

## 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.

MORRIS A. LIPTON

*University of North Carolina  
Medical School, Chapel Hill*

## 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