

## Psychopathology

**Separation and Depression.** Clinical and Research Aspects. A AAAS symposium, Chicago, Dec. 1970. JOHN PAUL SCOTT and EDWARD C. SENAY, Eds. American Association for the Advancement of Science, Washington, D.C., 1973. viii, 256 pp., illus. \$19.95; to members, \$16.95. AAAS Publication No. 94.

This volume is the product of a symposium held in 1970, but it includes material referenced as late as 1972. The symposium was motivated by efforts to integrate the early observations of clinicians, that in adults real or symbolic object loss and in infants separation from parents are associated with depression, with the more recent findings, in both animals and man, that depression has definable biological components. The essayists, 12 psychiatrists and 6 psychologists, have all themselves worked in more than a single discipline, the psychiatrists having contributed to genetics, psychopharmacology, epidemiology, and the study of animal models, the psychologists to ethology, behavioral genetics, and psychopharmacology. Collectively they offer material which vastly enriches our understanding of the determinants of depression and which may lead to a unified hypothesis.

Some of the questions to which the authors address themselves are: Are there critical periods in which the organism is especially sensitive to separation? Are intermittent separation and reunion especially stressful? Does separation in early childhood lead to a diathesis for depression later in life and does it predispose to other types of mental illness? Are there genetic predispositions to depression? Can genetics contribute to a more rational classification and treatment of depression? What are the biochemical correlates of depression? What is the biochemical mode of action of antidepressant drugs? Can psychogenic depressions be treated with drugs? Can a unified theory of depression, taking into account not only genetics and experience but also the mode of action of effective drugs, be generated at this time? Some of these questions are clearly answered, others are not. For those that are not, the authors offer testable hypotheses and strategies for future research.

The papers on human depression include a presentation by Winokur on genetic aspects, by Klerman on the contributions of pharmacology to our understanding and treatment of depres-

sion, and by Goodwin and Bunney on psychobiological aspects. Heinicke addresses himself to evidence pertaining to the question whether loss of parent in childhood predisposes to later depression. Paykel reports his investigations on the extent to which recent separation and other stresses precede clinical depression and also examines the occurrence of depressive episodes in the absence of apparent precipitant events. Holmes and Masuda summarize many years of their research on life change and susceptibility to illness. Schmale considers the question whether conservation withdrawal may be in some degree the biological counterpart of the clinical state experienced as depression and thus may play an adaptive and protective role in permitting an individual to survive an environment whose stimuli are inadequate. Senay, recognizing that depression is not uniquely human but is an expression of failure in relationships between higher organisms, recommends a general systems approach to the description and understanding of this condition.

The animal work is presented with exceptional clarity. Scott, Stewart, and DeGhett summarize many years of work on the emotional response and motivational consequences of separation in infant dogs. Fuller summarizes the differences of different breeds of dogs in vulnerability to experiential deprivation, and Kaufman reports the marked differences in the consequences of mother-infant separation in two different species of monkeys that have different social organizations. McKinney, Suomi, and Harlow summarize the results of their studies on the consequences in rhesus of early separation from the mother and also from peers. Having defined the behavioral changes, these authors are beginning to examine the biochemical consequences of their behavioral manipulations and the results of pharmacological intervention on the aberrant behavior. Indeed in work presented since the publication of this book they have described the beneficial effects of psychotropic drugs on psychologically induced abnormal behavior.

This volume is remarkable in several regards. It is extraordinarily rich in facts, ideas, and bibliography. That it does not offer a simple unified theory of depression is a consequence of the complexity of the problem rather than of a lack of energy or talent by the essayists. It is by far the best book this

reviewer has seen that brings together the findings of many disciplines in both human and animal research. Psychiatry has been hampered for too long by its inability to generate or to accept animal models as appropriate for the study of human conditions. This volume offers data that should convince almost anyone that such models are relevant and can be investigated with profit. It should be in the library of all students and researchers concerned with child-rearing practices as well as those concerned with the prevention and more effective treatment of the very common and serious mental illness it deals with. Furthermore, it offers guides for research strategy that should be applicable to the investigation of other forms of human psychopathology.

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## Structure and Properties

**Treatise on Solid State Chemistry.** Vol. 1, The Chemical Structure of Solids. N. B. HANNAY, Ed. Plenum, New York, 1973. xvi, 540 pp., illus. \$35.

Can the solid state chemist manufacture a solid with a prescribed structure and predictable physical properties? This is certainly a desirable goal and one that is slowly becoming attainable in certain systems. Contributions to this research come from an extremely wide range of disciplines, and the researchers too often have little appreciation or understanding of the various ideas and techniques being applied. This volume makes an important contribution toward rectifying the situation.

J. C. Phillips's ideas on chemical bonds in solids as opposed to molecular chemical bonds provide a framework for the first part of the book and challenge experts in established fields of solid state science to explain the observed trends of bonding in solids. The text does not provide the details for systematic study of such topics as band structure, the formation and structure of phases, and physical properties, but moves quickly to the most interesting and current topics. A particularly good description of the relationship of structure and composition to magnetic, dielectric, and superconducting behavior is presented. In most cases, the chapters are well referenced

and provide a good background for further study.

The second half of the book investigates departures from idealized solids and looks at defect structures, the effect of defects on physical properties, and techniques used to characterize solids. Little more than background and listing of the numerous techniques of chemical and structural characterization are provided. However, the way is paved for succeeding volumes which will deal in detail with several of these subjects.

The book is written from a chemical viewpoint. However, the juxtaposition of thermodynamics and phase equilibria with band theory and many current solid state physics problems should provide solid state chemists and physicists alike with an interesting perspective on their work.

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## Books Received

**Advanced Mathematical Analysis.** Periodic Functions and Distributions, Complex Analysis, Laplace Transform and Applications. Richard Beals. Springer-Verlag, New York, 1973. xii, 230 pp. Paper, \$9.50. Graduate Texts in Mathematics, vol. 12.

**Advances in Aerosol Physics.** No. 6. V. A. Fedoseev, Ed. Translated from the Russian edition (Kiev, 1972). Halsted (Wiley), New York, and Israel Program for Scientific Translations, Jerusalem, 1974. viii, 186 pp., illus. \$17.50.

**Advances in Drug Research.** Vol. 7. Alma B. Simmonds, Ed. Academic Press, New York, 1973. viii, 232 pp., illus. \$15.50.

**Advances in Radiation Biology.** Vol. 4. John T. Lett, Howard Adler, and Max Zelle, Eds. Academic Press, New York, 1974. xii, 436 pp., illus. \$29.50.

**Advances in Virus Research.** Vol. 18. Max A. Lauffer, Frederik B. Bang, Karl Maramorosch, and Kenneth M. Smith, Eds. Academic Press, New York, 1973. xii, 408 pp., illus. \$26.

**The African Origin of Civilization.** Myth or Reality. Cheikh Anta Diop. Translated from the French by Mercer Cook. Lawrence Hill, New York, 1974. xviii, 316 pp., illus. Cloth, \$12.95; paper, \$5.95.

**Algol 60 Compilation and Assessment.** B. A. Wichmann. Academic Press, New York, 1973. viii, 320 pp., illus. \$15.50. A.P.I.C. Studies in Data Processing, No. 10.

**Annual Review of Psychology.** Vol. 25. Mark R. Rosenzweig and Lyman W. Porter, Eds. Annual Reviews, Palo Alto, Calif., 1974. viii, 544 pp. \$12.

**The Art of Learning Medicine.** May H. Lesser. Appleton-Century-Crofts (Prentice-

Hall), New York, 1974. xxii, 344 pp., illus. \$38.50.

**Aspects of the Greatest Integer Function.** Part 1, The Greatest Integer Function in the Domain of the Rational Numbers. Folke Ryde. Almqvist and Wiksell, Stockholm, Sweden, 1973. 110 pp., illus. Sw.kr. 70.

**Basic Research in Myology.** Proceedings of a congress, Perth, Australia, Nov. 1971. B. A. Kakulas, Ed. Excerpta Medica, Amsterdam, and Elsevier, New York, 1973. Two volumes, illus. Part 1, xii, 698 pp. Part 2, xii, 724 pp. The set, \$98. International Congress Series, Nos. 294 and 295.

**Biofeedback.** Behavioral Medicine. Lee Birk, Ed. Grune and Stratton, New York, 1974. viii, 210 pp., illus. \$10.75. Reprinted from *Seminars in Psychiatry*, vol. 5, No. 4 (1973).

**The Cheetah.** The Biology, Ecology, and Behavior of an Endangered Species. Randall L. Eaton. Van Nostrand Reinhold, New York, 1974. xiv, 178 pp., illus. \$12.95. Behavioral Science Series.

**Chemical and Biological Basis of Adjuvants.** P. Jolles and A. Paraf. Springer-Verlag, New York, 1973. viii, 154 pp., illus. \$18.50. Molecular Biology, Biochemistry and Biophysics, vol. 13.

**The Chemistry of Electrode Processes.** Ilana Fried. Academic Press, New York, 1974. x, 226 pp., illus. \$13.75.

**Chemotherapy under Special Conditions.** H. Schonfeld, R.W. Brockman, and F. E. Hahn, Eds. Karger, Basel, 1974 (U.S. distributor, Phiebig, White Plains, N.Y.). viii, 210 pp., illus. \$35.75.

**Children in Conflict.** A Casebook. Anthony Davis with contributions by Spencer De Vault and John J. Laffey. Wiley, New York, 1974. x, 228 pp. \$10.95.

**Chronobiology.** Lawrence E. Scheving, Franz Halberg, and John E. Pauly, Eds. Igaku Shoin, Tokyo, 1974. 784 pp., illus. \$40.

**Clinical Oncology.** A Quantitative Approach. N. M. Emanuel and L. S. Evseenko. Translated from the Russian edition (Moscow, 1970) by N. Kaner. Halsted (Wiley), New York, and Israel Program for Scientific Translations, Jerusalem, 1974. viii, 272 pp., illus. \$27.50.

**Clinical Psychology.** The Study of Personality and Behavior. Sol L. Garfield. Aldine, Chicago, 1974. xiv, 462 pp. Cloth, \$14.95; paper, \$8.95.

**Coastal Ecology.** Bodega Head. Michael G. Barbour, Robert B. Craig, Frank R. Drysdale, and Michael T. Ghiselin. University of California Press, Berkeley, 1974. xx, 338 pp., illus. \$10.95.

**Communications Technology and Social Policy.** Understanding the New "Cultural Revolution." George Gerbner, Larry P. Gross, and William H. Melody, Eds. Wiley-Interscience, New York, 1973. xxx, 574 pp., illus. \$17.95.

**Comparative Pharmacology.** M. J. Michelson, Ed. Pergamon, New York, 1974. Two volumes, illus. + charts. Vol. 1, xxii + pp. 1-518 + indexes. Vol. 2, x + pp. 519-938 + indexes. The set, \$67.50. International Encyclopedia of Pharmacology and Therapeutics, Section 85.

**Computer Output Microfilm Systems.**

A Guide to Their Design and Installation. Robert F. Gildenberg. Melville (Wiley, New York), Los Angeles, 1974. x, 200 pp., illus. \$10.95.

**Computerized Business Systems.** An Introduction to Data Processing. Irvine Forkner and Raymond McLeod, Jr. Wiley, New York, 1973. xx, 502 pp., illus. \$12.95.

**The Concepts of Human Evolution.** Proceedings of a symposium, London, Nov. 1972. S. Zuckerman, Ed. Published for the Zoological Society of London by Academic Press, New York, 1973. xiv, 480 pp., illus. \$29.

**Conservation.** Archie S. Mossman. Intext Educational Publishers, New York, 1974. xii, 196 pp., illus. Cloth, \$8.50; paper, \$4.50. Intext Series in Ecology.

**Contemporary Readings in Biology.** Gideon E. Nelson and James D. Ray, Jr., Eds. Wiley, New York, 1974. x, 342 pp., illus. Paper, \$3.95.

**Current Topics in Membranes and Transport.** Vol. 4. Felix Bronner and Arnost Kleinzeller. Academic Press, New York, 1973. xxvii, 352 pp., illus. \$28.50.

**The Department of Health, Education, and Welfare.** Rufus E. Miles, Jr. Praeger, New York, 1974. viii, 327 pp. + plates. \$10. Praeger Library of U.S. Government Departments and Agencies, vol. 39.

**Digital Computing and Numerical Methods.** With Fortran-IV, Watfor, and Watfiv Programming. Brice Carnahan and James O. Wilkes. Wiley, New York, 1973. xiv, 478 pp., illus. \$13.95.

**Dislocations and Plastic Deformation.** I. Kovács and L. Zsoldos. Translated from the Hungarian edition (Budapest, 1965) by Z. Morlin. Pergamon, New York, 1974. xii, 344 pp., illus. \$10.50. International Series of Monographs in Natural Philosophy, vol. 60.

**Dynamic Stratigraphy.** An Introduction to Sedimentation and Stratigraphy. Robley K. Matthews. Prentice-Hall, Englewood Cliffs, N.J., 1974. xiv, 370 pp., illus. \$12.95.

**The Earth from Space.** Johann Bodechtel and Hans-Gunter Gierloff-Emden. Translated from the German edition (Munich, 1969) by Hildegard Mayhew and Lotte Evans. Arco, New York, 1974. 176 pp., illus. \$16.

**Embankment-Dam Engineering.** Casa-grande Volume. Ronald C. Hirschfeld and Steve J. Poulos, Eds. Wiley-Interscience, New York, 1973. xiv, 454 pp., illus. \$24.95.

**Environment Control.** Air Conditioning and Refrigeration Theory and Application. Michael K. Weaver and James M. Kirkpatrick. Harper and Row, New York, 1974. x, 582 pp., illus. \$12.95.

**Environmental Impact Requirements in the States.** NEPA's Offspring. Thaddeus C. Trzyna. Center for California Public Affairs, Claremont, Calif., 1974. viii, 84 pp. Paper, \$6.50.

**Environmental Phosphorus Handbook.** Edward J. Griffith, Alfred Beeton, Jean M. Spencer, and Dee T. Mitchell, Eds. Wiley-Interscience, New York, 1973. xviii, 718 pp., illus. \$34.95.

**Equine Infectious Diseases III.** Proceed-

(Continued on page 714)