

THE THYROID

A Fundamental and Clinical Text

WITH SIXTY CONTRIBUTORS

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Preface

THIS BOOK is intended for those who must deal with the problems of thyroid function and thyroid disease in man. It is designed for use in the clinic and in the basic science laboratory connected with the clinic. The information made available has been brought together from widely diverse sources, and in some instances is reported here for the first time. Many subjects have been presented both in broad outline and in more comprehensive detail to meet differing requirements. It has been planned to provide sufficient documentation to satisfy most needs and, for more exhaustive requirements, to provide a bibliography adequate enough to initiate a search of the literature.

The introduction of a book into a field of clinical medicine today requires considerable justification. In the thyroid field particularly, there already is a profusion of books including the almost classic works of Means in this country and of Joll in England, recently and capably revised by Rundle. Nevertheless, the recent growth of medical knowledge in general, and about the thyroid in particular, appears to have created need for a new volume constructed on a somewhat different basis from those of previous works.

Barry Wood has compared the growth of medical information to that of bacteria. Bacteria show a lag at the beginning of growth and then multiply at a logarithmic rate. Wood considers the growth of current-day medicine to have reached the logarithmic phase. The accumulation of data about the thyroid provides a good example of this acceleration. One author of a recent review claims to have unearthed 3000 new references pertaining to the gland and published during the single year before he wrote his article. The *Quarterly Cumulative Index Medicus* offers about 7800 references to the thyroid in the past decade. More than this, the thyroid field is permeated by contributions from the cardiologist, neurologist, muscle physiologist, and many others, bringing the highly unique technics of their particular specialties to bear on the subject.

It is evident that the ability of any one individual to follow progress in all directions at once has all but vanished. As a consequence, marked subspecialization of interest has developed and advances have come to depend upon the interchange of information among many specialists, each providing his own orientation.

This trend has suggested that the information in a book about the healthy and diseased thyroid should also be subjected to the process of sifting and appraising through many eyes. The various specialists present material with which they have had direct experience and the editor functions as the overseer to provide orientation and preserve the inherent orderliness of the entire subject. The total clinical and research experience made available in this way exceeds that of one person alone. Each topic can be subjected to the critique of a man who has worked intensively with the problem. Finally, a book of this sort can be readily kept current, because of the authors' continuing contact with investigation and the fact that there are no large sections to be rewritten by any one individual.

Every effort has been made to make available sufficient basic and clinical knowledge to satisfy curiosity about either of these aspects. For example, sections on the fundamental properties of radioiodine that permit the use of the isotope and on the instrumentation that facilitates such use are presented as well as a discussion of the clinical application. Most basic sections are separated from the clinical material, but are incorporated with it where this has seemed reasonable.

The fundamental aspects of thyroid function in man and the mechanisms which control the activity of the gland; the biochemistry of the hormone; and histology and comparative anatomy make up Part I. The mechanisms of action of the antithyroid drugs are included because of the intimate relationship of their effects to the problems of basic physiology.

Part II presents the laboratory methods which supplement the clinical appraisal of thyroid secretory activity. The presentations of the basic principles involved in radioiodine usage and the instrumentation which is employed are included within the laboratory section and are available here for later reference when the therapeutic as well as diagnostic uses of the isotope are considered.

The diseases of the thyroid are considered in Part III. The disorders first described are those in which the level of thyroid hormone in the circulation and tissues is within normal limits—euthyroidism. After this come the derangements in which hormone levels are increased—toxic

goiter or hyperthyroidism—or decreased—hypothyroidism or myxedema. The effects of hyperthyroidism and of hypothyroidism upon the individual body systems have been subjected to fairly detailed analysis.

The plan to arrange disease by functional categories breaks down in relation to inflammations of the thyroid including the peculiar composite entity, chronic thyroiditis. Inflammations of the thyroid tend to inactivate the gland but chronic thyroiditis is almost as often associated with evidence of hyperthyroidism as with hypothyroidism. The inflammations have been placed under a separate heading on this account.

Before the disease states are presented, several important preliminary subjects are considered in Part III. The normal and abnormal developments of the gland are described, together with the surgical anatomy and a method of physical examination that is an essential procedure because of the accessibility of the thyroid to this approach. The pathology is presented in its entirety in the introductory sections and is not dispersed among the various diseases. A concept of change in thyroid disease emerges in this way which could not otherwise become evident.

A major goal throughout the volume has been to assess the validity of the facts on which current information or procedure is based. Corroborative information is often documented beyond reasonable doubt, but too often is based only on speculation or custom or is wanting altogether. The fact that a critical appraisal has been accomplished is a tribute to the contributors. The world today, as in the past, is threatened by prejudice, of which racial, social, and economic prejudices are but a few. Equally influential, but less well recognized, is the prejudice of "experience," derived from uncritical or uncontrolled observation, from the word of an "authority," or from emotional bias.* Fortunately there are those who are willing to give time and effort to seek out and correct such distortions of the truth.

Considerable aid has come to the editor from several sources. Dr. John Stanbury has been particularly helpful. The members of the Thyroid Clinic at the Presbyterian Hospital need recognition for their influence upon the formulation of many of the views presented herein. Credit must be given to the patience and forbearance of the many contributors who tolerated changes in style and length of manuscript in the interest of creating an integrated volume out of a series of individual essays. Mr. Paul B. Hoeber has kept a wary eye on the proceedings. The editor's

* "Conviction is by no means devoid of emotion but it is a disciplined and differentiated emotion, pointed to the removal of a realistic obstacle. By contrast, the emotion behind prejudice is diffused and overgeneralized, saturating unrelated objects."—GORDON W. ALLPORT: *The Nature of Prejudice*.

wife has acted as guardian of clarity, upon the thesis that even the layman should be able to read and understand a well-written article. Miss Anne Powell, of the librarian staff at P. & S., was extremely generous with her time. Finally, Mrs. R. Levine and Mrs. K. Sorensen were more than patient with the secretarial details.

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