

placement of one by the other). Since the Ukraine materials provide no answer the author digresses to a consideration of other areas.

The book is well referenced, and the wealth of sources utilized is reflected in the bibliography, Russian titles being rendered in English. For those interested in consulting sources inclusion of the original title as well would have been a convenience. (In a book aimed at the beginning student it is rather surprising to find Abramova's definitive work on Paleolithic art cited only in the obscure Russian original when a full English translation is readily available in *Arctic Anthropology*, Vol. 4, No. 2.)

In general, the book is clear, concise, and well illustrated. It supplements the author's previous *Man and Culture in the Late Pleistocene* (Chandler, 1969), which gave a detailed account of the important Kostenki group of sites just east of the Ukraine. The present volume covers both a larger number of sites and a greater time span, albeit in considerably less detail. It provides a welcome antidote to outmoded textbooks which give the student the impression that the ancestors of modern man down to 10,000 years ago lived only in a restricted part of France and which perpetuate the hoary stereotype of the "cave man."

CHESTER S. CHARD

*Department of Anthropology,
University of Wisconsin, Madison*

A Psychodiagnostic Instrument

Objective Personality Assessment. Changing Perspectives. JAMES N. BUTCHER, Ed. Academic Press, New York, 1972. x, 212 pp. \$6.95. Personality and Psychopathology, 12.

Of all devices for "objective personality assessment," by far the most widely used and most widely researched is the Minnesota Multiphasic Personality Inventory (MMPI). This volume contains the addresses given at a symposium on the MMPI by five experts—Starke Hathaway, Jane Loevinger, Warren Norman, W. Grant Dahlstrom, and David Campbell—to which have been added an overview of personality assessment by the editor and a statesman-like concluding discussion by Paul Meehl. Initially intended to honor Hathaway for his work in developing the MMPI, the proceedings read more like a Friar's Club roast sans the usual

humor, for after sober appraisals the symposium participants concluded that the MMPI must be diagnosed as conceptually and procedurally deficient and in need of fundamental overhaul. In Norman's words (p. 64),

[The MMPI's] original clinical criteria are anachronistic; its basic clinical scales are inefficient, redundant, and largely irrelevant for their present purposes; its administrative format and the repertoire of responses elicited are, respectively, inflexible and impoverished; and its methods for combining scale scores and for profile interpretations are unconscionably cumbersome and obtuse.

The likelihood of anyone's undertaking to perform a major operation upon the MMPI is, however, poor, and the prognosis for its continued anachronistic survival is good. To its devotees—a circumscribed but sizable group of psychologists and psychiatrists—any serious change in it that would require developing new standards and new skills would probably be unacceptable. For psychodynamicists and behavioral therapists, no amount of mere technical revision could ever make it acceptable. From the viewpoint of the dynamicists the MMPI is conceptually inappropriate because it does not deal with covert psychodynamic motivations. For the behaviorists it is conceptually inaccurate because it sets out to measure something mythical, namely, personality, and deals only with a restricted class of behaviors, namely, self-report on sets of test statements that may have little relevance to the individuals being tested.

As with other such venerable instruments, the essential problem with the MMPI is that while it has remained relatively constant the fields of personality psychology and psychotherapy have not. The questions clinicians attempt to answer are no longer adequately addressed by the MMPI. It must quickly be added that no other available instrument does an appreciably better job. It is unlikely that any single instrument could keep all the promises attributed to the MMPI: to be a detector of gross pathology, a mechanism for making differential diagnosis, an inventory of personality for all purposes, and a measure of current mood and affective states. There is evidence that the MMPI may indeed expose gross pathology, but there is serious question regarding its utility in measuring the other variables.

The MMPI was devised originally as an aid to diagnosis. These days it is popular to decry the making of diag-

noses as pejorative in intent and as of little relevance to the actual psychotherapeutic interventions employed. Further, it is widely believed that the reliability of diagnoses is poor and that the very effort to diagnose may hinder the establishment of the desired therapeutic environment. It is refreshing to find the importance of diagnosis defended here by Meehl, who argues that, since psychiatric disorders do "exist in nature" and are not simply arbitrary concepts, their recognition is potentially useful. Genetic evidence suggests that schizophrenia, manic-depressive psychosis, and unipolar psychotic depressions are not capricious inventions of the clinician. That some clinicians are not adept at diagnosis, or lack the skills and flexibility to adapt treatment to the diagnostic implications of patients' needs, reflects more on the clinicians than on the potential utility of diagnosis.

The question remains, however, whether the MMPI contributes significantly to adequate diagnosis. It became apparent early that MMPI scale elevations alone were insufficient for that purpose. The configural relationships between MMPI scales were found to be more useful, and considerable work was done to delineate and validate the profile configurations and codes, which then became in effect a substitute for the classical diagnostic categories. While recurring MMPI patterns and profiles may indeed have validity, the determinants behind the new classifications are not yet understood.

Just as views regarding differential diagnosis have changed, so have views of the conception of personality. The dominant role of psychoanalytic theory in the field of personality assessment has steadily diminished. The psychoanalytic assumption that personality is based on underlying dispositions that have generality across situations is challenged by both social learning theorists and neobehaviorists, and all but the most ardent personality theorists now concede that this notion must be modified to take into account the influence of the particular environments in which the individual functions. One of the conceptual problems that inheres in the MMPI is that it appears to confuse two domains: (i) personality structure—the enduring attributes—and (ii) current emotional states, which are subject to change. To the degree that the scales measure stable characteristics they are insensitive to shifts in affect; if they ade-

quately reflect mood shifts, then it is hard to justify their use as a measure of enduring personality structure.

Despite these reservations, many clinicians continue to find the MMPI useful as a measure of impairment and disturbance and as an index of treatment needs, readiness for treatment, and even benefit from treatment. In any event, one of the main reasons why it is possible for three automated commercial MMPI interpretation systems to sustain themselves financially is that a great deal is known about the distribution and correlates of the clinical scales both individually and in profile. And though the shortcomings of the MMPI are known, the answers to the technical and conceptual problems are not yet fully known. For the foreseeable future it will continue to be far easier to offer profound criticisms of this and other such instruments than profound insights enabling them to be constructively revised.

MORRIS B. PARLOFF

*Clinical Research Branch,
National Institute of Mental Health,
Bethesda, Maryland*

Neuroendocrinology

Brain-Pituitary-Adrenal Interrelationships. Proceedings of a symposium, Cincinnati, Ohio, June 1972. Z. BRODISH and E. S. REDGATE, Eds. Karger, New York, 1973. xii, 340 pp., illus. \$45.30.

The editors of this symposium consider that the pituitary-adrenal system has been overshadowed by other concerns in endocrinology. They hope to attract attention to the present status and future possibilities of research on this system. The result is a volume that should be of interest to those actively engaged in neuroendocrine research.

The first third of the symposium is devoted to an assessment of assays for adrenocorticotrophic hormone (ACTH) and corticotropin-releasing factors (CRF). Much useful technical detail is given. Until recently radioimmunoassays were the most sensitive method for detecting ACTH. But radioimmunoassays may pick up both biologically active and biologically inactive material, and the results have to be treated with caution. Better bioassays and a competitive binding assay will, one hopes, solve this problem. A bioassay using isolated adrenal cells has been refined to give a sensitivity of 1 picogram and an excellent index of precision ($\lambda = 0.03$). A

competitive binding assay is described in which the natural target organ protein is used as the receptor, although the precision of this method needs to be improved. The development of a sensitive and precise assay for CRF is a more formidable problem since the variability of the pituitary has to be added to that of the ACTH assay. Methods for measuring CRF both in vivo and in vitro are described.

Other contributors present a mixture of review and new data concerning the control of ACTH, but there is little consideration of the adrenal gland other than as a source of steroids to feed back on the control of ACTH.

Only two classes of nonmammalian vertebrates are considered. Reptiles, if they can be judged by the lizards, show both similarities to and differences from the mammals. The teleost fishes, as might be expected, are different since hypothalamic nerve fibers penetrate the adenohypophysis and may be involved in the direct control of pituitary cells. There are enormous areas of brain-pituitary-adrenal physiology to be investigated in the lower vertebrates. It is to be hoped that some of the technical advances reported here will find application to these organisms.

MARTIN SAGE

*Department of Zoology and
Marine Science Institute,
University of Texas, Austin*

Air Chemistry

Chemistry of the Lower Atmosphere. S. I. RASOOL, Ed. Plenum, New York, 1973. xii, 336 pp., illus. \$22.50.

Mention of the subject *atmospheric chemistry* often brings a rapid response: "you mean smog." While it is true that atmospheric chemistry is important to such problems, there is a lot more to it than urban air pollution. Specifically, as editor Rasool points out, there are serious questions regarding man's impact on the natural evolutionary processes of the whole atmosphere. The basic science of atmospheric chemistry as a multidiscipline is practiced and taught by a relatively small but growing number of scientists. The repertoire of the atmospheric chemist includes not only such obvious topics as measurement of air composition, but also the role of chemistry in atmospheric processes (for example, light absorption and emission and cloud nucleation),

cycles of atmospheric substances, the reactions of gases in the atmosphere (including those producing particulate matter), and trends in the chemical processes and properties of the atmosphere. A chief goal of air chemistry is to provide a basic understanding of atmospheric processes on all spatial scales and of how man influences them.

Because of the breadth of this emerging subject, it is natural to limit the focus to the lower atmosphere (the layer of air including the troposphere and stratosphere extending approximately to 30 kilometers of altitude), in or below which man and all life normally exist. Even so, it is apparent that the subject is still too large for this volume, in which only a few selected topics are treated.

The chapter by H. R. Pruppacher reviews the chemical properties and physicochemical processes of cloud and ice nuclei, showing the difficulties and inconsistencies of interpretation of measurements of the latter. R. D. Cadle covers the subject of particulate matter in the troposphere and lower stratosphere. G. M. Hidy surveys the processes that remove gases and particles from air, with strong emphasis on theoretical aspects. The global sulfur cycle—one of the dominant natural cycles influencing air composition and one which is being changed by human activity—is treated in considerable detail by J. P. Friend. S. H. Schneider and W. W. Kellogg consider the role of air chemistry in climate change, including both direct effects on radiation and a more complex variety of important feedback mechanisms. The carbon dioxide cycle is surveyed by C. D. Keeling from the point of view of reservoir models. While there is much more to atmospheric chemistry than these topics, the six chapters complement each other and provide more coherence than is normally found with many different authors.

Because of the high quality of what is included I hesitate to criticize Rasool's book on the grounds that it doesn't cover all aspects of lower atmospheric chemistry. To be sure, the cycles of carbon monoxide, hydrocarbons, nitrogen compounds, and other substances could have been added, as could a variety of other topics such as measurement of air composition and a summary of human influences. My only real criticisms are that the references in some (but not all) chapters seem skimpy and that there is no author