who have a real need for it from buying it. But these are minor criticisms which can in no way be leveled at the author. All in all, this book is a masterpiece of thorough and comprehensive scholarship that every student of vertebrate evolution will want to own.

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Textbook of bacteriology. **(14th ed., rev.) Edwin O. Jordan and William Burrows. Philadelphia: W. B. Saunders, 1945. Pp. xvii + 909. (Illustrated.) $7.00.**

In preparing the fourteenth edition of this textbook the author continued the process of rewriting begun in the preceding edition and has achieved a considerable degree of transformation of the book into a text for medical students, both by the general emphasis on medical phases of the subject throughout and, more specifically, by introducing the discussion of the methods of bacteriological diagnosis, so conspicuously absent in the preceding editions. The omission from the previous edition of such important topics as antibiotics or iso-antibodies has been corrected, although in the presentation of the latter subject the significance of the important antigenic components of human erythrocytes other than the three major type-antigens is not discussed.

The organization of the material has been greatly improved in many instances through the adoption of a more logical sequence. Thus, for instance, the cholera vibrio is now discussed in connection with enteric organisms instead of having been placed with spirochetes. However, this process of organization was not followed in Chapter 26 or in the instance of venereal diseases, where gonorrhea is discussed on page 350, chancroid on page 473, syphilis on page 681, lymphogranuloma on page 823, and granuloma is mentioned only in the footnote on page 824.

Considering the limited space available, the new chapters covering the subject of medical mycology and medical parasitology, respectively, are excellent. Descriptions of organisms are clear and concise, yet they include most of the recent material in these fields.

The format of the book is commendable, the index is good, and the illustrations are unusually well reproduced.

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Russian-English scientific-technical dictionary. **A. Bray. (Ed.) New York: International Universities Press, 1945. Pp. xvi + 551.**

The publication of this dictionary fills an urgent need of readers and translators of Russian scientific and technical material. Despite increasing interest in Russian scientific literature in recent years, access to it has been impeded by the absence of a general Russian-English technical dictionary. The Russian-speaking reader of English material has been very fortunate in having a plentiful supply of dictionaries to meet his needs. The English-speaking reader, however, has had to guess the possible meaning of a word from the context and then check his guess against English-Russian technical dictionaries. Bray's new dictionary is a belated acknowledgment of the importance of scientific and technical work in the USSR, even though it ignores the critical fields of medicine and biology.

The present volume, containing 20,000–25,000 terms, is not as complete as the companion *English-Russian technical dictionary*, a 60,000–65,000-term volume released by the same publisher in 1941. This may be explained in part by the fact that the Russian technical vocabulary does not contain as many synonyms as does the English. However, some of the Russian terms which appear as equivalents of English terms in the older volume do not appear in the Russian-English work. The present volume does have a complete bibliography of sources and references, a matter which was omitted in the previous work.

The reviewer made a random selection of fifty Russian radio and engineering terms and of twenty-five Russian textile terms from a list of terms which had caused him difficulty in the past year. Almost all of the radio and engineering terms were found in this book. About half of the textile terms were found, although they were unusual and not particularly important. In general, the coverage of terms of the physical sciences and technology is sufficiently complete to meet all reasonable needs and sufficiently up to date to include "bazooka" and "radar."

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Coasts, waves and weather for navigators. **John Q. Stewart. Boston: Ginn, 1945. Pp. vii + 348. (Illustrated.) $3.75.**

Stewart's book is divided into three parts: "Coast lines, terrain and routes"; "Oceanography for navigators"; and "Meteorology for navigators." The first part should be of particular value to air and sea navigators and to the interested traveler. A general classification and description of coast lines is followed by chapters containing numerous quotations from the "Pilots" and the "Sailing directions" published by the Hydrographic Office. These chapters are profusely illustrated by aerial and ground photographs which clarify the features emphasized by the author. The reader ought to have a fairly good knowledge of general geography in order fully to enjoy the descriptions, because the examples are selected from all parts of the world and the author takes the reader from Peru to the coast of Maine and back to Patagonia without stopping for breath. The plan followed serves, however, to bring out the similarities in the character of coast lines within widely separated regions.

The part on oceanography represents a welcome addition to popular scientific literature, because few texts contain much information about the character of the ocean waters, the tides, and the ocean currents. The chapters on tides should be particularly helpful to the navigator who wants more information as to the contents of tide tables and the character of the tides. The section on ocean waves will need some modification when the results of studies conducted during the war become avail-

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.

H. U. SVERDRUP

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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.