Book Reviews

The Hypophyseal Growth Hormone, Nature and Actions. An International Symposium. Richard W. Smith, Oliver H. Gaebler, C. N. H. Long, Eds. Blakiston Div., McGraw-Hill, New York–London, 1955. xv + 576 pp. Illus. $12.

This volume records the proceedings of an international symposium on the nature and action of the adenohypophyseal growth hormone. The splendid success of this volume in communicating the progress made in the basic laboratories and the various clinics on adenohypophyseal growth hormone is the result of myriad contributions made by some 300 scientists from Europe, South America, Canada, and the United States of America. Of paramount significance is the fact that many scientific disciplines, including those of anatomists, physiologists, biochemists, pharmacologists, zoologists, and endocrinologists, were focused on the complexities of the growth hormone problem. I wholeheartedly go on record with the thought that this wide representation of the various fields of the sciences had a great deal to do with the tremendous success of the symposium.

The Hypophyseal Growth Hormone, Nature and Actions records well the progress made in this truly important area of medicine during the past 33 years. In this volume, no tacit assumptions were made. The early work of J. A. Long and H. M. Evans, P. E. Smith and B. Houssay creates a very stable foundation upon which the book develops into growing pillars of information for both the experimentalist and the clinician.

This encyclopedia of information on growth hormone is divided into five sections: "Bioassay, preparation, and physicochemical properties of growth hormone"; "Effects of growth hormone on certain structures"; "Growth hormone and energy sources"; "Growth hormone and cellular systems"; and "Influence of growth hormone on the mammary gland and on human metabolism." Each section is divided into a number of subsections, thus covering the main topic in a most exhaustive manner. The main currents of the scientific method are thoroughly explored *in extenso* throughout all sections of the book. In addition to bringing an individual up to date on growth hormone, the book unfolds a precise view of the evolution of a very exacting scientific problem.

The last chapter, by C. N. H. Long, shows a remarkable synthesis of many of the pertinent remarks made throughout the text. The more perplexing and unsolved aspects of the whole problem of adenohypophyseal growth hormone seem to be the following: (i) the rate of release and utilization of growth hormone throughout life; (ii) the nature of the phenomenon of endocrine control of tissue sensitivity to growth hormone; (iii) a precise detection method for the assay of this hormone in blood; (iv) the duration of the activity of this substance in the body, and (v) the preparation of a growth hormone in indisputably pure form. The lack of the latter strongly indicates that until such a purified preparation becomes available, it will be difficult to develop an assay method with sufficient sensitivity to detect this hormone in body fluids. In the closing remarks, Long summarized the views of Selye and Best. Selye's concept, that somatotropin (growth hormone) causes the release of mineralocorticoids, seems to be getting more confirmation from Beck's statements. Best, of course, still champions the idea that insulin is the excitor of protein anabolism and growth. According to Best, the so-called "growth agent" is isletotropic.

Like most monumental works of science, additional questions are raised and viewed for some very stimulating thought. The wise teachings and experience of Long and E. B. Astwood bring the volume to a most successful finale: "The papers given . . . have emphasized what should never be forgotten, which is that the hormones do not initiate cellular reactions or metabolic transformations. These are intrinsic properties of the cells alone and the hormones merely alter the rate at which certain changes occur. Indeed, in some instances the maximal change in activity produced by a hormone may be only a small fraction of that going on in the unstimulated cell. Nevertheless, these slight displacements, if long continued, can lead to profound overall changes."

In the final analysis, it can be said that this is a truly outstanding volume; the editors, essayists, discussants, and chairmen will long be remembered for bringing these facts together. The publisher is to be congratulated for the excellence shown in the production of the book. The only significant criticism that could be raised is one dealing with the lack of an index. The editors have compensated in part by supplying a rather good table of contents. The indexing of such a volume would be tremendous. Undoubtedly it would raise the cost of the volume, and it is believed that this factor may well have been responsible for its omission.

I thoroughly enjoyed the book and predict that this wealth of information will be useful in the hands of many communities of scholars where scientists are involved in the elucidation of the complexities associated with our present-day knowledge of growth hormone.

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Protective Coatings for Metals. R. M. Burns and W. W. Bradley. Reinhold, New York, 1955. xiv + 643 pp. Illus. $12.

This book is one of the American Chemical Society Monograph Series (No. 129). The authors are members of the research staff of Bell Telephone Laboratories. The book presents primarily information that will enable those with problems in protection to select the correct type and thickness of coating for a given application and environment. It is, however, much more than a handbook of data, since the topics covered are introduced with clear discussions of basic background information.

The emphasis is mainly on what may be classified as natural corrosive environments, such as the atmosphere, sea water, and soil. More specialized problems, such as coatings for use at high temperatures and on chemical equipment, although they are not entirely neglected, are less fully treated. Methods of production and application of coatings are indicated, but the book does not serve as, and is not intended to be, a manual on this aspect of the field. Adequate references are given on methods for applying coatings.

The scope and content of the book are indicated by the following summary of chapter headings: principles and theory; surface preparation; types of coatings and methods of application; sprayed metal coatings; production, properties, and protective value of the full range of metal coatings, from zinc to the noble and rare metals; test methods for metallic coatings; organic coatings, including chemistry and composition, performance and evaluation, and application and use;