able. Photographs of heavy seas, of wave patterns, and of ice in the sea are particularly striking.

The part dealing with meteorology is well arranged in a manner which guides the reader from the simpler to the more complicated concepts. The progress made in the understanding of the physics of the atmosphere is brought out clearly, and the need for much more information is repeatedly stressed. Disturbed by the fact that the mysticism of the atomic physics appears to appeal strongly to people, the author pleads that "we can not afford to let the coming peace bring again such a retreat from the reality of earth, sea, air and the human mass."

A few details must be criticized. In the section on ocean waves, the statement that "breakers can occur in water much deeper than a wave-length, although a depth of about half a wave-length is more usual," is in error, because the depth of breaking depends principally upon the height of the breaker and not upon the wave length. Also, the author contradicts himself implicitly on the following page.

The chart of the ocean currents of the world gives the erroneous impression that the entire current which flows through Drake Passage continues along the coast of southwest Africa, whereas actually by far the greater mass of water is part of the Antarctic Circumpolar Current. There are also other details in this chart which are in error. An equally simple presentation could have shown the features correctly.

In spite of these and some other objections, the book is recommended for a large public because of the good arrangement of the material and the excellence of the illustrations.

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Psychology for the armed services. **Edwin G. Boring (Ed.). (Prepared by a Committee of the National Research Council.) Washington, D. C.: The Infantry Journal, 1945. Pp. xvii + 533. (Illustrated.) $3.00.**

Psychology is a point of view which this timely text brings to bear on the manifold problems of war. Here the psychologist regards himself as a human engineer and presents his discussions of human capacities and limitations as other engineers might do for their materials. In past ages every captain of a military group of necessity has had to think about his men, their training, discipline, fighting strength, reactions to each other and to the enemy, and of home conditions left behind. World War I brought many psychological factors to the attention of military leaders, and the general public became conscious of these matters. This arousal was to be expected from the general advance of the science of human behavior. In part, also, it was due to the promptness with which American psychologists, following the declaration of war by the United States on 6 April 1917, organized themselves to promote the useful applications of their science within our Armed Forces. The dozen or more active committees then formed under the jurisdiction of the National Research Council made notable contributions, but work in these fields was largely stopped in November of 1918.

The second World War witnessed an enormous expansion in military psychology. In Germany the developments constituted a part of the Nazi scheme of preparation. The Nazi Government established a psychological general staff group that functioned under their high command through the Ministry of Propaganda and the secret police. There were set up divisions for research, tests, defensive morale, and offensive morale. In the United States the reorganization of psychologists for military purposes took place as an emergency measure with slow beginnings late in 1939. The Navy and the Army reacted promptly to the needs as they became revealed. They welcomed the assistance and consultation of psychologists, and presently were inducting them in wholesale lots and even making arrangements to train more of them. Finally, there was a total of approximately two thousand psychologists devoting full-time work to the war, in addition to those not in uniform who were aiding in research and other allied activities.

The unique psychology text under review is not a history of the participation of American psychologists in the war just ended. This book appeared too early to record the technical achievements and advances recently accomplished in the realm of military psychology. Most of these developments are still not released for publication. The significant and basic contribution made by this volume is its ordered and integrated presentation of the principles and main facts of psychology as they have bearing on, and application to, the problems of the military man, soldier or sailor, general or admiral. Dr. Boring, with consummate skill and with a background of learning and experience that has eminently fitted him for his task, has edited[1] a book which, in nontechnical language and great clarity of style, presents known facts about human traits and capacities and describes the special techniques that have been used in the past for assessing human capacities and controlling human behavior. Through a multiplicity of well-chosen examples he has spared no pains to show how these psychological concepts and techniques are directly applicable to the situations imposed on the individual by the military life and régime. He reveals how and where new techniques peculiarly applicable to the military situation develop or tend to develop.

The main body of the text begins with a consideration of man's sensory and perceptual equipment viewed as military resources. The general facts of vision and visual perception are presented clearly and authoritatively; then promptly the discussion heads toward concrete military problems having to do with vision, as, for example, in height-finding, the stereoscopic examination of reconnaissance aerial photographs, and the adaptation of the eye for night vision observation. There is an excellent chapter on color and camouflage, about which Dr. Boring writes with great competence, since he served

[1] This volume was prepared by a committee of the National Research Council composed of the following individuals: G. W. Allport, W. V. Bingham, I. L. Child, Col. J. I. Greene, E. R. Guthrie, H. S. Langfeld, Col. E. L. Munson, Jr., Marjorie Van de Water, and E. G. Boring, *chairman*. Various collaborators prepared some of the materials for thirteen of the twenty-four chapters. Eleven chapters were written by Dr. Boring.

during the war as a consultant in this field. The discussion is supplemented by a dozen or more well-chosen photographs, mostly of military origin. The physiological and psychological facts about the ear and hearing gleaned from long research in these fields are related to problems of deafness, malingering, telephonic communication, the effects of noise, and sound camouflage.

Two chapters on working efficiency deal with physical conditions, such as temperature, altitude, alcohol, tobacco and other drugs, and also with the influence of work habits, sleep and boredom in relation to fatigue and accidents. The seven rules given for determining the best method of work in any operation deserve wide consideration in the postwar period as well as in the emergency of total war.

Three chapters are devoted to selection of men, learning, and Army teaching, respectively. These deal with general ability, special abilities, jobs, individual differences, and the technique of classification and assignment; the nature of learning, reinforcement and inhibition, study, rapid reading, memorizing, and recognition.

About one hundred pages are devoted to the treatment of motivation and morale, personal adjustments, emotions, sex, and leadership. The primary and secondary needs of the individual are clearly and adequately described. His methods of meeting these needs are discussed and compared. Particular attention is given to frustration, its frequent occurrence under military life, and the ways in which it may be dealt with. The chapter on emotions centers on fear, fighting fear and anger, and the psychological bases for their use and control. The review of sex needs and problems is more frank, objective, and devoid of platitudes than has heretofore been the case in elementary psychology texts in the English language. The psychological principles underlying the acceptance of leadership and the efficacy of leadership have often been written about, but in a single chapter of twenty pages this subject has probably never been covered more comprehensively.

The last hundred pages of *Psychology for the armed services* deal with those aspects which arise out of social psychology, such as rumor and its control, panic and mobs, the assessment of public opinion, its technique and reliability, propaganda and the methods of psychological warfare, and the differences among the peoples of the world.

This text was preceded by two earlier volumes, both pocket-sized books prepared under the direction of the same committee of the National Research Council: *Psychology for the fighting man,* edited by E. G. Boring and Marjorie Van de Water, and *Psychology for the returning serviceman,* edited by Irvin L. Child and Marjorie Van de Water, both sold in large editions. *Psychology for the armed services* represents the consummation of the objectives set by the committee. It covers more thoroughly many of the subjects treated in the two earlier volumes. There is a very adequate index, and for each chapter, except the summary, an annotated bibliography is supplied. There are many concise summaries and sets of psychological rules. They are not paraded, even in the index,

but must be sought out in the contexts where they occur. During the next few years when former GI's form a large segment of our college population, this book will find wide usefulness as a text for beginning courses in psychology and will be outstandingly productive of class discussions. But it will also find a place on the bookshelf, within arm's reach, of many a military man and his industrially-minded brother.

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Scientific Book Register

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