anderson, Ed. Princeton University Press, Princeton, N.J.; University of Tokyo Press, Tokyo, 1972. viii, 300 pp., illus. Paper, \$9. Annals of Mathematics Studies, No. 69.

**Teaching with Behavioral Objectives.** Book 1, Constructing Behavioral Objectives. J. Marvin Cook and Henry H. Walbesser. Maryland Book Exchange, College Park, 1972. iv, 60 pp., illus. Paper, \$3.

**A Textbook on Algae.** H. D. Kumar and H. N. Singh. East-West Press, New Delhi, 1971. viii, 200 pp., illus.