

Book Reviews

COWDRY, E. VINCENT, ED. *The Care of the Geriatric Patient*. C. V. Mosby Co., St. Louis, 1958. 438 pp. \$8.00

Few authors or editors deserve or will get a wider audience in geriatrics than Professor E. Vincent Cowdry. His many years in the field have not dimmed his viewpoint nor abated his capacity for intellectual counterpoint. In his initial pages there is an immediate challenging restatement of his forceful proposals for adequate categories of geriatric education. Such positive attitudes have become the hallmark of this vigorous dean of the field of aging. These subjects have not diminished in controversy during the past five years, and quite probably a more respectful attitude from the opposition has been obtained by his espousal. A majority of those in the clinical world are opposed to organized special study in geriatrics. There is no difficulty in defending this traditional attitude, but such inflexibility does not necessarily make the minority viewpoint thereby incorrect.

The book is a catalogue that outlines the form of a clinical science as it emerges from a great deal of collateral data. It is of the compendium variety, with twenty-two contributors, of whom more than half have been identified in distinguished fashion with the clinical and social fields of aging. The nineteen chapters, each with its key bibliographic items and capped by a good volume index in a competent and handy publishing package, fall roughly into a first half of clinical, and a second half of social, features. As such, it is a satisfactory panorama of mid-twentieth century attitudes on aging in the culture of western nations. Generally the book is a broad educational outline of facts by which to initiate the uninformed and with which to prompt the memory of those engaged in the field.

It is important to point out that the title

word "care" must not be assumed to imply "medical care." This distinction indicates that this is not a textbook in geriatrics. It is more in the nature of a useful hybrid of clinical, social, and general considerations of aging. As a matter of fact, some of the medical textual chapters are not equal to chapters by Randall, Donahue, Bluestone, Tibbetts, and Sheldon, who are gerontology veterans of years' standing.

In such collections of sequential essays, it probably would not be fair to criticize material which has been based on reading and opinion rather than clinical observations. On the other hand, there are sentences which are valuable clinical contributions, *viz.*, "too often in the aged the question is not so much whether the patient can survive surgery, but whether he can survive without it" (Orr). For the most part the book is an affirmation of known theses by authorities which can serve to refresh those who know the field, and to stimulate those who have not been aware of the tenacity and intelligence of workers who now must be considered, possibly to their embarrassment, as pioneers.

Views on the case for the need for specific medical education in geriatrics crop up in several chapters. Dr. Cowdry offers no compromise: education in geriatrics cannot be left to "internists now in practice who received their medical education some years ago, when the problems of aging were, for the most part, simply ignored." Possibly seeking to gain half an educational loaf, Daeso suggests the use of a medical coordinator to channel all training in aging from preclinical to clinical years. As a part of a comprehensive collection of world-wide appraisals of geriatric problems by Tibbetts and by Sheldon, the field of social medicine is sketched out with economy and acumen. The latter feels that "... the care of aged

and chronically ill persons can no longer be left to chance, but requires the presence of individuals with special training and interest. . . ." This phrase is reminiscent of the tart statement: war is too serious a matter to be left only to the generals.

Despite the general informative value of the book, there are certain debits. In some of the clinical chapters particularly, there is an absence of formality, and a certain lack of depth of observation which is distracting. Specialists from other fields do not become specialists in geriatrics by the citation of authoritative statements. Interlineations of inadequate observations cannot be passed off uncritically. Secondly, there can be no place in an important scientific work for unhappy terms such as "oldster," "senior citizens," the unrealistic phrase "golden age," or "sunset years." To record that the term "old codger" was used is criticism enough. Lastly, the able and distinguished Dr. L. Z. Cosin of England deserves to have his name spelled correctly. Few in his country have excelled his energy, initiative, and ability.

All in all, there is too much useful material to permit lesser and remediable trivia to weigh against the book as a whole. For many, students, workers, and particularly educators, there is much that can be scanned with ultimate benefit to that fraction of the population for which, in the last analysis, all of these efforts have been made.

Joseph T. Freeman

BRODAL, ALF. *The Reticular Formation of the Brain Stem*. Charles C Thomas, Springfield, Ill., 1957. vii + 87 pp., illus. \$3.00

JASPER, H. H., PROCTOR, L. D., KNIGHTON, R. S., NOSHAY, W. C. AND COSTELLO, R. T., EDs. *Reticular Formation of the Brain*. Henry Ford Hospital International Symposium. Little, Brown &

Co., Boston, 1958. xiv + 766 pp., illus. \$16.00

In the last few years a great proportion of neurophysiological investigation has been concentrated on certain behavioral problems the study of which was encouraged, if not made possible, by the classical observations of Magoun and Moruzzi. Their initial work on the reticular activating system opened a new area to physiologists, psychologists, pharmacologists and others interested in problems of behavior and particularly in the changes which take place in the brain when one's attention is aroused, when one becomes alerted or when it becomes necessary to alter the degrees of one's "awareness" under various circumstances. In other words, a major step forward was made in regard to the understanding of the neurological basis or concomitants of behavior.

No sooner was this vast field made available than it became apparent that a number of anatomical problems were at hand. Some of the older neuroanatomy would have to be reassessed and new studies would have to be carried out dealing in large part with those areas of the brain stem (and presumably related areas at higher levels) to which the name "reticular formation" had been given before the turn of the century. In his small monograph, Professor Brodal has attempted to summarize recent work, with particular reference to studies carried out in the Department of Anatomy at the University of Oslo, dealing with fiber connections of the reticular formation, and on this basis to suggest some principles of the organization of this complex area of the central nervous system. His work is primarily concerned with the brain stem (as comprising the medulla oblongata, pons and mesencephalon) since as he states, "... it is uncertain whether the so-called reticular nuclei of the diencephalon are homologous to the reticular formation of the mesencephalon, pons and medulla." There is no

point here in discussing the beautiful detailed anatomical findings which are limited to a certain extent by the techniques available. Although a number of important observations have been made many questions still remain to be answered, such as the site and mode of termination of reticulospinal fibers; the distribution within the reticular formation of collaterals from the secondary ascending fibers (these may be of particular importance in relation to drug effects); the topography of the connections between lateral and medial areas of the reticular formation, etc.

It is of considerable interest, however, that a number of physiological observations are compatible with the conclusions derived from the anatomical studies. Dr. Brodal comes to the conclusion that, "The reticular formation is subdivided into several regions which differ with regard to their cytoarchitecture, fibre connexions and intrinsic organisation. These regions, however, cannot be considered as being independent of each other, since their fibre connexions provide ample possibilities for interaction and collaboration between the various regions. The anatomical data suggest that certain generally accepted notions of the functional organisation of the reticular formation are in need of revision."

One of the major suggestions made is that future physiological investigation will have to take structural factors more into account than has been the custom hitherto. That such is indeed the case is demonstrated by much of the discussion presented in the Henry Ford Hospital Symposium at which Professor Brodal unfortunately was not present. His work is substantiated by the findings of Nauta and Kuypers who present their latest analysis of the ascending pathways involved in the reticular formation. They specifically demonstrate a major pathway which ascends throughout the length of the brain stem tegmentum as a component of Forel's tractus fascicu-

lorum. Its axons originate in the medulla and pons and are distributed to extensive regions of the tegmental reticular formation, the periaqueductal gray matter, superior colliculus and pretectal area, intralaminar thalamic nuclei and subthalamic region. Associated with it via an intermediate reticular path, is a lateral tegmental fasciculus. An extensive mesencephalic region projects to the hypothalamus, preoptic area and medial septal nucleus. Together with the limbic system, with which it is reciprocally connected, it appears to represent a neural mechanism of homeostatic control over endocrine and autonomic functions.

Further anatomical work is presented by Scheibel and Scheibel dealing with the fine structure of the reticular formation. All of these beautiful studies demonstrate the presence of a central internuncial system which is extremely complex and organized to a very high degree. "Its input consists not only of sensory collaterals, but also of axons descending from higher centers, all orderly and precisely arranged. This output is directed both downward and upward, in the latter case ending predominantly in the diencephalon."

On this structural basis an outstanding series of papers is presented dealing with physiological, pharmacological and behavioral problems, concepts and observations which, although integrative in goal, revolve around the central role of the reticular formation. Space does not permit any extensive detailing. Suffice it so say that every one of the papers will be of interest and value to anyone working with the nervous system and behavior. A number of general problems appear here, however, which are of wide significance, and perhaps more than any other single factor demonstrate the value of such a symposium. The fact that the reticular formation has many inputs and outputs, rich synaptic connections and single axons going from a given cell both up

and down the neuraxis, and many kinds of cells, makes it necessary to think of a large number of variables in attempting to understand and interpret its functional organization. These variables, affecting different groups of cells and fibers in the complex, include such factors as specific excitatory and inhibitory properties, sensitivity to drugs, responses to self-stimulation, and a host of others discussed, with his usual acuity and perception, by Dr. Gerard in the final summary. The new data makes it almost necessary to think of altering many of the classical, fundamental ideas about the way the central nervous system works, and gives one the feeling that perhaps the area has finally appeared through which neurophysiology will be able to make the contribution to the understanding of the mechanisms of behavior which, for many reasons, has been delayed so long. Questions arise concerning unitary consciousness combined with specificity and differentiation of attention; of synaptic and other integrative mechanisms touching upon temporal and spatial integration; and a host of derivative questions as one follows this lead. Information handling (coding), problems of redundancy, channel capacity and overloading, feedback and reverberation all must be considered—many in a new light—as a result of these discussions. In any case the present flourishing of neurophysiological, neuropharmacological and neurochemical investigation related to and stemming from the fascinating problems raised by the structure and function of the reticular formation, may be the beginning of a new era in the understanding of the behavior of the total organism.

It will have been obvious from what has been said above that both the volumes are invaluable. It may be added that in both cases the publishers have also carried out their part of the venture extremely well.

ROBERT G. GRENELL

FREEMAN, THOMAS, CAMERON, JOHN L. AND MCGHIE, ANDREW. *Chronic Schizophrenia*. International Universities Press, Inc., New York, 1958. x + 158 pp. \$4.00

In the reviewer's opinion, this rich little book will prove to be an enduring contribution to the literature on chronic schizophrenia.

It reports the results of an endeavor, investigative but explicitly therapy-oriented, which the authors pursued over the course of two years at the Glasgow Royal Mental Hospital. They set up a special treatment center, in an institution which evidently until then had been oriented along Kraepelinian lines, for the purpose of studying the problems presented by the chronic hospitalized schizophrenic patient. Twelve female patients and six male patients were selected to live on this unit, and certainly their illnesses were so formidable as to constitute an acid test of the therapeutic measures which came to be employed in their behalf. Among the women, the average duration of illness was eight years; among the men, nine years. By the standards of, say, the state hospitals in this country, each of these patients would be considered to have a hopeless prognosis.

Three methods of study were used concurrently: 1) group therapy, 2) observation of the interaction on the (female) patients' ward, and 3) the arrangement of a day-room where the patients spent their whole day, provided with various occupational material, and in the company of experienced nurses who worked in close collaboration with the authors. The group therapy, although continued throughout the study, soon proved to be yielding less of therapeutic results than the investigators had hoped for, and they then turned their main therapeutic effort, with impressively good effect, toward fostering the patients' establishment of healthy identifications with the nurses in the day-room. The authors clearly and consistently show this

treatment-measure to be an outgrowth of their basic theoretical tenet, which they italicize:

"...It is this factor of 'ego feeling,' or the ability to differentiate the self from the environment, that we regard as being damaged in chronic schizophrenia, thus leading to the patient experiencing internal and external sensations as a continuum. We believe that, once this basic disturbance is appreciated, all other schizophrenic manifestations can be viewed as necessary elaborations of it" (p. 51).

Opening their book with an excellent review of the contributions to the understanding of schizophrenia by Freud and his followers, as well as by such deviants as Klein, Fairbairn and others, the authors then pursue the ramifications of the above-described central theme through a number of well-detailed theoretical chapters which cover such subjects as confusion of identity and disturbances in perception, thinking, and memory. All these chapters contain observations which are sufficiently new and stimulating to be of value not only to the clinician, but to any one who is doing research in these areas. The authors show not only a considerable ability in the handling of theoretical matters, but an outstanding grasp of the subtleties of clinical phenomena. Their observations of patients' confusion of identity, and of early indications of patients' identifying with their nurses, are masterly; I know of no book on schizophrenia which gives more perceptive and vivid clinical vignettes.

The book's main deficiency is that it conveys an oversimplified impression of the psychodynamics, and necessary psychotherapy, of schizophrenia. This is no doubt due, in part, to the circumstance that the authors were working with extremely deeply ill patients, patients whose schizophrenic break had occurred long ago and who had reached, by the time these investigators began working with them, a level of extreme dedifferentiation. The authors

themselves are aware of, and comment upon, the degree to which long-continued schizophrenia impoverishes the personality: noting how similar are the thumbnail sketches of their eighteen patients, they comment, "It is our contention that loss of individuality is a feature of the chronic patient in the refractory ward." It seems to me likely that this relative simplification of personality structure may tend to give rise to a comparably simplified theory. The authors' basic tenet, as to the loss of ego-boundaries in chronic schizophrenia, would I think soon be highlighted, when applied to an understanding of acute schizophrenia, to be a useful key, but not *the* key which it is here portrayed. As long as it is quite clear that they are referring to *chronic* schizophrenia, this objection is a mild one; but the book does tend to leave an impression that schizophrenia as a whole is to be understood by using this one key alone.

As I see it, the dissolution of ego-boundaries is a defense of the personality—albeit a last-ditch one—against intense anxiety from whatever source, and the sources can be as manifold as the complexities of human living itself. Where the authors treat this symptom almost as if it were the prime causative agent of schizophrenia, it would seem more accurate to view it as being indeed a symptom, about which the patient is—as with all symptoms—deeply ambivalent. Therapeutic efforts might better be predicated upon the assumption that although something in him wishes to be cured of this symptom, something else in him will fight against relinquishing what is experienced as an urgently needed defense against overwhelming anxiety—anxiety referable to dissociated murderous feelings, incestuous feelings, grief, tender feelings, and so on. This matter of the causality of schizophrenia is surely a formidable problem; but we know enough about this—from, to cite but one among many writings about this subject, the book entitled *Psychotherapeutic Intervention in Schizophrenia*, by Lewis B.

Hill—to warrant a stronger statement about causality than the authors make:

“We have consciously ignored any aetiological implications in discussing our views on schizophrenia, although fully aware that, accepting the conclusion that a schizophrenic state is essentially one of dissolution of the ego, we are still faced with the question as to causality. . . . Our present knowledge of physical and psychological processes and the correspondence between them renders, in our opinion, any aetiological explanations purely hypothetical and possibly misleading” (p. 136).

But within the limits which I have described—limits which, for the most part, the authors themselves clearly acknowledge—this is an excellent book. It deserves, in fact, to become one of the standard, regularly consulted works on schizophrenia. It offers, in small space and highly readable style, much that is useful to a wide range of workers in this field; researchers and teachers, therapists, administrative psychiatrists, and ward-personnel. The treatment results which the authors report, from their facilitating of the patients’ forming healthy identifications with nursing personnel, are sufficiently promising to warrant serious consideration, and in my opinion emulation, by all persons charged with the treatment of chronic schizophrenia. This measure would seem to be valuable not only in lieu of intensive individual psychotherapy, as was the case here, but also as a prelude to, and concomitant of, such psychotherapy in institutions where the latter is available.

Harold F. Searles

LIEBMAN, SAMUEL, ED. *Understanding Your Patient*. J. B. Lippincott Co., Philadelphia, 1957. 170 pp. \$5.00

The seventh Annual Lecture Series of the North Shore Hospital in Winnetka, Illinois, has been compiled into this small volume. These lectures were designed to aid the medical practitioner in gaining an increased

understanding of the various emotional problems he may encounter in his patients. This book is not written for the psychiatrist or for anyone who seeks a detailed account of human development and behavior. However, the nine well-known contributors offer in a succinct and lucid fashion a discussion of the many problems of childhood, adolescence and adult life, including premarital and marital counseling. One of the lectures devoted to the role of grandparents is of interest. Also of note is a chapter by Dr. Laretta Bender in which she discusses psychotic reactions in children. While psychotic reactions are considered rare in children, they are more frequently being recognized and the useful, but perhaps not widely known material presented by Dr. Bender may enhance the practitioner’s awareness of these psychoses as they occur in children.

This book should supplement the busy practitioner’s knowledge of the milder maladjustments and thus heighten his ability to deal with such problems. However, there is little discussion of the actual process of any psychotherapeutic approach, such as supportive or counseling methods. For example, there is a description of how a well-staffed child guidance clinic works with a school phobia problem, but little to guide the general practitioners (who may be some distance away from such a clinic), should he be presented with such a situation. Perhaps this shortcoming is to be expected when specialists—in this case, psychiatrists—attempt to reduce their techniques to purely descriptive, text-book-like material in an effort to impart their methods to physicians in other branches of medicine.

The North Shore Hospital has published several other lecture series which have been of value, and this volume may be of equal interest to many practitioners.

Virginia Huffer

RUSSELL, W. RITCHIE. *Brain Memory Learning*. Oxford University Press, Ox-

ford, England, 1959. 140 pp., illus. 18s (U. K.)

Through a series of essays consisting of "The Sensori-Motor System of the Brain," "The Word Mechanisms," "Consciousness: The Unconscious: Sleep," "Pain," and others, Professor Russell develops three major themes of brain function which give this work a true symphonic form. The pervading themes are: 1) that memory is the capacity for repetition, and that earliest memory is reinforced by subsequent memory processes; 2) that there is a bimodal excitation and inhibition physiology which extends from the simplest to the most complex units of the central nervous system function; 3) that the child's behavior patterns are effectively made in infancy and, therefore, amenable to direction and training.

The orchestration is achieved through Professor Russell's well-known work on traumatic lesions of the brain. He discusses the phenomena of traumatic amnesia and traumatic epilepsy in a less rigorous way than in his detailed publications, but this seems very proper as these data are utilized primarily to develop his major themes. Although the "capacity to repeat" literally leads to logical difficulties in that any simple harmonic motion such as the rotation of the hands of a clock must come under the definition of "memory"; this first theme carries considerable conviction.

The neurophysiological theme, despite stating very recent work of Eccles, Magoun, and the centrencephalic concept of Penfield, really utilizes the basic and classical type of *hypothalamic-prefrontal system* conformation of the past, and consequently does not convey dynamic force to the presentation.

That a child can be superficially trained is incontestable, but whether it is most effective and rewarding to train children to be "good" and "normal" is certainly questionable; furthermore, whether training can greatly influence basic traits of any child is open to even more debate. Consequently,

the third basic theme is one of hope, but with only a minimal amount of organized data to give strength and volume to the movement.

In appropriate places the text is illustrated by elegant Golgi and Golgi-Cox preparations. A fine photograph of a "traumatized" right cerebral hemisphere of the brain is garnered from the authoritative work of Dr. Ronald Norman.

As implied, this small book is not for the reader who is interested in, or expects to find, an encyclopedic discussion of brain anatomy and function, memory or learning processes. The importance of this work derives from two main sources: one, the scientific mediations of a representative and important contemporary neurologist; and two, the lucid, but largely negative demonstration that the most important, and consequently most beautiful, aspects of the relations of behavior and brain function are necessarily still, in 1959, inferential and speculative.

Robert Cohn

HILDEBRAND, J. H. *Science in the Making*.
Columbia University Press, New York,
1957. 116 pp. \$3.00

This series of four lectures by one of America's foremost chemists comprises one of the most delightful little books it has ever been this reviewer's privilege to read. The all-pervading curiosity, honesty, clarity and simple thoughtfulness of an outstanding mind are not often given the opportunity to present to a wide audience a plea for the preservation of intellectual values vital to the progress of our society. Part of the book is devoted to a fascinating description of Dr. Hildebrand's extensions of the theory of solubility. Most of it, however, necessitates no technical background on the part of the reader and considers problems being discussed widely at the present time.

Throughout the four lectures entitled "The Search for Knowledge," "False Paths,"

"Science has its Cathedrals" and "Knowledge and Power," there are statements that bear frequent repetition and careful thought. A few examples will serve to show the nature of the ideas dealt with.

"Most scientists would like to live in a society that had more respect for the power and beauty, not just the utility, of unrestricted human thought."

"Indeed, no two scientists work and think in just the same ways. . . . We proceed by common sense and ingenuity. There are no rules, only the principles of integrity and objectivity, with a complete rejection of all authority except that of fact."

"To be successful in unlocking the doors concealing nature's secrets, a person must have ingenuity. If he does not have the key for the lock he must not hesitate to try to pick it, to climb in a window or even to kick in a panel."

"One of the first principles of science is to be skeptical about sense impressions."

"Men are not all born equal, they do not have equal capacities for learning, nor for learning the same things."

With reference to the power of knowledge Professor Hildebrand states of an advanced student, that "the power he must develop is one to recognize and solve new problems, not to recite the known answers to old ones."

Many other statements here deserve being quoted. Dr. Hildebrand's suggestion that scientific thinking should become universal and should be the common-sense thinking of everyone applied to all phases of living, deserves widespread consideration. It strikes at the whole basic distortion in values of our "modern" society. He concludes with the following words the importance of which are only too obvious.

"An American citizen who is not alarmed by the contrast between the vitality of Soviet education in science and engineering, . . . and the widespread flabbiness in American education, should not worry about atom bombs. The men in the Kremlin are hardly so stupid as to incur the risks of

atomic warfare when all they need is the patience to await the fruits of an American school system degraded by teachers' colleges in which the doctrine taught, as a professor of education frankly informed his students, is different from the former idea of centering on the intellect, an idea which still holds in European countries. Unless the citizens of the United States regain a respect for intellectual achievement and provide intelligent teachers and administrators educated in the humanities and sciences for those schools in which they are now lacking, we are likely, I think, to see the power of knowledge gradually pass to hands that will wield it without the humane spirit that must be conjoined with knowledge if the knowledge is to be a blessing, not a curse."

What more can be said!

Robert G. Grenell

EYSENCK, H. J., GRANGER, G. W. AND BRENGELMANN, J. C. *Perceptual Processes and Mental Illness*. Maudsley Monographs, No. 2. Basic Books, Inc., New York, 1957. 144 pp., illus. \$3.75

This is strictly an empirical and exploratory study in the crudest sense of these terms. This type of approach undoubtedly has a legitimate place in scientific investigation, but one may wonder if it is really what is needed in the field of perception and abnormal psychology at the present time. The expenditure of effort represented here was obviously enormous. That the results are at all commensurate, however, is a matter of serious doubt to this reviewer. The actual work of this monograph was completed several years ago under a U.S. Navy Bureau of Medicine and Surgery contract and is not formally related to Eysenck's more recent research at the Maudsley on introversion-extraversion.

The chief aim of the study was to determine whether visual and perceptual tests can discriminate between groups of normal individuals, neurotics, and psychotic pa-

tients, with a view to using such tests for "screening" and diagnostic purposes. The answer here provided to this question, which might seem a foregone conclusion to many, is that groups of normals, neurotics, and psychotics do, on the average, differ from one another on a number of perceptual tests.

The three groups that were compared were 106 normals (male soldiers), 20 neurotics, and 20 psychotics (patients diagnosed in the Maudsley Hospital). The groups differed slightly in age, but apparently not in intelligence. Each subject was given 13 paper-and-pencil tests (intelligence, personality questionnaires, etc.); some 43 visual-perceptual tests of which a number were relatively simple, *e.g.*, dark adaptation, visual acuity, fusion, convergence and accommodation, and others more complex, *e.g.*, various optical illusions, after-images, etc.; and over a dozen autonomic and motor tests (sublingual temperature, salivary output, pulse rate, blood pressure, galvanic skin response, manual dexterity, stasis ataxia, etc.). In all, about 123 measures on about 70 different tests were obtained for each subject. The differences between the means of the normals, neurotics, and psychotics on each of the 123 measures were tested for significance by analysis of variance. The results are briefly summarized in Table 1.

The statistical results are not as simple

TABLE 1

Proportion of Measures Discriminating Between Normals, Neurotics, and Psychotics in Analysis of Variance

Tests	No. of Measures	Significance Level of <i>F</i> Ratio			
		N.S.	0.05	0.01	0.001
Paper & Pencil	13	0.54	0.00	0.08	0.38
Simple Perceptual	45	0.40	0.20	0.20	0.20
Complex Perceptual	39	0.38	0.15	0.28	0.18
Autonomic	16	0.88	0.12	0.00	0.00
Motor	10	0.70	0.00	0.20	0.10
Total	123	0.49	0.14	0.19	0.18

and clear-cut as they might appear. Variances are huge, and even where the group means differ, the overlap between groups is great. In most cases the variances of the three groups are markedly heterogeneous, which makes a strict interpretation of the analysis of variance impossible. Also, many of the measures are not independent, and so it is impossible to tell exactly to what extent the total number of significant discriminations attained by all the measures exceeded chance expectancy. No cross-validation was performed, making it uncertain which tests truly discriminate and which only appear to discriminate by virtue of sampling errors. Nevertheless, it seems clear from Table 1 that, overall, there are real differences between the groups in the realm of perceptual functioning.

Unfortunately this is as far as this study goes. Thus the major contribution of this monograph is that it has slightly increased our confidence in the widespread and long-held belief that normals, neurotics, and psychotic individuals differ in ways that are reflected at many different levels of functioning, including the visual-perceptual-motor levels. An interesting commentary on the unfruitfulness of the present study in taking us beyond this point is the fact that research has not been continued on these perceptual tests at the Maudsley and they are not used there diagnostically. Thus the high hopes expressed by Eysenck in the first chapter have not been fulfilled. (At present, simple paper-and-pencil tests are more effective for screening and diagnostic purposes than any combination of these perceptual tests.) In the final chapter Eysenck states: "More urgent, however, than improving along psychometric lines the practical diagnostic possibilities of these tests is the development of theoretical models of mental abnormality to explain the observed phenomena. Most existing theories may be adequate to deal with highly abstract concepts having little or no anchorage in behavior, but they do not enable us

to make predictions in the field covered in this monograph. This is an important point which we should like to emphasize. Scientific theories cannot choose the facts that they would wish to explain in any given field of study. If a theory fails to account for plainly relevant facts, this is a serious argument against it. The reader may like to try to explain the phenomena described here in terms of archetypes, oedipus complexes, life styles, or any other explanatory concepts used by 'dynamic' schools. If he finds, as we think he will, that fact and theory do not touch, then we may well doubt the value of theories that offer no guidance when they encounter experimentally ascertained facts regarding the perceptual behavior of normal, neurotic, and psychotic individuals." Yet Eysenck himself offers not even a hint along theoretical lines that might help to make sense out of these masses of data he has collected.

What is needed now is a truly experimental, functionalistic analysis of the few most promising of these perceptual tests, so as to determine as many of the sources of variance as possible. It is likely that much, perhaps most, of the variance in the present study is "error" variance. (The reliability of the measures is not known.) Investigations in this area will probably have to remain in the realm of "pure research" for quite some time.

A factor analysis was carried out on 77

of these measures in the normal group. Because of the apparently low reliability of many of the measures, the non-linearity of the correlations between measures, and the small number of subjects in relation to the number of variables, this factor analysis was conspicuously unfruitful. It is most difficult, probably impossible, to interpret any of the five factors that were extracted.

The monograph incidentally contains some features of value and interest that can be especially recommended to American workers in this field. Brengelmann introduces a number of tests of complex perceptual functioning from Germany that are little known in this country. Many of these tests have already been used in personality studies, and Brengelmann attempts to relate to the present study the hypotheses and findings regarding perception and personality based largely on German research. This section is the most psychological and perhaps the most valuable part of the monograph. Also, the description (in Chapter IV) of the Nufferno Test, which measures intelligence in terms of level, speed, and persistence, is worth noting by American investigators. This test, devised at the Maudsley by Furneaux, is a sound and important innovation in intelligence testing which merits greater recognition and use in the United States.

Arthur R. Jensen