Montefiore psychiatric service as a "mental health center model," with many data, none of which refers to the amount of disorder in the population served or to the effectiveness of the services given the 232 local patients seen in the three years covered.

In contrast, Morton Kramer's "Epidemiology, biostatistics, and mental health planning," the first paper in the volume, gives in 64 pages a magnificent overview of the topic of this meeting, some choice illustrative examples of relevant data and how to use them, a useful discussion of how additional useful research might be conducted, and an excellent bibliography. Kramer has toiled fruitfully and faithfully as the chief of biometrics in the National Institute of Mental Health since its inception and has contributed more sense and less nonsense to its policy developments and public statements than any other member of its staff; in these few pages he epitomizes these decades of experience and perspective. This chapter will repay the purchase price by itself. The reader would be wise to go through this paper twice before entering into the later papers and discussion—if he has time to look at them.

ERNEST GRUENBERG
College of Physicians and Surgeons, Columbia University, New York

Psychoanalysis Examined

The Broad Scope of Psychoanalysis. Selected papers of LEOPOLD BELLAK. DONALD P. SPENCE, Ed. Grune and Stratton, New York, 1967. viii + 392 pp. $14.75.

This book's title is slightly misleading in emphasizing the scope of a theory instead of the scope of a man. Bellak has a wide range of interests beyond psychoanalysis proper, and has made creative contributions in several directions. For those who already know some of his works the book will make conveniently available some of the rest, and they are very good reading indeed. Bellak speaks to a large and somewhat varied audience, but it is after all a limited audience—limited by the vocabulary of these previously published papers to those scientists who are already reasonably familiar with the lingo of psychology, psychiatry, and psychoanalysis. Bellak is at home in all three fields. Given this limitation of language, he can broaden the thinking of almost anyone and, what is more, clarify cloudy areas admirably. The papers cover basic theory, experimental explorations in several directions based mainly on psychoanalytic theory, clinical applications including the problem of schizophrenia, and the consideration of creativity from a predominantly psychoanalytic view.

Those interested in the question of whether psychoanalysis is a science may find in the book some brave pioneering evidence that it is at least a protoscience. Bellak thinks hard, works hard, writes hard. He sees the necessity for conceptual clarification, testable hypotheses, experimental exploration, and reformulation of theory and hypothesis as a result of new data. He puts his money where his mouth is: instead of talking piously, he has organized teams to come to grips with psychoanalytic (and psychiatric) concepts, to put them in sufficiently definite form to be tested, and then to test them. These efforts may be of considerable interest to scientists who are only peripherally interested in much of the rest of the book, because the work is at the frontier for the advance of their cherished professional tools into their even more cherished personal, subjective lives. Michael Polanyi, addressing himself to American psychologists recently, remarked that

> no strict rules can exist for establishing empirical knowledge. Most people know this, but would urge us to accept strictness as an unattainable ideal for which to strive. But this is to turn a blind eye on tacit knowing, in which alone lies our capacity for acquiring empirical knowledge. . . . Our age prides itself on its unflinching frankness in calling a spade a spade and worse than that. But for all this bluntness, we are strictly Victorian when it comes to mentioning the mind, acknowledging its autonomous actions and its indeterminate range of knowing—even though all the power and beauty of thought relies on these tacit faculties (*American Psychologist*, Jan. 1968).

Bellak has the courage to open his eyes and look for empirical evidence of the workings, and nonworkings, of mind, and for this reviewer the power and beauty of thought shine through his efforts. Though he and his editor place his thought in the psychoanalytic mainstream, many classicists of that school would consider him much too inclined to take in ideas derived from other theories to be thought of strictly as an analyst. Bellak has no hesitancy in synthesizing concepts of learning, Gestalt, and psychoanalytic theories, and does so in a lucid fashion, as for example in his introduction. He moves about, unabashed, from analytic theory to problems of psychosomatic medicine and rehabilitation to community psychiatry to drug therapy and to psychological testing. Nor does he stop at these limits: there is a fascinating analysis of ten of Somerset Maugham's stories which provides a glimpse of how one might proceed to use psychoanalytic insights in a more responsible fashion than has been shown recently in the fiasco of the Bullitt-Freud biography of Wilson. The book offers a rewarding picture of a rich intellect free to roam and probe in many difficult fields of study.

There is a "but," unfortunately; storms and shoals are after all the price of discovery. The strongest caveat involves some of the statistical operations in Bellak's collaborative experiments. Anyone who has worked with judges' ratings in matters psychological will feel alarm bells ring inside him at the remarkable correlations of such ratings reported, for example, in chapters 8 and 9. On the surface the reporting seems meticulous and impeccable, but it is well-nigh impossible for this reviewer to ferret out exactly what was rated by whom; there are elisions and assumptions which weaken the case made and shake the reader's trust in a way that saddens one who appreciates Bellak's intent. And there are small objections one can easily make to some of Bellak's theoretical formulations. Yet in the end one can retain a sense of wonder, and affirm Bellak's vision and enterprise: his work opens new oceans, supplies first maps, grasps the imagination. He is mightily assisted by a friendly ambassador at home, his editor Spence, who carefully pulls things together for us landlubbers and makes further voyaging with Bellak a better bet.

WILLIAM C. LEWIS
University of Wisconsin Medical School, Madison

The Story of a Quest

Men and Dinosaurs. The Search in Field and Laboratory. EDWIN H. COLBERT. Dutton, New York, 1968. xviii + 283 pp., illus. $8.95.

This is a readable, technical, popular, romantic, scientific treatise and adventure story. To a paleontologist the names Como Bluff, Dinosaur Monument, Flaming Cliffs, and Tendagaru

can sound as fabulous as Graustark, Sidi-bel-Abbès, or Kashmir. The history of dinosaurs is, indeed, a romantic story. Perhaps most vertebrate paleontologists of today were led to their profession by true or fictional accounts of the search for large fossils.

The history of science is of scientific importance and has a bearing on how we think about supposedly "purely objective" aspects of that science, and to the extent that a scientist does not know the history of his own field he is an ignorant man. Colbert has written a complete and balanced treatment which fills a scientific need in its field and makes fascinating reading far beyond the confines of paleontology.

The subject is treated from the work of Mantell and Buckland in England in the 1820's to the Mongolian-Polish Expedition of 1964. The famous explorations in western North America, the important work in 19th-century Europe, the Tendagaru excavations in German East Africa, and the Central Asiatic Expeditions of the American Museum of Natural History all receive their deserved attention. Accounts of lesser-known localities are also provided. Especially helpful are comments on the Upper Triassic dinosaurs.

The numerous and meaningful photographs not only illustrate, but tell a significant story of their own. There is a photograph taken at Tendagaru around 1910 showing Dr. Werner Janensch standing in a pleated shirt, long coat, and wide-brim hat with his fingers curled in a gentlemanly manner around a long, authoritarian knobbed stick. He stands erect behind seven black natives seated in back of a dinosaur leg bone. The picture is its own comment on colonialism and a world that is as extinct as a dinosaur.

Men and Dinosaurs is a book of science as well as a book of history. In presenting the history of the ideas about dinosaurs the author has necessarily provided us with the information that guided earlier and present workers. The reader, whether a paleontologist or not, is led painlessly through a considerable quantity of technical data about the morphology, classification, and paleoecology of dinosaurs.

The only salient omission from the book is a discussion of the important contributions of the author himself.

WALTER H. WHEELER

Department of Geology,
University of North Carolina,
Chapel Hill

An Extraordinary Gift

The Mind of a Mnemonist. A Little Book about a Vast Memory. A. R. LURIA. Translated from the Russian by Lynn Solotaroff. Basic Books, New York, 1968. xvi + 160 pp., illus. $4.95.

From time to time, through decades of a rich professional life, Aleksandr R. Luria, of the University of Moscow, found time to gather interview material and well-planned experimental data from a professional mnemonist, that is, an exhibitor of extraordinary feats of memory. The man, though reasonably intelligent, had been a misfit in many tasks because of his very capacity to rely quite successfully upon visualized details—a self-manufactured pictorial world—rather than upon meanings, rationally derived symbols, to assist in organizing such recall. Now Luria gives us, from "some old yellowed notes," a vivid description of this remarkable gift.

The man, S., has extraordinary synesthesia, apparently of all sensory modalities. The words of a Hebrew prayer, he tells Luria, "settled in my mind as puffs of steam or splashes." Often his visual impressions are synesthetically accompanied by auditory, or vice versa. Taste, smell, and touch synesthesias are likewise prominent. These synesthetic impressions are often useful in bringing back whole scenes. But simply because they are "irrelevant"—the visual impression, for example, being given a gustatory quality—they are at times distracting and actually work against rapid and accurate recall. Of someone's voice he says: "Listening to him, it was as though a flame with fibers protruding from it was advancing right toward me. I got so interested in his voice, I couldn't follow what he was saying. . . ." Along with this synesthesia we are not surprised to learn that he has an eidetic intensity of imagery. Although Luria does not here conduct the types of studies of eidetic phenomena which used to be known in the West (Jaensch, Klüver), the record is reasonably clear that rich visual eidetic imagery of a virtually hallucinatory intensity frequently accompanies the synesthesia. Affective qualities are likewise frequently joined with either or both of these. We see manifested the type of rather undifferentiated perceptual recording that Heinz Werner called "physiognomic."

Luria describes dozens of instances in which S. reproduces almost without error very complex materials, including numbers and letters dating from a few months or from many years back. Despite the occasional confusion from synesthesias, most of these examples suggest simply an extreme form of careful attending and visualizing, with unusual recall. At times, however, the mnemonist goes to extraordinary extremes. Confronted by the first four lines of *The Divine Comedy* (beginning *"Nel mezzo . . ."*), he brings up secondary associations for the words: "(*Nel*)—I was paying my membership dues when there, in the corridor, I caught sight of the ballerina Nel'skaya. (*mezzo*)—I myself am a violinist; what I do is to set up an image of a man . . . playing the violin." This superfluous baggage seems to complicate the task, but actually, in view of Luria's evidence of long-term success in reproduction, it seems apparent that the subject has worked his way toward a method of attending and a method of recalling which are usually adequate for his own purposes. Both before and after becoming a professional mnemonist, he had to master thousands of tables of digits and other essentially nonsensical types of material. They all come back as the setting, the place, the time, the names of the people around him present themselves. He uses all these cues (which most of us would rapidly forget) as a practically unerring framework for recall.

If we try to define more sharply the difference between this man and the rest of us in memory performances, it will appear first that he emphasizes extraordinary concreteness, sticking to what he saw rather than what it meant. The results are occasionally bizarre. Luria writes: "I read him a simple rule such as the following, which any schoolboy could easily understand: 'If carbon dioxide is present above a vessel, the greater its pressure, the faster it dissolves in water.' " The subject visualizes gas above the vessel, then visualizes a heavy black line below the gas, which is, for him, the "pressure," so the gas, which is described as dissolving in the water, comes up against his (imagined) pressure, and cannot be absorbed!

But there are many other odd effects at the time of the original presentation. Objects perceived are "distributed" freely through the surroundings, and to be recalled must be captured from the places where they have been stowed away. "I put the image of the *pencil*