

Mesoamerica (including the reviewer) and some Southwestern archeologists will certainly challenge this conclusion, at least with respect to the intensity of Mesoamerican influence at that time.

Haury's book—including the several appendixes—is a veritable encyclopedia of archeological data. Its great value lies not only in its data and in the major conclusions it draws but equally in the careful and mature consideration of every question arising from the discoveries made. Haury once again has demonstrated his superb mastery of the archeologist's skills, techniques, and methods. The book is thoroughly illustrated with maps, drawings, photographs, and charts, carefully chosen to clarify the descriptions and discussions. Best of all, there emerges from the archeological record presented a clear view—no matter what the outside influences were—of the evolution in situ, in a somewhat grim environment, of the culture of one people over a span of some 15 or more centuries. Historians as well as archeologists will find the book a rich source of data, and the data are so well presented that the "new archeologists" will be able to live on them for many years.

The Hohokam is a fitting testimony to Emil Haury's prominence in his field. It is a rich contribution to archeological knowledge and a scholarly demonstration that the "historico-cultural" approach is still viable and productive.

J. CHARLES KELLEY

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Brain-Behavior Relationships

The Hippocampus. ROBERT L. ISAACSON and KARL H. PRIBRAM, Eds. Plenum, New York, 1975. Two volumes. Vol. 1, *Structure and Development*. xviii, 418 pp., illus. \$24.50. Vol. 2, *Neurophysiology and Behavior*. xviii, 446 pp., illus. \$24.50.

The need for a comprehensive review of hippocampal anatomy and function has been mounting for more than a decade, and the appearance of the present two-volume work on this formidable subject is therefore an event of considerable importance in neurology.

The book is composed of 29 reviews and an editorial introduction and summary written by authors noted for their contributions to hippocampal morphology or physiology. The first volume is devoted to cellular organization and development, neurochemical aspects, and endocrine involvements of the hip-

pocampus. The first of these topics is dealt with in seven chapters, five of which are morphological and cover cytoarchitecture and extrinsic and intrinsic fiber connections of the hippocampus (R. B. Chronister and L. E. White, Jr.; E. W. Powell and G. Hines), prenatal cytogenesis and phylogeny of the hippocampus (J. B. Angevine, Jr.), postnatal cytogenesis (J. Altman and S. Bayer), and the rearrangements of synaptic territories that follow experimental interventions on various afferent connections (G. Lynch and C. W. Cotman). Two further chapters deal with the neurophysiological aspects of the same general subject: P. Andersen's with the observations that have led him and his colleagues to a concept of a lamellar form of hippocampal segmentation, and P. D. MacLean's with the exteroceptive and interoceptive inputs to the limbic cortices adjoining the hippocampus. Neurochemical aspects of hippocampal afferentation are reviewed comprehensively by D. W. Straughan, and R. Y. Moore and M. J. Kuhar deal especially with monoamine and acetylcholine afferents, respectively. On the endocrine side, B. S. McEwen *et al.* review the evidence regarding glucocorticoid receptors in the hippocampus, B. Bohus and C. Van Hartesveldt the modulating influence of the hippocampus upon the pituitary-adrenal axis, and B. K. McGowan-Sass and P. S. Timiras the reciprocal involvement of the hippocampus in the cyclical release of ovarian and adrenocortical hormones. Somewhat out of context in this volume is its last chapter, in which S. Nakajima deals with memory impairments elicited by puromycin and actinomycin D and by experimentally induced abnormal neuronal-discharge patterns in the hippocampus.

The physiological and behavioral chapters composing volume 2 deal more explicitly with the general functional significance of the hippocampus. O. S. Vinogradova concludes an extensive review of single-unit recordings with the suggestion that, within the grouping of limbic structures, the hippocampus acts as "the active filter of information, participating in the process of suppression of reactions when the environment is stable." P. J. Livesey concludes that the hippocampus facilitates the attentional processes essential in determining clue relevance; R. J. Douglas attributes to the hippocampus a function in inhibiting emotional reactivity; and D. P. Kimble suggests that it has a role in enabling the behavior of animals to be flexible rather than rigidly determined by reinforcement. The hippocampal slow-wave or

theta rhythm, discussed in six chapters dealing with the electrical activity of the hippocampus, is variously linked to attentive attitudes (T. L. Bennett) or to particular forms of active voluntary behavior (C. H. Vanderwolf *et al.*; A. H. Black), but it is also reported to have different behavioral corollaries in different animal species (J. Winson; D. P. Crowne and D. D. Radcliffe). J. B. Ranck, Jr., correlates the theta rhythm with activation of a small number (5 percent of the total) of neurons widely distributed in the hippocampus. On the subject of the role of the hippocampus in memory processes, E. A. Serafetinides *et al.* link ictal impairments of memory and orientation to electroencephalographic abnormalities in the temporal lobe, especially of the speech-dominant hemisphere, and N. Butters and L. Cermak find the hippocampus of that side involved in retention of verbal materials, that of the opposite side in nonverbal memories. In a scholarly final chapter L. Weiskrantz and E. K. Warrington emphasize in particular the growing evidence that the memory impairments following temporal-lobe lesions cannot be attributed simply to a failure of "consolidation" or long-term storage. Each volume of this generally well-written book has a useful subject index, but many readers will find the absence of an author index inconvenient in a publication of this size and scope.

As a synopsis of knowledge concerning its complex subject in the mid-1970's this book is a unique contribution to the neurological literature. With few exceptions, its individual chapters are well worth reading and provide the fair coverage needed to make publications of such scope optimally useful to both beginning students and established investigators.

W. J. H. NAUTA

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Books Received

Admissible Sets and Structures. An Approach to Definability Theory. Jon Barwise. Springer-Verlag, New York, 1975. xiv, 394 pp., illus. \$29.60. **Perspectives in Mathematical Logic.**

Analytical Aspects of Mercury and Other Heavy Metals in the Environment. R. W. Frei and O. Hutzinger, Eds. Gordon and Breach, New York, 1975. viii, 196 pp., illus. \$19.50. **Current Topics in Environmental and Toxicological Chemistry, vol. 1.** Reprinted from *International Journal of Environmental Ana-*

(Continued on page 1278)

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REGULATION OF DEPRESSED METABOLISM AND THERMOGENESIS

edited by L. Jansky, Charles Univ., Prague, Czechoslovakia, and X. J. Musacchia, Univ. of Missouri, Columbia. Foreword by Charles G. Wilber. (30 Contributors) In its coverage of the biochemistry, physiology and adaptive functions of thermoregulation, this book combines reviews of intercellular events, electrophysiological events, and features which establish heat economy in the defense against cold. Interrelationships between two forms of depressed metabolism—the natural phenomenon of hibernation and the laboratory experimental phenomenon of hypothermia—are given considerable attention. '76, 304 pp., 111 il., 7 tables, \$23.75

ENVIRONMENTAL PROBLEMS IN MEDICINE

edited by William D. McKee, Palo Alto Medical Clinic, Palo Alto, California. (36 Contributors) Written to promote an understanding of increasing environmental hazards and their role in the development of disease, this book covers population problems; changes in living patterns in modern society; health effects related to food, water and air; chemical carcinogens; agricultural chemicals and pesticides; and environmental metals. Special emphasis is placed on the major diseases causing death in our society particularly those related to arteriosclerosis. '75, 880 pp. (6 3/4 x 9 3/4), 90 il., 152 tables, \$36.50

MOLECULAR AND ENVIRONMENTAL ASPECTS OF MUTAGENESIS

edited by Louise Prakash, Fred Sherman, Morton W. Miller, Christopher W. Lawrence and Harry W. Taber, all of the Univ. of Rochester, Rochester, New York. (40 Contributors) Basic interactions of environmental mutagenesis with DNA are considered in this book. Presentations and discussions progress in organismic complexity from mutagenesis of prokaryotic and eukaryotic cells, to mutagenesis of multicellular organisms, and finally to considerations of mutagenic phenomena in mammalian organisms. These discussions reflect a variety of synergistic and catalytic insights. '75, 295 pp., 40 il., 66 tables, \$24.50

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BOOKS RECEIVED

(Continued from page 1236)

lytical Chemistry and Toxicological and Environmental Chemistry Reviews.

Annual Review of Earth and Planetary Sciences. Vol. 4. Fred A. Donath, Francis G. Stehli, and George W. Wetherill, Eds. Annual Reviews, Palo Alto, Calif., 1976. x, 484 pp., illus. \$15.

Assembly Language Programming and the IBM 360 and 370 Computers. Walter G. Rudd. Prentice-Hall, Englewood Cliffs, N.J., 1976. xx, 554 pp., illus. \$16.95.

Biological Membranes. Their Structure and Function. Roger Harrison and George G. Lunt. Halsted (Wiley), New York, 1976. viii, 254 pp., illus. Paper, \$9.95. Tertiary Level Biology.

The Bipersonal Field. Robert Langs. Aronson, New York, 1976. x, 468 pp. \$20. Classical Psychoanalysis and Its Applications.

The Case of Leonid Plyushch. Tatyana Khodorovich, Ed. Translated from the Russian edition (Amsterdam, 1974) by Marite Sapiets, Peter Reddaway, and Caryl Emerson. Westview Press, Boulder, Colo., 1976. xviii, 152 pp. \$10.75.

The Chinese. A Study of a Hong Kong Community. Cornelius Osgood. University of Arizona Press, Tucson, 1976. Three volumes, illus. Vol. 1, xviii + pp. 1-446; vol. 2, xvi + pp. 447-966; vol. 3, xiv + pp. 967-1264. In slipcase, \$45.

Crime by Computer. Donn B. Parker. Scribner, New York, 1976. xii, 308 pp. \$10.95.

Cultures and Time. L. Gardet and eight others. Unesco Press, Paris, 1976 (U.S. distributor, Unipub, New York). 246 pp. Paper, \$14.85. At the Crossroads of Culture.

The Demographic Explosion. The Latin American Experience. Benjamin Viel. Translated from the Spanish edition (1970) and updated by James Walls. Irvington, New York, and Halsted (Wiley), New York, 1976. xiv, 250 pp. \$14.95. The Irvington Population and Demography Series. A Population Reference Bureau Book.

Developmental Disorders. Assessment, Treatment, Education. Robert B. Johnston and Phyllis R. Magrab, Eds. University Park Press, Baltimore, 1976. xii, 532 pp., illus. \$14.50.

A Dictionary of Chromatography. Ronald C. Denney. Halsted (Wiley), New York, 1976. xii, 192 pp., illus. \$14.50.

Dictionary of Speech and Hearing. Anatomy and Physiology. Joseph F. Brown. Speech and Hearing Service, Sacramento, Calif., 1975. vi, 276 pp., illus. Cloth, \$10; paper, \$7.

Drought Hazard in the United States. A Research Assessment. Richard A. Warrick with Patricia B. Trainer, Earl J. Baker, and Waltraud Brinkmann. University of Colorado Institute of Behavioral Science, Boulder, 1975. xxiv, 200 pp., illus. Paper, \$5. Program on Technology, Environment and Man Monograph Series.

Elementary Particles and Symmetries. Lewis Ryder. Gordon and Breach, New York, 1975. xxviii, 250 pp., illus. \$22.50. Documents on Modern Physics.

Essays in Physics. Vol. 6. G. K. T. Conn and G. N. Fowler, Eds. Academic Press, New York, 1976. x, 158 pp., illus. Paper, \$8.50.

Freud's 'Project' Re-Assessed. Preface to Contemporary Cognitive Theory and Neuropsychology. Karl H. Pribram and Merton M. Gill. Basic, New York, 1976. 192 pp., illus. \$10.

Geology of the Olduvai Gorge. A Study of Sedimentation in a Semiarid Basin. Richard L. Hay. University of California Press, Berkeley, 1976. xvi, 204 pp., illus. + plates. \$22.50.

Handbook of Iron Meteorites. Their History, Distribution, Composition and Structure. Vagn F. Buchwald. Published for the Center for Meteorite Studies, Arizona State University, by University of California Press, Berkeley, 1976. Three volumes, illus. Vol. 1, Iron Meteorites in General, xii + pp. 1-244 + index; vol. 2, Iron Meteorites: Abakan—Mejillones, vi + pp. 245-820 + index; vol. 3, Iron Meteorites: Merceditas—Zerhamra; Supplement, vi + pp. 821-1418 + index. Boxed, \$140.

The Heroin Epidemics. A Study of Heroin Use in the United States, 1965-1975. Leon Gibson Hunt and Carl D. Chambers. Spectrum, New York, 1976 (distributor, Halsted [Wiley], New York). xiv, 146 pp., illus. \$12.95. Sociomedical Science Series.

Information Chemistry. Computer Assisted Chemical Research Design. Papers from a seminar, Honolulu, July 1973. Shizuo Fujiwara and Harry B. Mark, Jr., Eds. University of Tokyo Press, Tokyo, 1976 (U.S. distributor, International Scholarly Book Services, Beaverton, Ore.). x, 386 pp., illus. \$65.

The Innovative Millionaires. How They Succeeded. Gene Bylinsky. Scribner, New York, 1976. xiv, 238 pp., illus. \$9.95.

Introduction to Logic and Switching Theory. Nripendra N. Biswas. Gordon and Breach, New York, 1975. xiv, 354 pp., illus. \$29.50.

The Journals of Jonathan Carver and Related Documents, 1766-1770. John Parker, Ed. Minnesota Historical Society Press, St. Paul, 1976. xii, 244 pp., illus. \$10.50.

Laser Speckle and Related Phenomena. J. C. Dainty, Ed. Springer-Verlag, New York, 1975. xiv, 288 pp., illus. \$38.90. Topics in Applied Physics, vol. 9.

Late-Glacial Chronology. Richard J. Lougee and Clara Rom Lougee. Vantage, New York, 1976. xxxiv, 554 pp., illus. + plates. \$15.

Lipid Chromatographic Analysis. Vol. 2. Guido V. Marinetti, Ed. Dekker, New York, ed. 2, 1976. x + pp. 339-712. \$34.50.

Management by Task Forces. A Manual on the Operation of Interdisciplinary Teams. Lawrence W. Bass. Lomond Books, Mt. Airy, Md., 1975. xiv, 198 pp., illus. \$12.50.

Marihuana. Chemistry, Biochemistry, and Cellular Effects. Proceedings of a symposium, Matinkylä, Finland, July 1975. Gabriel G. Nahas, William D. M. Paton, and Juhana E. Idänpään-Heikkilä, Eds. Springer-Verlag, New York, 1976. xx, 556 pp., illus. \$19.80.

The Nuclear Impact. A Case Study of the Plowshare Program to Produce Gas by Underground Nuclear Stimulation in the Rocky Mountains. Frank Kreith and Catherine B. Wrenn. Westview Press, Boulder, Colo., 1976. xiv, 248 pp., illus. \$18.50. Westview Special Studies on Technology, Natural Resources and the Environment.

Les Oiseaux et le Péril Aviaire. Raymond McNeil, Normand David, and Pierre Mousseau. Les Presses de l'Université de Montréal, Montréal, 1976. xxii, 256 pp., illus. Paper, \$10. Ecologie de la Zone de l'Aéroport International de Montréal (EZAIM).

Ovum Transport and Fertility Regulation. Proceedings of a meeting, San Antonio, Tex., June 1975. M. J. Harper and five others, Eds. Scriptor, Copenhagen, 1976 (available from the Human Reproduction Unit, World Health Organization, Geneva). 568 pp., illus. Cloth.

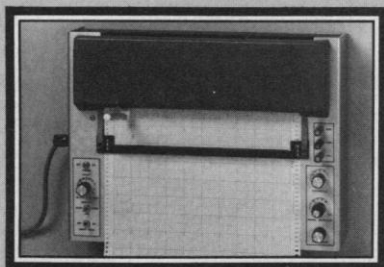
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views of Current Research. Vol. 8. Christopher Board, Richard J. Chorley, Peter Haggott, and David R. Stoddart, Eds. St. Martin, New York, 1976. vi, 232 pp. \$25.

The Promise of the Coming Dark Age. L. S. Stavrianos. Freeman, San Francisco, 1976. xii, 212 pp. Cloth, \$8.95; paper, \$4.95.

Protein Synthesis. A Series of Advances. Vol. 2. Edwin H. McConkey, Ed. Dekker, New York, 1976. xiv, 386 pp., illus. \$34.50.

Psychology of Deafness for Rehabilitation Counselors. Brian Bolton, Ed. University Park Press, Baltimore, 1976. xii, 156 pp. \$14.50.

Radiation Spectra of Radionuclides. T. B. Metcalfe. Noyes Data, Park Ridge, N.J., 1976. xii, 394 pp. \$36.

Readings in Educational Psychology. Contemporary Perspectives. 1976-77 Edition. Robert A. Dentler and Bernard J. Shapiro, Eds. Harper and Row, New York, 1976. xvi, 360 pp., illus. Paper, \$5.95. Contemporary Perspectives Reader Series.

Sacha Runa. Ethnicity and Adaptation of Ecuadorian Jungle Quichua. Norman E. Whitten, Jr., with the assistance of Marcelo F. Naranjo, Marcelo Santi Simbana, and Dorothea S. Whitten. University of Illinois Press, Urbana, 1976. xviii, 348 pp., illus. \$12.50.

Scenario Methodology in Natural Hazards Research. Neil J. Erickson. University of Colorado Institute of Behavioral Science, Boulder, 1975. xviii, 170 pp., illus. Paper, \$5. Program on Technology, Environment and Man Monograph Series.

Severe Local Storm Hazard in the United States. A Research Assessment. Waltraud A. R. Brinkmann in collaboration with Duane D. Baumann and five others. University of Colorado Institute of Behavioral Science, Boulder, 1975. xx, 154 pp. Paper, \$5. Program on Technology, Environment and Man Monograph Series.

The Southwestern Journals of Adolph F. Bandelier 1885-1888. Charles H. Lange, Carroll L. Riley, and Elizabeth M. Lange, Eds. University of New Mexico Press, Albuquerque, and School of American Research, Santa Fe, 1976. xviii, 702 pp., illus. \$20.

Sphecid Wasps of the World. A Generic Revision. R. M. Bohart and A. S. Menke in collaboration with H. S. Court, F. D. Parker, E. E. Grissell, and D. P. Levin. University of California Press, Berkeley, 1976. x, 696 pp., illus. \$42.50.

Técnicas de Laboratorio. Un Texto de Trabajo de Metodos Bio-Medicos. Gabrielle I. Edwards and Marion Cimmino. Translated from the English by Sonia Casasnovas. Barron's, Woodbury, N.Y., 1976. viii, 226 pp., illus. Paper, \$4.95. Barron's Educational Series.

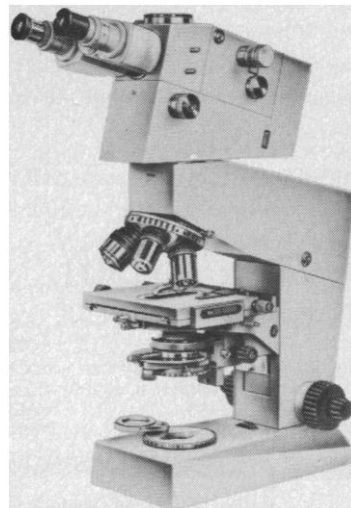
Unended Quest. An Intellectual Autobiography. Karl Popper. Fontana/Collins, London, 1976. 256 pp. Paper, £1. First published in *The Philosophy of Karl Popper* (1974).

Variations in Black and White Perceptions of the Social Environment. Harry C. Triandis, Ed. University of Illinois Press, Urbana, 1976. vi, 202 pp. + microfiche tables. \$15.

Visceral Muscle. Its Structure and Function. Henry Huddart and Stephen Hunt. Halsted (Wiley), New York, 1976. x, 182 pp., illus. \$13.95. Tertiary Level Biology.

Volcano Hazard in the United States. A Research Assessment. Richard A. Warrick. University of Colorado Institute of Behavioral Science, Boulder, 1975. xx, 144 pp., illus. Paper, \$5. Program on Technology, Environment and Man Monograph Series.

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