

tunities were provided for expounding modern developments in science to large groups in the Armed and Civil Defence Services. Surprisingly, although perhaps unavoidably, these opportunities were not taken by many men of science. Of the few Mr. Sumner was one, and "Progress in Science" is an adaptation of the lectures and demonstrations which he gave to many Service audiences. Wisely he has confined his topics to technical developments during the last few years, and among those dealt with are electrons and their uses, the electron microscope, radar, television, the betatron, atomic energy, jet propulsion, the gas turbine, plastics, chemotherapeutic drugs and plant genetics. In the concluding chapter he discusses present-day researches the applications of which are still somewhat in the embryonic stage, and ranges over a wide selection of recent work.

Of his choice of subjects little more need be said than that it has been done well and with a discriminating awareness of the interests of adults although, since plant genetics is described in some detail, the omission of sections on human and animal genetics is puzzling. Of his manner of presentation it is enough to say that he has never forgotten that he has been writing for those only slightly informed of matters scientific. The importance of this interpretation of science to human society must take its place alongside fundamental researches in such subjects as nuclear physics. It is therefore to be hoped that "Progress in Science" will be the precursor to a long series.

T. H. HAWKINS

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CURRENT RESEARCHES ON VITAMINS AND HORMONES

Vitamins and Hormones

Advances in Research and Applications, Vol. 3. Edited by Prof. R. S. Harris and Prof. Kenneth V. Thimann. Pp. xv + 420. (New York: Academic Press Inc., 1945.) 6.50 dollars.

THE third volume in the series vitamins and hormones amply maintains the standard set by its predecessors. As the editors say in their preface, "The subject matter of successive volumes will integrate more and more until 'Vitamins and Hormones' eventually becomes a complete reference to all active research in the vitamin and hormone field". The authors of the series of chapters are well chosen, and with few exceptions a high standard is maintained in each. Microbiological aspects of vitamins are discussed by Najjar and Barrett, in a chapter on the synthesis of B vitamins by intestinal bacteria, who summarize a subject of much topical interest; an article 120 pages in length (including 456 references) by B. C. J. Knight is an exhaustive review of growth factors in microbiology; amino-acids, purines, pyrimidines and naphthoquinones are discussed as well as the vitamin B complex. The threads of knowledge upon the interrelation of vitamins have been brought together by T. Moore in a suggestive article, and the influence of sulphonamides in experimental diets upon bacterial synthesis of vitamins discussed by Daft and Sebrell.

J. Warkany deals with the important problem of manifestations of prenatal nutritional deficiency.

A suggestive article upon chemotherapeutic research and synthetic oestrogens is contributed by E. C. Dodds. The mechanism of action and metabolism of gonadotropic hormones in the organism is reviewed

by Zondek and Sulman—in their words, "what happens in the interval between the administration of the hormone and the time when it takes effect in the organism?" Fifty-five pages are devoted by SubbaRow, Baird Hastings and Elkin to an exhaustive and authoritative account of the chemistry of anti-pernicious anæmia substances of liver which should be read by all interested in this subject; they show the stages in progress towards the isolation of the active factor; less than 1 mgm. from liver is now needed in place of 400 gm.

Finally, in a somewhat more physiological article, Nachmansohn deals with the theory (his own) that acetylcholine is released at the neuronal surface during the passage of an impulse. By the action of acetylcholine the permeability of the membrane to ions is increased and hence a depolarization occurs. This theory is supported with much interesting evidence, though it is naturally also meeting with criticisms.

"Vitamins and Hormones" is a book which should be on the shelves of every library, and the private reader will find it a most useful book of reference.

R. A. PETERS

ELECTRICAL CONTACTS IN COMMERCE

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Electrical Contacts

A Book of Reference for the Electrical Engineer. By Dr. L. B. Hunt, with the collaboration of E. G. Pickering, Dr. J. C. Chaston, C. A. H. Jahn, E. H. Laister, H. R. Brooker, P. M. G. Thorpe and N. A. Tucker. Pp. 124. (London: Johnson, Matthey and Co., Ltd., 1946.) 10s. 6d.

THE author states that "The purpose of this book is to place at the disposal of the electrical engineer, in a form suitable for easy reference, information which will help him to make a wise selection of material and form of contact for the majority of applications". Undoubtedly physicists, metallurgists and other technical personnel concerned with contact problems will find the volume equally useful.

In the compass of 122 pages, much of which is taken up with excellent illustrations, it is only possible to treat the complex subject of electrical contacts superficially. Accordingly, Dr. Hunt and his collaborators have limited themselves to considerations of established English practice, and in particular with the products of the firms which they serve and under the aegis of which the book is published.

The problem of electrical contacts is dealt with under three main headings, namely, "Design and Selection of Contacts", "Properties of Contact Materials", and "Contact Engineering". Under the first of these, the influence of electrical and mechanical conditions on contact life and behaviour is discussed. The second describes in reasonable detail the properties of common contact materials, together with recommended applications. "Contact Engineering" deals with various methods of making different types of contacts.

The author has, perhaps wisely, refrained from discussions on the fundamental reasons for the service deterioration of contacts, and the numerous compositions listed serve to emphasize how little is really known of this subject.

There are a number of omissions, and, in particular, it is surprising to find no reference to lubricants for electrical contacts.

EDWIN RHODES