

## Conservation

**Nature Conservation in the Pacific.** Proceedings of a symposium, Canberra, Australia, Aug. 1971. Australian National University Press, Canberra, 1973. xvi, 338 pp., illus. \$18.75.

The erosive forces of human activity have left their scars on the natural ecosystems of the Pacific Basin over thousands of years. A counterthrust for preservation and conservation of these same ecosystems has been provided through a conscious but often weak effort of man and through intrinsic isolation or inhospitality of units of the vast Pacific region. This dynamic relationship between man and the environment will intensify as technology and numbers of humans increase. It is to be hoped that the result will be greater social awareness of man and selective application of technologies for the betterment of human welfare by assuring preservation and wise management of numerous examples of natural or semi-natural biotic units. There is some room for optimism that this may come about.

The 29 essays, project reports, and research papers making up *Nature Conservation in the Pacific* promote an important advance in understanding the status of Pacific lands, waters, and biotas. A. B. Costin and R. H. Groves have succeeded in their task as editors of providing a logical sequence of the subject matter, which is integrated by a brief introduction and conclusion. They have selected five themes as a framework for the wide variety of topics presented.

Briefly, the themes are: techniques for selection of reserve areas, conservation of fauna in relation to conservation of vegetation, ecology of Pacific-ranging biota, conservation status of and problems with islands, and conservation as related to mining and land development. The point is well made that conservation should and does include not only preservation or non-consumptive use but also economic management or multiple use. Virtually the entire spectrum of macrobiotic entities is treated in some way, with the exception of pelagic forms.

Decision-making supported by ecological analyses is rising in technologically advanced countries, particularly in Australia and North America. Many a reader may wish to know, however, whether the U.S. Forest Service is really about to reform some of its

exploitative philosophies that are costly to total environments, as is implied by the paper of Camp, or whether these same philosophies will be perpetuated behind the screen of a highly complex linear programming technique. There is reason to suspect that the human factor is universally similar in dealing with conservation programs, with only the modifying factors of social, technological, and economic advancement, and of positive governmental action, differing. Thus, for Latin America, Southeast Asia, and New Guinea, technology has not yet outrun the supply of unspoiled natural resources. We should like to expect that ecological awareness will advance along with technology and result in improved care of surviving natural and man-modified ecosystems. At the moment an accelerated test case appears to be occurring in Japan, as reported by Asahina.

The overall impact of the book is one of encouragement. The International Union for the Conservation of Nature and the International Biological Program are frequent in reference by the contributors, and the beneficial effects of their activities are reflected. Whether one has cause to struggle voluntarily for the preservation of remnant ecosystems in his own neighborhood, is charged with responsibility for instructional programs, or is involved with broad regional endeavors for the environment, *Nature Conservation in the Pacific* is a volume that will provide forceful and useful guidelines for action.

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## Explaining Psychopathology

**Aversive Maternal Control. A Theory of Schizophrenic Development.** ALFRED B. HEILBRUN, JR. Wiley-Interscience, New York, 1973. xvi, 324 pp. \$15.95. Wiley Series on Personality Processes.

This book is essentially a monograph summarizing a large body of research carried out by the author and his graduate students. Its central thesis is that a necessary condition for the development of schizophrenia is a particular type of mother-child relationship, termed "aversive maternal control." The author recognizes current thinking and research that emphasize genetic and biochemical facts in schizophrenia,

but prefers to emphasize social learning forces that might influence the probability or form of the psychotic disorder.

Heilbrun's research program builds strongly on a basic model developed at Duke University in the 1950's by Rodnick and Garmezy. His review of this and allied literature supports the reasonableness of the original Rodnick-Garmezy thesis of heightened response by schizophrenics to censure, particularly from maternal sources. He extends this notion further by suggesting that a heightened sensitivity to censure, prodromal to schizophrenic development, grows out of a mother-child relationship characterized as high in control and low in nurturance (HC-LN). The rest of the book presents an extensive series of tests of this hypothesis, initially with schizophrenics but mostly with college student subjects. The bulk of the book, therefore, presents data derived from the typical pool of undergraduate psychology students. This is a strength of the book in some ways, as it permits tests of specific hypotheses with populations uncontaminated by psychotic states, medications, and so on; but it is also a weakness, as the lines between these findings and data on schizophrenic patients are often tenuous, buttressed only by analogical reasoning which appears overdone.

The basic strategy of the research program is first to divide samples into four groups, high and low on perceived maternal control and nurturance, and then to search for relationships between these groupings and other measures, primarily through laboratory experiments. Heilbrun relies heavily upon retrospective self-reports of parent-child relationships, dismissing arguments concerning the validity of such reports rather cavalierly. This is disappointing, in view of the current status of research on families of schizophrenics, in which direct observational techniques are considered vital. The type of questionnaire Heilbrun uses to ascertain parental attitudes has often been discarded in intensive family studies because it lacks correspondence to direct family measures of interaction.

Despite this obvious limitation of the research program, Heilbrun does present an impressive number of studies testing hypotheses concerning behavioral correlates of perceived maternal attitudes. At times these studies support his hypothesis that HC-LN subjects are more disrupted by maternal criticism than his other three groups. In a number of

instances the predicted findings do not appear and the failure is dismissed a bit too readily. Very often what is intended as a crucial test of the theory is not such because of ambiguities in the design of experiments.

One critical study where a predicted relationship did not occur leads the author to search for an explanation. He suggests that the failure to find greater disruption from maternal-censure cues might be due to the existence of two different reactions to HC-LN mothers, one an active coping style and the other an avoidance strategy. A further series of studies is done, with the perceived-parental-relations groups subdivided into what the author terms open and closed adaptation styles, which appear to him to be analogous to the modes of coping shown by "process" and "reactive" schizophrenics. This further breakdown into subgroups does prove valuable, as a number of interesting group differences are found on behavioral measures analogously related to psychopathological response styles. The book closes essentially with the revised hypothesis, that while aversive maternal control (HC-LN) is a necessary condition for schizophrenic development, there are two possible adaptations to this pattern, one closed and the other open, and that these will correlate with a social learning history associated with either a reactive-paranoid psychosis or a process-nonparanoid one.

There is much ingenuity, hard work, and ambition in this book, but it is still a developmentally oriented study carried out cross-sectionally. There are some interesting correlations between perceived maternal control and concurrent laboratory performance, but the connection is highly inferential and at times forced. It is particularly interesting that at a time when many researchers in psychopathology view familial forces from a social system perspective, Heilbrun offers a more simplified hypothesis of a disturbed, unilateral mother-child relationship. It is also interesting that while so much current research is on high-risk samples of pre-schizophrenics, because of the great difficulty of separating antecedent from consequent events, Heilbrun feels comfortable drawing etiological conclusions concerning schizophrenia from correlational data obtained on largely non-disturbed college students.

This does not mean that the desire of the author to integrate and synthesize a wide body of disparate research data

is not admirable; it is. But the attempt seems at times over-inclusive and forced, as if the really interesting pieces of information contained in the book are not a sufficient contribution to this field. The author writes as if he needs to forge a comprehensive theory of schizophrenia, but his data do not warrant the definitive theoretical conclusions he presents. He has not shown that aversive maternal control is a necessary condition for schizophrenic development. Such a theory would require far more than any one investigator might do in a lifetime. He has demonstrated that retrospective reports of parent-child relations appear to be a useful anchor in personality research. Through much ingenious experimental work and synthesis of prior literature, he can suggest the potential relevance of his findings for schizophrenic development. These suggestions may very well serve as a source of interesting hypotheses and methods for future students of schizophrenia. But as proof of a social learning theory of the etiology of schizophrenia, they are extremely limited and tangential.

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## New Journals Received

**Chemical Engineering Communications.** An International Journal of Chemical Engineering and Applied Chemistry. Vol. 1, No. 1, 1973. Six issues per volume. Editor: Cornelius J. Pings (California Institute of Technology, Pasadena). Gordon and Breach Science Publishers, One Park Ave., New York, N.Y. 10016. To individuals, \$17.50; to libraries and institutions, \$49.50.

**Energy Policy.** Vol. 1, No. 1, 1973. Four issues a year. Editor: John A. G. Thomas. IPC Science and Technology Press Ltd., 32 High St., Guildford, Surrey, England. \$36.40.

**Intervirology.** The Journal of the Virology Section, International Association of Microbiological Societies. Vol. 1, No. 1, 1973. Two volumes a year. Editor: Joseph L. Melnick. S. Karger AG, Arnold-Böcklin-Strasse 25, CH-4000 Basel 11, Switzerland. Vol. 1, \$30; to members of national societies of microbiology, \$20.

**Molecular Biology Reports.** Vol. 1, No. 1, June 1973. One issue every six to eight weeks. Editor: H. Bloemendal (University of Nijmegen, the Netherlands). D. Reidel Publishing Co., P.O. Box 17, Dordrecht, Holland. Each vol., \$59.50; to individuals, \$25.50.

**Pramāṇa.** A Journal of Physics. Vol. 1, No. 1, 1973. Two volumes a year. Editor: S. Ramaseshan (National Aeronautical

Laboratory, Bangalore, India). Indian Academy of Sciences, Bangalore 560006, India. To institutions and libraries, \$30; to individuals, \$20.

## Books Received

**Academic Computers in Service.** Charles Mosmann. Jossey-Bass, San Francisco, 1973. xiv, 186 pp. \$8.50. Jossey-Bass Series in Higher Education.

**Accounting and Society.** Ralph W. Estes. Melville (Wiley), New York, 1973. xvi, 412 pp. Cloth, \$8.95; paper, \$5.95. Melville Series on Management, Accounting, and Information Systems.

**Advanced Calculus.** Wilfred Kaplan. Addison-Wesley, Reading, Mass., ed. 2, 1973. xviii, 710 pp., illus. \$15.75.

**Advances in Cancer Research.** Vol. 17. George Klein, Sidney Weinhouse, and Alexander Haddow, Eds. Academic Press, New York, 1973. xii, 448 pp., illus. \$27.50.

**Advances in Chemical Physics.** Vol. 23. I. Prigogine and Stuart A. Rice, Eds. Interscience (Wiley), New York, 1973. x, 358 pp., illus. \$22.50.

**Agricultural Adjustment in Developed Countries.** Food and Agriculture Organization of the United Nations, Rome, 1972 (U.S. distributor, Unipub, New York), xii, 204 pp., illus. Paper, \$4.

**Air Pollution.** Virginia Brodine. Harcourt Brace Jovanovich, New York, 1973. xvi, 206 pp., illus. Paper, \$3.95. Environmental Issues Series.

**Amino-Acids, Peptides, and Proteins.** Vol. 4, A Review of the Literature Published during 1971. G. T. Young, reporter. Chemical Society, London, 1972. xvi, 498 pp., illus. £9. A Specialist Periodical Report.

**Anatomy of the Chicken and Domestic Birds.** Tankred Koch. Illustrated by Erwin Rossa. Edited and Translated from the German by Bernard H. Skold and Louis DeVries. Iowa State University Press, Ames, 1973. viii, 170 pp. \$7.95.

**The Animal in Man.** Lorus and Margery Milne. Mc-Graw-Hill, New York, 1973. viii, 250 pp. \$7.95.

**Annual Review of Pharmacology.** Henry W. Elliott, Ronald Okun, and Robert George, Eds. Vol. 13. Annual Reviews, Palo Alto, Calif., 1973. viii, 520 pp. \$12.

**Arctic Life of Birds and Mammals.** Including Man. Laurence Irving. Springer-Verlag, New York, 1972. xii, 192 pp., illus. \$14.

**The Auditory Periphery.** Biophysics and Physiology. Peter Dallos. Academic Press, New York, 1973. xii, 548 pp., illus. \$32.50.

**Basic Structural Behaviour via Models.** Barry Hilson. Halsted (Wiley), New York, 1973. xiv, 114 pp., illus. \$8.50.

**Biological Psychiatry.** Joeseph Mendels, Ed. Wiley-Interscience, New York, 1973. xii, 528 pp., illus. \$24.95.

**Biology of Hydra.** Allison L. Burnett, Ed. Academic Press, New York, 1973. xvi, 466 pp., illus. \$29.

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