

the interpersonal situation and the self-image. Thus rigidity of behavior becomes a technique for warding off anxiety. Inappropriate behavior often brings punitive response. If this response is consistent with the subject's self-image, it will reinforce his behaving in that way. In consequence, behavior disorders of the hostile-submissive variety are often considered chronic, difficult to cure. From Carson's analysis, however, it is apparent that a change in reinforcement contingencies could break the pattern.

The beginning of maladaptive responses is sometimes traced to childhood in a disturbed family, where the subject was exposed to reinforcement contingencies which differ from those of the culture at large. More generally some personality disorders may result from adaptation to a social system which deviates from society. Prisons and some mental hospitals may constitute such systems. If so, they will tend to increase the inability of the inmate or patient to interact effectively outside, a cruel paradox for supposedly rehabilitating institutions. In contrast, psychotherapy, discussed in the last chapter of the book, is seen as an interpersonal relationship designed to induce adaptive changes in the patient's interpersonal behavior.

Far from being parochial, this book brings together notions and findings from a variety of approaches in social and clinical psychology, sociology, and psychiatry. The attempt to integrate them in a consistent framework is brilliant, original, and attractive. The style is clear and plain, remarkably free from the professional jargon which often only masks our ignorance. The abundance of examples, some amusing, some tragic, and the liberal use of titles and subtitles enable the reader to proceed at a brisk pace.

The plan of the book is straightforward, yet it would have been helpful to provide a more detailed overview of it in the introduction. Likewise this reviewer would have appreciated a summary at the end of every chapter and a final chapter of conclusions. The second chapter, on Sullivan's theory, although quite good in itself, could have been integrated into the treatment of pathology in the latter part of the book, if not omitted altogether. The discussion of social learning, in the third chapter, is too general and sounds shallow; since the payoff matrix does lend itself to interpretation as a learn-

ing phenomenon, it would have been profitable to deal with social learning in the specific interactional framework developed in subsequent chapters. The matrix presentation of interpersonal patterns becomes rarer and then ceases altogether as the discussion becomes more concerned with deviant behavior. Stricter faithfulness to formal theory in dealing with pathology would have enhanced the scientific significance of this volume, which is nevertheless quite remarkable even in its present form.

In an era plagued by fragmentation and specialization in the behavioral sciences this book aiming at integration should be warmly welcomed.

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Membrane Transport in Plants

Transport and Distribution of Matter in Cells of Higher Plants. An international symposium, Schloss Reinhardsbrunn, G.D.R., Oct. 1968. KURT MOTHES, EBERHARD MÜLLER, AXEL NELLES, and DIETER NEUMANN, Eds. Akademie-Verlag, Berlin, 1968. vi + 218 pp., illus. Paper, 24 M. *Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin, Klasse für Medizin*, 1968, No. 4a.

The conference of which this book is the proceedings was somewhat unusual in that it was devoted largely to membrane transport problems in plant cells and tissues; the organizers of the frequent conferences on the problems of membrane transport barely recognize the existence of plants. Perhaps this neglect is justified in some respects, for perusal of the proceedings of this symposium demonstrates that in general plant physiologists lag far behind animal physiologists in this field. In the so-called developed countries the biological talent, manpower, and money go into the medical and animal sciences; we are all afraid of illness and death, not of malnutrition and starvation. And since plant cells are manifestly more complex, the relatively primitive nature of this field of plant physiology is not surprising.

The 22 contributions in this volume, all but one of which are in English, give a fairly accurate picture of the state of the subject today. In the light of what I said in the first paragraph, some of the papers are excellent; for instance Anderson on water permeabil-

ities of cells of corn roots, Schnepf on transport by vesicles, Müller on regulation of transport, Lüttge and Cram on compartmentation analysis, Jeschke on the connection between electron transport and ion transport, Raven and MacRobbie on giant algal cells, Higinbotham on electropotentials and ion transport in higher plant cells. All these papers show how difficult it is to work with plants; the cells have thick layers of concentrated weak-acid ion exchangers—cell walls—around them and have only thin layers of cytoplasm packed with organelles; they are not well organized into tissues, and long-distance transport to and from tissues is not well understood.

Some of the papers are not very good and illustrate the backwardness of this area of plant physiology rather than the difficulties of the problems themselves. They seem to me to demonstrate, among other things, the self-isolation of many botanists, their poor training in the physical sciences, and their complete lack of knowledge of the work done by animal physiologists in membrane transport.

The volume, I'm afraid, is not well edited. The papers must have been printed as they were received, and in some the English is very poor indeed. I found the volume of value, however, partly because it is an accurate statement of the subject as it is—in its best and worst aspects—and partly because it gave me many ideas as to where progress can and should be made.

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Comparative Pharmacology

Use of Nonhuman Primates in Drug Evaluation. A symposium, San Antonio, Texas, May 1967. HAROLD VAGTBORG, Ed. Published for the Southwest Foundation for Research and Education by the University of Texas Press, Austin, 1969. xii + 644 pp., illus. \$15.

Collections of symposium papers are all too often verbose "overviews" of the subject; this volume is a distinct departure from the generalized, dataless, philosophical analysis. Vagtborg has compiled—evidently from tapes as well as written submissions—a record of a conference the success of which rests