

# **E**xtracorporeal **C**irculation

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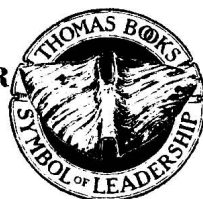
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# EXTRACORPOREAL CIRCULATION

CHARLES C THOMAS • PUBLISHER  
SPRINGFIELD • ILLINOIS • U.S.A.



CHARLES C THOMAS · PUBLISHER  
BANNERSTONE HOUSE  
301-327 EAST LAWRENCE AVENUE, SPRINGFIELD, ILLINOIS, U.S.A.

*Published simultaneously in the British Commonwealth of Nations by*  
BLACKWELL SCIENTIFIC PUBLICATIONS, LTD., OXFORD, ENGLAND

*Published simultaneously in Canada by*  
THE RYERSON PRESS, TORONTO

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*Library of Congress Catalog Card Number: 58-8414*

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## PREFACE

**T**HE DEVELOPMENT of extracorporeal circulation has been the product of work in many laboratories both in this country and abroad. Tracing back to the pioneering work in this imaginative and difficult field, it has followed the course so characteristic of many scientific and surgical advances. After many years of slow growth, groping for solutions to important practical problems, extracorporeal circulation has suddenly blossomed into a technique now widely used to bring relief to patients suffering from heart disease. It is not difficult to foresee that techniques of this type may be used for the support of acute and chronic circulatory illness and as ancillary methods in other surgical problems such as cancer surgery and organ transplantation.

A sizeable fraction of this development has been supported through appropriations voted by the Congress and allotted to the United States Public Health Service for expenditure through the National Institutes of Health. The research is most clearly oriented towards the treatment of heart disease and for this reason most of these funds have flowed through the National Heart Institute. The National Advisory Heart Council, as the senior policy-making group of the National Heart Institute, has maintained a consistent and enthusiastic interest in the development of extracorporeal circulation. In the early spring of 1957 it was their suggestion that a conference be held to discuss developments in this field.

Recommendations for research grants in this field have come through the Surgery Study Section of the National Institutes of Health because much of the research in this field was underway in departments of surgery and the practical application of extracorporeal circulation would be largely in the hands of surgeons. It was therefore appropriate that the Surgery Study Section be designated to arrange this conference. This group of surgeons, in its regular meetings, has made recommendations concerning a large number of proposals pertaining to this field.

It was our intent to hold a conference big enough to include those many individuals who have made contributions in this field. It was our desire that all individuals be invited who were working in this field with the support of the United States Public Health Service. At the same time, it was clearly to the advantage of the group to limit the size of the meeting in order to achieve the freedom of discussion that was deemed essential to its success. Also, it was our specific purpose after the meeting to draw up a brief statement as to future developments and lines of investigation which should be supported and fostered, and to publish the proceedings.

Accordingly the plans of the meeting were drawn together. A site was selected at the Edgewater Beach Hotel in Chicago. The program was drawn up and the meeting was convened on September 20, 1957, at noon.

This book brings together the formal papers and the informal discussion presented at that meeting. It was thought to be important to prepare this book with maximum speed. For this reason there has not been the usual opportunity for the authors to review their galley proofs. Manuscripts, illustrations and discussions have been prepared, printed and proofread in page form. We are indebted to all the authors and discussers for making possible this short-cut which puts the book into the hands of the reader much sooner than otherwise would have been possible. None had the opportunity to read proof on discussions. For this reason, errors may be present that otherwise would be avoided, but it is hoped that early production of these Proceedings will compensate for the errors that have escaped detection.

An important aspect of the approach to this problem has been our complete freedom of scientific endeavor. This has expressed itself both in the wide geographical distribution of workers and in the varied nature of the biological approaches being used. Any sort of standardization of equipment or of research design would therefore be most unfortunate. On the other hand, an immediate outgrowth of the meeting was the realization of a need for common modes of measurement, a common terminology and common points of reference for the development of apparatus and technique in extracorporeal circulation. For this reason, a committee

was appointed, with Dr. Frank Gerbode as Chairman, to investigate the codification of expressions, methods of comparison, terms of measurement and standards of performance. It is with pleasure and with gratitude to this committee that we are able to include their report in this volume.

The Surgery Study Section, and its Subcommittee on the Conference, wish to acknowledge their debt of gratitude to those many people who have made this venture possible. Dr. Harris Levin and Dr. Jack Milder as Executive Secretaries of the Surgery Study Section have carried out the great bulk of formal arrangements, with the able secretarial assistance of Mrs. Anna Marie Perrell and of Miss Reecie Hodgson, secretary to Dr. J. Garrott Allen. We are indebted to Mr. James B. Glaze, Photographer, University of Chicago, for the long and tedious hours entailed in the prompt photographic reproduction of the 83 illustrations prepared from the slides employed by the discussants. Thus the reader has available nearly all illustrations used and each has been keyed to the discussion. We are indebted to Mr. A. E. Wright for the excellence of the arrangements at the hotel and to Mr. Warren Green of Charles C Thomas, Publisher, who has made the rapid publication of this book possible. We wish to express deep appreciation to Dr. George H. A. Clowes, Dr. John W. Kirklin and Dr. C. Walton Lillehei, who advised the Committee on Arrangements. Most especially, all of us on the Surgery Study Section, as well as the participants in the Conference, wish to express our gratitude to the Subcommittee who organized the meeting and the program, and to Dr. J. Garrott Allen of the University of Chicago who carried out the local arrangements and who has taken on the tremendous task of editing this book with such energy, speed and effectiveness.

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