of the potassium phosphate was found to be around 0.01 M.

We can now report that ethyl alcohol in combination with potassium phosphate (pH 7) gives an excystment medium as potent as the optimal yeast extract, and that the concentration of potassium phosphate required in this case is 0.0001 molar, or 15 μg/ml. This quantity of the phosphate might well be present in complex excystment media, such as soil extract, urine, and organic infusions. Three-tenths M ethyl alcohol without phosphate kills most or all of the organisms as they emerge from the cyst membrane; 0.00001 M potassium phosphate completely protects them from injury.

In a medium composed of 0.3 M ethyl alcohol, and 0.0001 M potassium phosphate in distilled water, 50% of the organisms were fully differentiated and have emerged from the cyst membranes in 100 min at 24°C.

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Book Reviews

General psychology. John E. Bentley. Philadelphia-London-Montreal: J. B. Lippincott, 1947. Pp. xvi + 389. (Illustrated.) $3.50.

This book is designed as a text for the beginning student in General Psychology, special consideration being given to the needs of the student nurse. The contents are presented in 5 major divisions: the organic basis of human psychology, sense activity and experience, learning, personality adjustment, and applications of psychology to nursing. This text places greater stress on sensory and perceptual processes than is found in many books now offered for the beginning student. The discussion of the nervous system and the senses together occupy one-fourth of the book; perception, memory, and reasoning also receive extensive treatment. While nearly all topics customarily found in textbooks of general psychology are considered here, some receive only the briefest mention, e.g. the conditioned response.

The diagrams are exceptionally fine and should prove of great value to students. A glossary and supplementary section, which provides a few lines of material about important people cited in the book, should also be of help. Much of the writing, however, is abstruse and so condensed as to require very close attention on the part of the beginner. General statements are offered without supporting evidence. Perhaps because the author was chiefly concerned with the student nurse, much attention is given to disorders and maladjustments, in addition to the normal functions and processes studied. Suggestions and advice are offered to the student on such matters as the improvement of memory, the relief of worry, etc. While such advice is designed to be helpful, it is presented so tersely that it fails to achieve its purpose.

Students should find the organization of this book rather easy to follow. Each of the 5 major sections and every chapter is introduced by an outline of its contents, designed to orient the student in his study. Each chapter has several major and numerous minor subdivisions, making this a textbook well designed for study purposes. Some sections, however, are broken up so fine as to contain little more than definitions. This text might well have been expanded to twice its size so that more concrete material could have been included. Some topics would benefit by more extended treatment and by inclusion of experimental supporting material.

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Radar aids to navigation. John S. Hall. (Ed.) (Massachusetts Institute of Technology Radiation Laboratory Series.) New York-London: McGraw-Hill, 1947. Pp. xiii + 389. (Illustrated.) $5.00.

Of the 28 publications planned in the Radiation Laboratory Series, this is No. 2; 33 authors have written parts of the volume. L. A. Turner was technical editor, R. A. Whitmer and R. G. Herb also helped with the editing, and many other persons had a share in assembling the material. The series bears the imprint of OSRD and NDRC, as well as of MIT, and evidently will involve as many contributors as an encyclopedia. This is understandable and necessary in a presentation of teamwork on the unprecedented scale of wartime radar development in the United States, Britain, and Dominions. There is a general Foreword by L. A. DuBridge, as well as the Preface by J. S. Hall, who regrets that "the authors have not always found it possible to present this information in nontechnical form." Description is facilitated by many photographs and diagrams. Throughout the book the editors have achieved a remarkable uniformity of style.

This highly authoritative book is invaluable for the navigational engineer, but necessarily is too inclusive and condensed to appeal to all ordinary navigators. There are four parts. Part I is a general introduction, discussing principles of radar and of other radio navigational methods, including radio ranges, Sonne, u-h-f aids, direction finders, and the various once-secret systems allied to loran, including Gee, "skywave-synchronized" loran, and Decca. Shoran is mentioned in a later chapter, under Radar Aids to Mapping. The short comment on celestial navigation lists its disadvantages but not the

matching disadvantages of radio navigation, which likewise can be blocked by bad "radio weather."

Part II deals in detail with Airborne Radar, Part III with Ground-Based Radar, and Part IV with Shipborne Radar. There is a 7-page index.

Perhaps the general reader will find most interest in the photographs of the PPI, which offer a type of map which is still novel to most people. In particular, from airborne radar, small-scale approximate maps of built-up areas of cities can readily be secured (e.g. Fig. 3–4, Hartford and others). These well may prove of advantage to demographers and regional planners. This reviewer may be pardoned for comparing the complexity of radar in World War II, which measured to microseconds times of arrival of radio waves, with the primitiveness of our old sound-ranging in World War I, which measured to hundredths of seconds the arrival of sound waves—and which was regarded then as one of the most intricate types of combat equipment. Developments based on it have proved invaluable in finding oil-rich geological structures underground. Apart from navigation, what new peacetime successes will radar have? Already radar plays a growing role as an astronomical instrument, and the microwave techniques are contributing importantly to spectroscopy.

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Scientific Book Register

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