interest by Thomas Young, Herman von Helmholtz, Ewald Hering, Adolf Fick, Christine Ladd-Franklin and Mary Collins. The second part aims at a survey of more recently accumulated data from Hecht, Houston, Granit, Willmer, Hartridge and others. The papers selected are interesting ones, and the reader's appetite for more is aroused by the list of references given at the end of each short chapter. The book fits nicely in the pocket, as if designed to be brought out for the occupation of spare minutes; and as most of the papers are of general interest it will appeal to a variety of readers. However, since no final conclusions appear, the reader whose curiosity has been seriously awakened will have to go to the library after all.

G. PAMPIGLIONE.

Conditioning and Learning. By E. R. HILGARD and D. G. MARQUIS. Revised by G. A. Kimble. London: Methuen & Co., Ltd., 1961. Pp. 490. £3.

The first edition of this book justly won a high place among the most valued of psychological texts. Twenty years later, it reappears a good deal larger and heavier, having been extensively revised by Professor G. A. Kimble, who must be congratulated on a clearly written presentation and selection from a vast body of published material. The book contains a glossary of technical terms. The summaries at the end of each chapter are an excellent feature.

The bulk of the book is constrained by forces that have dominated American research into learning during the past 25 years. So many of the experiments have been conducted solely to score some rather trivial point for one or other rival theory. Rats busily engaged on bar-pressing and running mazes have almost filled the horizon, and the jargon spills over when, for instance, we are told that "Kuenne ran four groups of children" (human ones). Any reader unfamiliar with "the generalization of secondary reinforcement across drives" or "secondary reinforcement based on negative primary reinforcement" can read all about it in this book. In number of references, Spence wins from Hull by a clear head. The tradition of behaviourism is accompanied at times by a rather quaint biological outlook from which gives rise to such phrases as "the responses may be implicit internal reactions, conceivably of the central nervous system".

A reference to Bryan and Harter (1897) persists in the new edition, but it is disappointing that in such an important book no mention should be made of the more modern researches into the learning of human skills, and that so little acquaintance is shown with work published outside the U.S.A. One might have thought that J. A. Deutsch would find a place, and that Eysenck might have provoked a few sentences of discussion and not merely a bald reference. Masserman's view that "conflict" between hunger and fear is critical in the development of the experimental neurosis is not challenged by any reference to Wolpe's paper in the *British Journal of Psychology* 1952. The work of ethologists on learning early in life is mentioned, but the treatment is scanty. One of the most useful chapters is that on "Mechanisms of Reward", in which modern work on stimuli alone (such as taste or sexual sensations), or direct brain stimulation alone, as adequate reinforcing agents, is reviewed.

In revising this book, Professor Kimble has done a necessary task, and done it well. I felt that he himself was aware that a new era, freed of some of the former rigidities and narrow preoccupations, was dawning. Here and there, he permits rats to feel "eager". The observable stimulus and response are no longer the sole occupants of the stage; that the animal must "pay attention" in order to learn is no longer a naughty heresy.

The final chapter is called "Applications to Personality". The clinician cannot but be aware of the deficiencies of this interpretation of human behaviour, yet he must respect the admirable way in which this very difficult subject is presented, and, if he has also read Eysenck's equally lucid essays on the same theme, he may be led to examine the contrasts.

IAN OSWALD.