reduced by this inflammation as not to be able to withstand the action of organisms or toxins of much less virulence from some other part of the body. It is only when a metastatic inflammation subsides after the removal of one possible source of infection that this is proved to have been the exciter.

A. F. MacCallan.


It is widely recognized that much of the progress in our knowledge of instinctive behaviour, sensation, and perception is attributable to the biological, physiological, psychological, and clinical researches of Lloyd Morgan, Sherrington, Rivers, and Head in Great Britain. To yet another of our fellow-countrymen—this time an ophthalmologist—we are indebted for attempting "to gather together," as he puts it, "some prolegomena to a treatise on perception and at the same time to formulate a working hypothesis."

Sir John Parsons has written an invaluable book. He has brought together all the relevant portions of the above-mentioned researches, together with those of Magnus, Piéron, Allen, etc.: he has described the most recent psychological views advanced by G. F. Müller, and by Wertheimer, and others of the Gestalt school; he has borrowed freely from the writings especially of Kappers on the comparative vertebrate anatomy of the nervous and sensory systems—in his very proper conviction that "psychology, as a science, can only be developed upon a sound biological basis"; and he has endeavoured to place our ideas of the process of perception on a scientific footing.

Sir John accepts Head's hypothesis of a dual sensory mechanism; but in place of "protopathic," he prefers to substitute the term "dyscritic." In addition to "dyscritic" and "epicritic," he introduces the term "syncritic" to denote those higher nervous integrations which may "become manifest in consciousness as conceptual thought." He believes that sensation is purely dyscritic in all vertebrates below the amphibia and probably in most of the amphibia, that is to say, that sensation is primitively characterized by an "all-or-none" character, by absence of gradation, crudeness of localization, vague diffuseness, and by a strong charge of affective tone. And he maintains that this view receives powerful support from the anatomical evidence which he is able to bring forward so interestingly and in such detail.
Throughout the book stress is laid on the play of what the author calls "the apocritic principle"—the processes of differentiation, segregation, and integration of sensations (or "recepts" as he preferably terms them) in the genesis of perception. He also insists throughout on the importance of what he terms "the back-stroke influence of the higher centres" on the primordial functions of the lower nervous levels. "We are conscious only of the final products of the nervous impulses which traverse long and complicated paths . . . ; and it is only by the most searching observation, experimentation, and analysis that we gain the merest inkling of what goes on in the formative zone which underlies the final finishing shop, and which holds the secrets of earlier evolutionary stages." (The expression "formative" zone, adopted from Müller, corresponds broadly to Head's "schemata.")

For the ophthalmologist special interest attaches to the author's development of his view, originally enunciated in his Bowman Lecture of 1925, that scotopic (rod) vision exemplifies the dyscritic (protopathic), while photopic (cone) vision exemplifies the epicritic system of sensibility. True, the former does not appear to show the "all-or-none" reaction, nor does it initiate a mass reflex. But these, the author suggests, may well have existed in its more primitive manifestation. Indeed, Sir John would be the first to realize the serious difficulties, as well as the almost irresistible attractiveness, of his hypothesis. He admits that the dyscritic retinal mechanism responds in man as if it were epicritic when it is subjected to sufficiently strong stimulation, and that it has become endowed in man with some gradability and with high adaptability. But it is somewhat surprising, in the light of Head and Rivers's work, to read the statement (which, however, may well be true) that "adaptation must be considered a feature of primitive sensation." And he goes on, strangely enough, to say:

"It is a priori more probable that it (adaptation) should remain always more attached to the diffuse dyscritic sensation, thus underlying all the responses of the given sense, than to the epicritic sensation, which in the cases of touch, temperature, and vision is punctate in character."

To the reviewer the whole problem of adaptation (and also of its relation to induction) seems to need closer consideration than it receives here, and he hopes that in preparing a future edition of this book, Sir John Parsons will give it his fuller attention. Frank Allen's striking work on the effects of so-called "fatigue" with spectral colours upon retinal sensitivity, etc., will be found on the whole lucidly described in fair detail; but in the reviewer's opinion it needs confirmation before it can be confidently accepted, as it has been by Sir John Parsons.

But these and other doubts and difficulties enhance rather than detract from the value of such a monumental work as this. Hardly
any other man could have brought the necessary breadth of reading and depth of thought to bear on so difficult a subject. He has clearly succeeded in revealing the essential nature and structure of perception. Explicitly or implicitly, he has indicated the respective limitations of the anatomical, physiological, and psychological approaches to the problem. And, in so doing, he has demonstrated the narrow-minded fallacies and absurdities that must result from the investigator's imperfect knowledge of, and training in, any one of these three methods of approach.

C. S. Myers.


This is a clearly written book, giving a fairly complete picture of the various tuberculous diseases of the eye. In the introduction the author remarks upon the undoubted increase of tuberculosis since 1918 in Vienna. This is probably one of the results of the war and after-war privations, and its effect in different countries is variable. In this country there has not been a definite increase in tuberculosis.

The scheme of the book is first to discuss the relationship between general tuberculosis and that of the eye. Then follows a description of the disease as it affects the different parts: conjunctiva, lacrimal gland and sac, phlyctenular and epibulbar tuberculomas, affections of the cornea, with sclerosing keratitis and scleritis. Then comes a description of uveal disease and the relationship between retinal and optic nerve disease. The final chapters are devoted to a discussion on syphilis and tuberculosis, and to a review of modern therapeutic measures. In the chapter on the cornea he describes a form of corneal necrosis in lupus in which a necrosis of the central portion of the cornea took place, in the form of a large ulcer with clean-cut edges, which slowly deepened and eventually perforated with prolapse of the iris, the whole course taking about a year.

In the chapter on choroidal tubercle he describes pigmentary changes surrounding tuberculous masses occurring as the result of local reaction after tuberculin injections, and he ascribes some cases at least of shrinking of the sclera in tuberculous scleritis as due to the same cause, e.g., excessive local reaction following tuberculin injection.

Altogether the book is a careful presentation of the facts. It is well arranged and contains evidence of much thought and painstaking observation. It is based on a large experience and will well repay study by anyone dealing with tuberculous disease of the eye.
BOOK NOTICES

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