

VOLUME 1
NORMAL HEART AND VESSELS

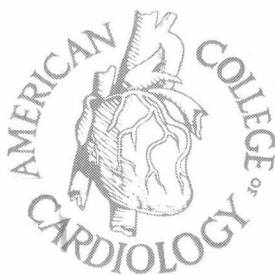
CARDIOLOGY

An Encyclopedia of the Cardiovascular System

SPONSORED BY THE AMERICAN COLLEGE OF CARDIOLOGY

EDITED BY ALDO A. LUISADA, M.D.

FOREWORD BY ASHTON GRAYBIEL, M.D.



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CARDIOLOGY

An Encyclopedia of the Cardiovascular System

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- PART 2** Cardiovascular Functions

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Foreword

This work is at once a landmark in clinical cardiology and an indication of the Golden Age of Medicine in which we now live. Because wondrous things have become commonplace, we can appreciate this age only in retrospect. From rude beginnings it is possible to trace, over the centuries of recorded history, the gradual refinement in skills, the slow accumulation of factual knowledge, and the emergence of a scientific discipline so essential to success in the walks of science. Progress, painfully slow and often faltering till late in the nineteenth century, then began to accelerate at an ever-increasing rate. Within the memory of some now living, individual triumphs in scattered departments of science combined in one mighty triumphant flourish to usher in the modern era. Epidemics, once the scourge of man, were abolished; certain diseases, once relentless in their course, were controlled; old age, once a rarity, became the rule. It is unlikely that within a comparable period of time man will ever again repeat the stupendous feat of doubling his span of life.

Cardiologists, while sharing in these triumphs, saw heart disease assume the lead as a cause of death in many countries. Thus, although gratified by the increased longevity of man, we are nevertheless challenged by the disclosure that the cardiovascular system is now the weakest strand in the thread of life. Indeed, its relative importance in the lives of men appears destined to increase, for there is nothing in sight pointing to a major break-through in the prevention of heart disease in old age.

In sponsoring this encyclopedia, the American College of Cardiology, dedicated to the continuing education of its membership, is simply fulfilling one of its obligations. That this particular obligation weighed more heavily on the minds of some of its officers than on others raised the question of the relative merits of different methods of postgraduate education. We cannot here record the deliberations which finally led to approval of this undertaking, but they reflected the need for putting on record the widening horizons of our knowledge of cardiovascular disease.

That the presentation of information concerning the heart and circulation requires four volumes involving upwards of 250 authors has important implications. It is evidence that narrowing of interest and progress go hand in hand, and that subdivision within the field of cardiology is well established. But this subdivision, so essential for progress, must be reconstituted for those whose clinical responsibilities cover a broad area. In effect this encyclopedia represents such a reconstitution. It contains authoritative information abstracted from an immense mass of medical literature which could not be reviewed effectively by an individual. The organization of this material is based on a logical framework

which constitutes a resynthesis of the important elements in the field of cardiology.

In using this encyclopedia, the physician must let go of his inclination to be taught, and cultivate the art of selecting new items of information and fitting them into a frame of reference dictated by his needs. This method does require a capacity for mental independence and is effective only in so far as this is exhibited by those for whom the encyclopedia is intended. Admittedly a work of this sort represents a form of communication in which there is much redundancy. At what point will the evil of redundancy equal or exceed the good contained in the message? Herein lies a very real problem with which we should be concerned in the future.

It is noteworthy that in the compilation of this work we are more dependent upon an editor than upon an author. The choice of Dr. Luisada to edit the work has been fortunate. He has exhibited not only a natural talent for this task but also the quality of persevering in the face of difficulties. To him alone belongs the credit for bringing the encyclopedia to fruition. The present handbook must be regarded as a monument to his genius.

ASHTON GRAYBIEL

Preface

This work was started as a result of a bold and far-sighted initiative of Dr. Ashton Graybiel, then president of the American College of Cardiology.

The task of editing an encyclopedia of cardiology represents a challenge which is both appealing and frightening.

Among the multitude of books of cardiology which have been published in the last 20 years, the majority belongs to the type of the medium-sized, monographic textbook written by a single author. A few have been written in collaboration by several authors. These, however, do not attempt to be complete and are, moreover, too unsystematic to be helpful. Being of the "fixed-volume" type, they are soon outdated and, therefore, forgotten.

In ancient Greece, *encyclopaedia* meant "instruction in the whole circle, or complete system of learning." In a more restricted sense, encyclopedia means "a system or classification of various branches of knowledge; a subject on which many books have been published." While many encyclopedias of the past have been of the "alphabetical type" (each word to be explained is listed in alphabetical order), others have tried to reconcile system with completeness. Thus, even in the early editions of the *Encyclopaedia Britannica*, the various sciences and arts (such as anatomy or surgery) were "digested into distinct treatises or systems." On the other hand, technical terms were explained in alphabetical order. Older encyclopedias, like Plinius's *Natural History* of the year 77 A.D. (37 books with 2,493 chapters) or *Yung-Lo Ta Tien*, the Chinese encyclopedia of 1403 A.D. (11,095 volumes prepared in four years by over 2,000 scholars), were developed according to system. The latter even included well-known books reproduced without change.

In the opinion of the editor, a modern encyclopedia of cardiology ought to have the following characteristics: (1) It should encompass all available knowledge on the heart and vessels, including history, embryology, anatomy, physiology, physical and technical methods of examination, bacteriology and pathology, clinical sciences, surgery, pharmacology and therapy, rehabilitation, and the various "allied fields." (2) It should present them in a systematic order, thus permitting easy consultation. (3) It should be of the loose-leaf type, in order to keep abreast of medical progress. It is then possible that some of the readers may prefer to call this a *treatise*.

The principle of extending the work to all kinds of knowledge in the cardiovascular field should not be carried too far in the marginal fringes of medical or technical sciences. This process would divert and distract the attention of the reader and would render consultation too difficult. Therefore, a process of selection and limitation is an important part in the preparation of an encyclopedia of

cardiology. It is likely that a four-volume, 5,000-page encyclopedia would represent the optimal size. However, practical considerations indicate a more limited approach for the first version. Therefore, a four-volume, 3,600-page size is considered for the first edition, even though gradual revision and extension over the following ten years will probably increase the size to that previously mentioned.

Several titles have been considered for this encyclopedia. The one preferred by the editor, *Encyclopedia of Cardiology*, has been discarded for fear of discouraging prospective readers. The more modest title which has been selected—*Cardiology*—emphasizes the main scope [knowledge about the heart (and vessels)] even though it has a more modest sound than the original title. The titles of the four volumes have been selected on the basis of their content.

The problem of correlation has been the rock on which many textbooks written by multiple authors have foundered. If the various parts do not follow a logical sequence; if some of them are disproportionately long or short; if some are written by obscure authors of poor talent while others are the result of the work of well-known authorities; then the whole encyclopedia has no value.

In order to obviate these possibilities, the following steps are necessary: (1) the authors selected should be among the best; (2) each should receive a carefully selected and clearly outlined job; and (3) the editors should be able to refuse, abbreviate, or send back for correction any received text. Therefore, courage, patience, and hard labor are necessary to ensure a successful literary production.

The outcome of the work depends to a large extent upon the selection of authors. Well-known authors who have left a mark in the history of cardiology are the natural choice. However, they may be reluctant to undertake a major task and, moreover, may not be able to ensure continuity on account of their age. A compromise may be represented by asking these authors to prepare the text in collaboration with one of their associates. The associate would be the natural choice for any future revision of the text. However, a different author may entirely revise a chapter at a future date.

Science is international. If a truly objective work is to be published, authors of all nationalities should be asked to contribute. The recent tremendous progress of cardiology in the North American continent may require that a majority of the authors be selected in the United States and Canada. However, numerous contributors have been selected from England, continental Europe, Mexico, South America, Africa, and Asia, so that a truly "global" representation of cardiology may result.

How much of the text should reflect generally accepted viewpoints; how much should present new ideas still awaiting confirmation? This problem cannot be solved in a general way. The viewpoint of the editor is that an intermediate position should be preferred. Texts reflecting only generally accepted views might render the entire work obsolete within a few years. On the other hand, many new viewpoints cannot withstand the test of time and are gradually discarded. Whatever the error, whether in the sense of conservatism or in that of progressivism, a loose-leaf type of work may remedy it more rapidly than any standard type of volume.

The Editorial Board has been selected with great care according to these viewpoints:

1. Inclusion of a few authorities which would help in laying down the directives of the work.

2. Selection of persons with diversified knowledge (physiology, pathology, pediatrics, surgery, etc.), so that all fields may be covered by competent editors.

3. Choice of as many young scientists as possible, in order to have a high potential of enthusiasm, criticism, and working capacity.

The final product will reveal whether these directives are sound and have been followed as closely as possible.

The publication of this encyclopedia was made possible by the continued support of the American College of Cardiology through the action of its board of trustees, by generous contributions of five pharmaceutical houses, and by the warm collaboration of the McGraw-Hill Book Company, Inc., Blakiston Division.

ALDO A. LUISADA
Editor in Chief

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