even the physical and anatomical papers evidences of this intrude, as it were, in many ways.

The section on surgical treatment is unquestionably the most exciting in the volume. The dramatic quality of successful surgery, especially when novel, heightens this effect, but it is based on sounder considerations. As a side issue, surgery on humans, coupled with careful pre- and post-operative study, performs experiments which the physiologist has not yet duplicated. Two of the four papers in this section, those of Bucy and of Meyers, are physiological studies in this vein. However, the emphasis and main interest in all four papers is therapeutic. Klemme's paper contributes little, but the other three, culminating in Putnam's smooth presentation and evaluation of his own experience, leave one with the reasonable expectation that surgical attack, still largely in the experimental stage, will shortly lead to standardized procedures widely applicable to the relief of "basal ganglion disease."

Reviewing the volume as a whole, and as a research publication, it seems to have balanced adequately the requirements of presenting technical research on the one hand, and basic research on the other. In both these fields its largest service to the general reader will be to break down the isolation in which basal ganglion disease and function has hitherto been regarded, and to emphasize the coordinated nature of motor action, whether healthy or diseased. Especially does this volume dispense with the dichotomy between "the old motor system and the new"; basal ganglia and cortex. Yet only as the directions indicated in this volume are more fully explored in clinic and laboratory, may we expect to understand the contribution of the basal ganglia to total motor function. For unquestionably this book marks a beginning, not an end, of a phase in research.

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UNCONSCIOUSNESS

Unconsciousness. By JAMES GRIER MILLER, Society of Fellows, Harvard University. ix + 329 pp. New York: John Wiley and Sons, Inc. 1942.

"THIS book," as the author says in his preface, "attempts to distinguish the various meanings of the word *unconscious* which have been used, and to describe and differentiate carefully the diverse sorts of human behavior which have been included under this term." No fewer than 16 meanings are distinguished, some of them being, as applied to the individual said to be unconscious:

Unresponsive to stimulation, either to a particular stimulus or to all (or most) of the stimuli present.

Undiscriminating, not responding differently to differences of stimulation.

Verbally unresponsive, unable to communicate any evidence of discrimination.

Inattentive to a stimulus, responding only automatically.

Acting involuntarily.

Lacking insight into one's motives for an act or reasons for a conclusion.

Unable to remember what one has experienced.

Unable to remember desires and ideas that have been "repressed" from consciousness because the individual is afraid or ashamed of them (the Freudian meaning).

Unaware of a given stimulus or act—the generic meaning for those psychologists who are willing to accept introspective evidence, as the first three definitions given above are those acceptable to the behavioristic psychologists.

The phenomena indicated by each of the definitions are reviewed at some length with a view to appraising the amount of reality embodied in each definition, and finally a tentative approach is made toward synthesis.

The body of the book contains a large number of interesting discussions. For example, there is the neurological question whether consciousness is peculiar to the cerebral cortex or any particular part of it, to the hypothalamus or to the nervous system or organism as a whole. There seem to be higher and lower levels of conscious behavior, and "it is best to picture . . . consciousness (awareness) as migrating from place to place, being present in whatever region of the nervous system is at that time the location of the highest integration of the total behavior."

As to remembering and forgetting, the question is considered whether there is such a thing as "simple forgetting," an atrophy through disuse. Without dealing quite fairly with the evidence—as it seems to the present reviewer—the author rejects simple forgetting in favor of such factors as interference, repression and the reorganization of memory traces by an unconscious dynamic process.

The author's method, in general, is to bring together the problems and observations of the psychiatrists and clinical psychologists and the experiments of the laboratory psychologists offering some light on these problems. These two types of psychology have gone on side by side for many years without much contact with each other, though the desire for such contact has been expressed from time to time. The author's freedom from partisan heat, combined with his clear and fearless presentation of the issues, open the way for frank discussion with the hope of fruitful investigation of this kind of problem.

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