whom mercury was administered. The earlier development of tabes and
general paralysis after the treatment of syphilis by salvarsan, to which
others too have drawn attention, is also noted by the author, though he
admits there has not yet been sufficient time to enable us to acquire
demonstrative statistics.

Tabes dorsalis and general paralysis are not dealt with in detail, since
the author still holds that neither can be regarded as an ordinary syphilitic
affection of the nervous system; he maintains they are special diseases
characterized by clinical and pathological features not common to nervous
syphilis in the ordinary sense of the term.

This volume is certainly the most complete clinical account of the
subject with which it deals, and is consequently an extremely valuable
book of reference to the general physician as well as to the neurologist.
Unfortunately the poor paper on which it is printed has not allowed a
satisfactory reproduction of the otherwise excellent illustrations.

GORDON M. HOLMES.

Psychology from the Standpoint of a Behaviourist. By J. B. WATSON,
10s. 6d. net.

BEHAVIOUR psychology has undergone a rapid development in America,
where it is the direct outgrowth of much productive work on animal
behaviour. Professor Watson is one of the leading exponents of the new
school, and this is the first elementary text-book written from the strictly
behaviourist standpoint. The aim of the behaviourist is to bring psycho-
logy into line with other sciences and to approach it according to the
universal methods of science. Thus mental phenomena, the usual subject
matter of the psychologist, are in this volume excluded from consideration.
They may exist, but they are not regarded as amenable to scientific treat-
ment, presumably on the ground that they cannot be directly observed
except by their subject. This method of study, which would seem to
exclude introspection as a source of knowledge, naturally involves a special
terminology; Professor Watson, in order to avoid words with subjective
implications, therefore confines himself to the description of behaviour
in terms of movement responses. There is no discussion of consciousness
and no reference to such terms as sensation, perception, will, attention,
and the like.

The opening chapter is concerned with the definition and scope of
psychology, and with its relation to physics, neurology, physiology, and
medicine. Behaviourism is exclusively concerned with the organism in
action, with the response of the individual to his environment, and its
aims are to “predict human activity with reasonable certainty”, and to
formulate “laws and principles whereby man’s actions can be controlled by
organized society”. The various types of possible response are classified
under four main headings: (1) Explicit habit responses: tennis playing,
talking, building houses; (2) Implicit habit responses: thinking (here
described as subvocal talking), bodily sets or attitudes, conditioned reflexes; (3) Explicit hereditary responses: sneezing, dodging, fear reactions; (4) Implicit hereditary responses: endocrine secretions, changes in circulation. In subsequent chapters these various types of response are studied in detail.

The second chapter is concerned with the various psychological methods, and these the author classifies under the following headings: (1) Observation with and without instrumental control; (2) The conditioned reflex methods; (3) Verbal report method (speech reactions); (4) Methods of testing (intelligence, vocational tests, etc.).

After these preliminary considerations a chapter is devoted to the physiology of sensation, and following this study of "the receptors and their stimuli" an account is given of the further details of sensory-motor adjustment in two chapters which deal with the nervous system (neuro-physiological basis of action), and the muscles, excretory organs, and ductless glands (organs of response).

Subsequent chapters are devoted to hereditary modes of response—emotion and instinct—and Professor Watson furnishes an account of some of his own experimental work on children. On the basis of his observations he expresses the view that fear, rage, and love (in the Freudian sense) are the emotional reactions belonging to the original nature of man. The subject is dealt with exclusively in terms of situation and response, and subjective terms such as feeling, desire, need, and so on, are not referred to or utilized in any way.

Memory is here defined as "a general term to express the fact that after a period of no practice—explicit bodily habits, explicit word habits—the function is not lost, but is retained as part of the individual's organization, although it may, from disuse, have suffered from greater or lesser impairment."

A special chapter is concerned with language, speech being "explicit language habits"; and thought, which is here re-defined in conformity with behaviouristic psychology, is described under the heading of "implicit language habits" or "subvocal talking". This is perhaps the most important chapter in the book, as it sets forth the basic doctrine of the behaviourist. This is, that thought is no more than implicit behaviour. "It is not different in essence from tennis playing, swimming, or any overt activity, except that it is hidden from ordinary observation, and is more complex, and at the same time more abbreviated as far as its parts are concerned than even the bravest of us could dream of. Thought is highly integrated bodily activity." Such a theory is assimilated with difficulty, as it would reduce thought to kinesthetic sensations, and involves a denial of the image as distinct from sensation. Quite apart from any metaphysical theories, the existence of images as an empirical fact can scarcely be disputed. A., playing tennis, is making a series of explicit adjustive movements to an observed situation. A., thinking of playing tennis, is making a series of implicit adjustive movements to an imagined situation. It is characteristic of thought that it should refer to some situation—present, past, or future—and it is most difficult to understand how, for
instance, a vivid and intense visual image is explicable on the basis of slight muscular movements. In a measure this theory of thought would seem to weaken rather than strengthen the behaviourist position, because it is contrary to the facts of daily experience. Cognition is too fundamental a fact about the human being to be ignored successfully by the psychologist, and somehow or another it will have to be taken into account.

From the brief outline that has been given of the contents of this volume, it will be seen that Professor Watson adopts the conventional method of the psychologist in presenting the subject to the student. He artificially divides up the individual reaction systems of the individual for the purposes of description, just as it is customary to describe states of consciousness under the headings of cognition, conation, and affection. Having thus described the various part activities, he devotes the final chapter to the consideration of the totally integrated individual in action, or the personality and its disturbances. His practical treatment of this subject is useful, but the chapter is short, and, as the author explains in the preface, by the time attention has been paid to the necessary part activities there is but little space to consider the totally integrated individual.

This volume contains much of interest, and Professor Watson writes with clearness, vigour, frankness, and courage. It is doubtful, however, if his theoretical views will find general acceptance, and they would seem to need much more evidence to support them than is at present forthcoming. Consciousness as a fact cannot be dismissed in a few abrupt and vigorous phrases, and the reader will still probably feel after reading this volume that man has a psychophysical rather than a merely physical organization. As a method of approach, and on practical grounds, behaviourism may well be left to take care of itself, and it may be relied upon to furnish contributions of value to psychology. As a reaction against academic introspectionism its significance is readily to be understood, and by its emphasis on action rather than thought it has already exerted a considerable and beneficial influence upon normal psychology. The psychopathologist long ago discovered that the academic psychologist was unable to afford him much assistance in elucidating the problems he was called upon to solve, and he has tended naturally to develop a psychology which, in many respects, is closely allied to behaviourism. The aims are similar, though the methods and terminology differ.

H. Devine.


It is no easy matter to condense within a small compass a complete scheme of neurological examination; yet Dr. Monrad-Krohn has succeeded in presenting in a slim volume of less than 150 pages a detailed and practical account of the methods available in the study of nervous disease. The
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H. Devine

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