

tory of these functional systems are illustrated by clear diagrams. The mastery of these simple diagrams will give the student the principal landmarks for all of his subsequent study of cerebral morphology.

While this work is primarily a text-book of the morphology of the nervous system, its great merit lies in the fact that its facts so far as they go also express the functions of the parts, so that comparative physiology and comparative psychology will both find in it an immediate point of departure for their special researches. It will form the natural preparation for such courses and also for courses in human neurology, for it is not designed to take the place of any of the manuals on the human nervous system. Very little space is devoted to the human brain alone except in the chapter on the neo-pallium, yet every chapter is essential to the comprehension of the corresponding human structures, a claim which can hardly be made for any previous work on comparative neurology.

This book is an outgrowth of the work on nerve components inaugurated by the American school of comparative neurologists and no estimate of the validity of the conclusions arrived at is possible without a study of the series of memoirs on nerve components and functional divisions of the brain upon which it is based. This work is still so incomplete that any attempt to summarize its results is necessarily fraught with the dangers of too hasty generalization. And it would be rash to claim that all of Johnston's suggested homologies will stand the test of time. This much may be said, that they are not out of harmony with the facts as at present known, and where his conclusions can not be regarded as definitely proved they are sure to be stimulating and helpful in pointing the way toward the truth; for the basis of the work is sound and the leading conclusions abundantly supported by the singularly concordant results of the studies of the new school of comparative neurologists. C. JUDSON HERRICK.

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*The Loose Leaf System of Laboratory Notes.*

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The laboratory note-book is a subject of more or less interest and importance to every laboratory teacher. In some cases its value may be underestimated, and as a consequence the note-book, as an index of the laboratory work of the student, is an almost negligible quantity. On the other hand, there is the tendency to exaggerate its value and overestimate its importance, with the result that it may become the inflated repository of elaborate compilations from every available source, including elaborately detailed drawings, artistically executed, and involving an immense outlay of time and energy, and finally bound up in morocco covers.

Between these extremes are to be found all sorts of intermediate ideals and practises, somewhere among which the 'Loose Leaf System' under review may be listed. Briefly distinguished, it consists of a series of printed laboratory directions for the study of some twenty-one types of animals, from protozoa to birds, the whole loosely tied up in binders' boards, and so arranged as to allow the inclusion of the students' notes in connection with directions given for each type.

So far as the directions themselves are concerned they furnish about what every laboratory teacher provides, namely, a manual of directions, either printed or typewritten, to facilitate and systematize the students' work. The directions here provided furnish a fairly adequate outline for an elementary course in zoology of perhaps a single semester. The chief criticism, from the writer's point of view, is that the directions follow too closely the *verification* method of the older manuals, rather than the *interrogatory* method; that is, the student is too fully advised as to *what* is to be seen and *how*, instead of suggestively presenting him with a series of problems for solution, or opening before him avenues of discovery.

In general, the subjects are well presented, and with comparatively few errors of statement. One such may be pointed out in connection with the study of the medusa, *Goni-onemus*, where it is said that 'like all hydroid

medusæ it buds off from plant-like masses of fixed hydroid polyps.' As a matter of fact, this medusa forms a conspicuous exception to the general rule and does not arise by budding, as in *Obelia* or *Pennaria*. The typography and press work are excellent. The mode of binding is, however, far from ideal. Much better covers for such notes are now provided, which are far simpler and more effective than the rather crude 'shoe-string' method used in this book.

C. W. H.

*The Subconscious.* JOSEPH JASTROW. Boston and New York, Houghton, Mifflin and Co. Pp. ix + 549.

This book is not so much a theory of the subconscious or an analysis of the concept of subconsciousness, as an attempt to schematize certain portions of normal and abnormal psychology, on the basis of a definite assumption of a subconscious, the conception of which, however, is very indefinitely outlined. The course of the whole exposition is directed toward a specific development of a familiar theory of the self. The treatise throughout is furnished with a wealth of illustration which may be of use to the instructing psychologist, but it is embellished with a profusion of metaphor, simile and analogy, which, under the author's mastery of polysyllabic verbiage, gives rise to a florid fluency apt to cause the newly introduced reader to lose the path of the argument amidst the rhetorical gardens which surround it.

In the ten chapters of Part I., which deals with the normal consciousness, the author takes us through an elaborate exposition of the doctrines of habit, attention, automatic action, will and self-consciousness, with which we have been made familiar by James. This part seems apt to be found of much use for students covering intensively these topics of psychology.

It is in this part, however, that the concept of the subconscious (or perhaps we should say the term subconscious) is made a useful basket for the reception of the odds and ends left loose by more timid authors. First is shown how processes go on without conscious-

ness. Then in Chapter VI. (The Mechanism of Consciousness) is assumed a subconscious control without definite definition of the same, and the 'apportionment of mental life to the subconscious and conscious participants' is discussed, the topic being continued through the succeeding chapters.

In the course of this discussion, not only are various types of automatic and habitual action handed over to the responsibility of the subconscious, but active recall, and spontaneous trains of association in sleep or waking, are construed as the 'bringing of the subconscious activity to bear for the service of the conscious.' The associative mechanism in general is said to 'find its sphere of activity largely in the subconscious realm.' Self feeling is said to be strongly tinged with subconscious elements; subconscious feelings of our own importance, of the attitude of others, etc. By way of strengthening the useful concept, the experimentally ascertained effects of imperceptible stimuli on consciousness are cited.

So far, the term subconscious covers the general field of (1) unconscious control of activity, (2) production of conscious effects by factors not themselves in consciousness, and (3) vague consciousness.

In Part II., which deals with abnormal phenomena, dreams, hypnagogic hallucinations, deliria, drug intoxications, somnambulisms, hypnotic states, hysterias, and alterations of personality, or the psychological side of these, are considered and described on the basis of the same concept (or term) of the subconscious. The principal factor in these abnormalities is almost stated to be the dominance of the subconscious as over against the dominance of the conscious in normal experience.

In general the rôle this subconscious plays is shown as identical with that in the actions, perceptions and associations of normal consciousness. The important new phases which are reduced to a basis of subconscious activity are: (1) anesthetics, which are shown to be not physical losses of sensibility, and to be even psychically contradictory, (2) confusion of hallucination with reality, and (3) the loss of conscious control over actions which yet go