

tion and treatment and as a psychopathological theory. Instead, he receives detailed lists of these methods and ideas, together with some criticism which is mostly sensible but far too perfunctory and narrow in compass. Indeed, the reader is largely left to assess for himself the value that should be placed on conditioning methods and theory compared with other methods and theories in psychiatry.

MALCOLM PIERCY.

Psychopathology of Perception. Edited by P. H. HOCH and J. ZUBIN. Grune and Stratton. Pp. 336. \$12.50.

This is the latest volume in the well-known series of reports of the annual meetings of the American Psychopathological Association. As such it contains a number of papers on different subjects linked to the main theme of the meeting and interspersed with discussions. Its chapters are grouped under three headings: Neurophysiology of Perception: Psychopathology of Pain, Taste and Time: and Perception under Special Conditions.

In the first part, the articles include an erudite discussion of the possible functions of the rhinencephalon by Klüver, a method of studying the cerebral sensory responses in man, a review of Russian work on interoceptive conditioned reflexes, and an information system approach to the organization of motor activity. These articles are followed by a discussion which for some reason deals first with a chapter on time judgment contained in the second part of the book. In addition to this chapter on time judgment, the second part contains a discussion of the quantification of pain by Beecher, which adds little to his previous contributions, and a highly technical article on taste perception which contains the interesting suggestion that the genetically determined ability to taste certain bitter substances may be related to susceptibility to some drugs.

Lewis discusses depersonalization in the first chapter of the last part. It is clear that he includes under this heading phenomena which would be given different names, for instance, depressive nihilism or schizophrenic autism, by psychiatrists in this country. An attempt is then made to relate the phenomena to brain activity. This last section also contains reports on the influence of suggestion on the hallucinations reported during sensory deprivation experiments, on perception during sleep, on the effects of early deprivation of patterned input on the later behaviour of drugs, with a note which suggests that it is unlikely that these observations can be generalized to other species, and a discussion of the relationship of perceptual defence mechanisms, as examined by the

experimental psychologist, to defence mechanisms as detected by the clinician; this, in the reviewer's opinion, is the best thing in the book. The last chapter is the Presidential Address in which Professor Cameron describes and summarizes his work on the effects of verbal repetition on psychiatric patients.

This book has attempted to concern itself with abnormalities of psychological function of the type which can be detected by the experimental psychologist or physiologist, rather than with the description of phenomena associated with the name of Jaspers, or of mental processes and interactions associated with psycho-analytic writers and usually described as psychopathology. It is, of course, legitimate to call abnormalities detected in the laboratory pathological or psychopathological, but perhaps some separation of terminology for these approaches will be necessary in the future. Unfortunately this book has largely failed even in its apparent aim. There is not much psychopathology in it at all, and it would be better to regard it as a source of discussion as to the possible methods to be used and first steps to be taken in establishing a psychopathology. Therefore, it will probably have little attraction for the general psychiatric reader, but will be required reading for those whose object is to pursue further investigations into these aspects of perception.

F. G. SPEAR.

Mach Bands: Quantitative Studies on Neural Networks in the Retina. By FLOYD RATLIFF (The Rockefeller Institute, New York): San Francisco: Holden-Day, Inc. 1965.

As a philosopher, mathematician, psychologist and physicist, Ernst Mach was so far ahead of his 19th century readers that his work only became fully appreciated over half a century later. Dr. Ratliff's book is directed to advanced students in the psychology and physiology of vision with a good mathematical background, and the reviewer found several parts of the book quite difficult. The first chapter of some 30 pages is really a biography of Mach, who was born in 1838 in Moravia of a gifted and liberal family. The well-written and lively biographical notes are framed in the philosophical and political climate of the 19th century Austrian life. It is difficult to decide, even after having gone through this book, whether Mach's discoveries in physics and his concepts on the meaning of objectivity were, in fact, a way to escape from the excessive narrowness of the physical and psychological disciplines.

The second chapter of this book is devoted to the Mach Bands; in terms not only of his original observations but also of the large amount of psycho-

physical and physiological investigations that later grew out of Mach's work. This chapter, in fact, is a general review of the literature, which is, however, extremely well digested and clearly expressed. The third chapter is on mathematical models of neural networks, and includes discussions on the studies of Huggins and Licklider, and of Bekesy; of both Mach and Fry, of Hartline and Ratliff and of Taylor. Although this chapter is in part rather difficult, it is possible to recognize a fair degree of self-criticism in the author when referring to some of his own previous work. The fourth chapter deals with the functional significance of inhibitory interaction, and in a way represents the key to Ratliff's views on the understanding of the organization of complex receptive fields such as the retina.

The fifth chapter discusses the relationship between appearance and reality as a crucial issue for the theory of knowledge. It is an entertaining and tantalizing chapter showing the impact of Mach's thinking on the evolution of Ratliff's thought.

The second part of the book consists of a translation of some of Mach's papers, with the original diagrams and illustrations. The present reviewer would be unable to comment on the fidelity of the translations, not having read the original papers. There is, however, some similarity in style between this translation of some of Mach's work and the rest of the book by Ratliff, which is not surprising in view of the deep admiration of the Ratliff of today for the Mach of a century ago.

G. PAMPIGLIONE.

3. MENTAL DEFICIENCY

Down's Anomaly. By L. S. PENROSE and G. F. SMITH. London: J. and A. Churchill, Ltd. 1966. Pp. 218. Price 42s.

This excellent and beautifully illustrated book should prove to be a classical work. It is very readable, and covers in a most comprehensive way clinical, psychological, biochemical and cytogenetical aspects of mongolism. There is a chapter on treatment, including a section on genetical prognosis.

In the preface, the authors express their feeling that although it was their aim to present the data as objectively as possible, their own interests had "no doubt unavoidably introduced bias". The approach, in fact, is essentially biological, as would be expected from the authorship of Penrose, but, characteristically of his writing, a scrupulously fair picture is presented, complete and uncoloured by subjectivity. The apology in the preface for possible unevenness in

treatment of various parts of the subject seems superfluous.

It is interesting that despite the title of the book, the term "mongolism" is used throughout. This is a traditionally used term for the condition, and has advantages, including those of verbal economy and of not being eponymous. It is well-known nowadays that the term is used in this context without racial connotation, and it is so widely accepted that parents have been confused and even distressed when an alternative name which they did not understand has been used for their child's condition. As the authors point out, the term "mongolism" has been used extensively in the world literature, and there has been no general agreement on an alternative. Therefore it seems rather a pity that they preferred an eponymous variation for the title of the book, though this pays homage to the memory of Langdon Down in the centenary year of his classical description.

As Penrose himself has pointed out, for many years it has seemed that mongolism must hold a very special position in medicine. "It does not fit in easily with classical pathology; everything in the body is morphologically a little out of the true, and each case varies somewhat from every other in diagnostic points in spite of a mysterious similarity between them all." (Penrose, 1962). Since the time of Langdon Down's description the syndrome has been a source of fascination, and a great variety of aetiological theories have been put forward. In 1932, Waardenburg suggested that a gross chromosomal defect might give rise to the condition. It was not, however, until 1959 that Lejeune, Gautier and Turpin in Paris established the presence of an extra chromosome in the cells of mongols, thus distinguishing mongolism as the first syndrome in man to be associated with a demonstrable chromosomal defect. During the past seven years, since this discovery was made, a vast amount of literature has accumulated bearing upon the cytogenetics of mongolism and reflecting concentration of research in this area. In a very lucidly written chapter on cytology, Penrose deals with this vast new field of knowledge. In contrast, one is struck by the relative paucity of existing knowledge in certain other fields relating to mongolism, such as neuropathology. Mongolism provides a kind of natural experiment or model whereby the physical and psychological concomitants of a chromosome defect can be studied. It is to be hoped that the cytogenetic breakthrough will give impetus for research to be done in those fields where information is lacking.

This book has been written to stimulate further researches. The authors express their hope that it will be useful as a reference manual for students, physi-