

The Laboratory Diagnosis of
Coagulation Defects

By

PIETRO DE NICOLA, M.D.

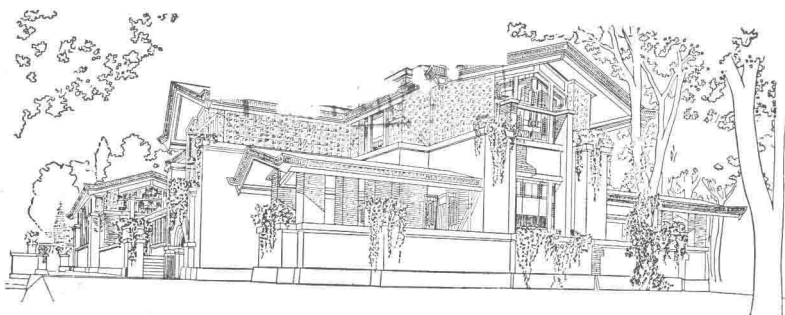
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*With 62 illustrations
and 26 tables*



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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Revised translation of

La diagnosi dei difetti di coagulazione

Biblioteca Haematologica, Pavia, 1954—

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Library of Congress Catalog Card Number: 55-11237

Printed in the United States of America

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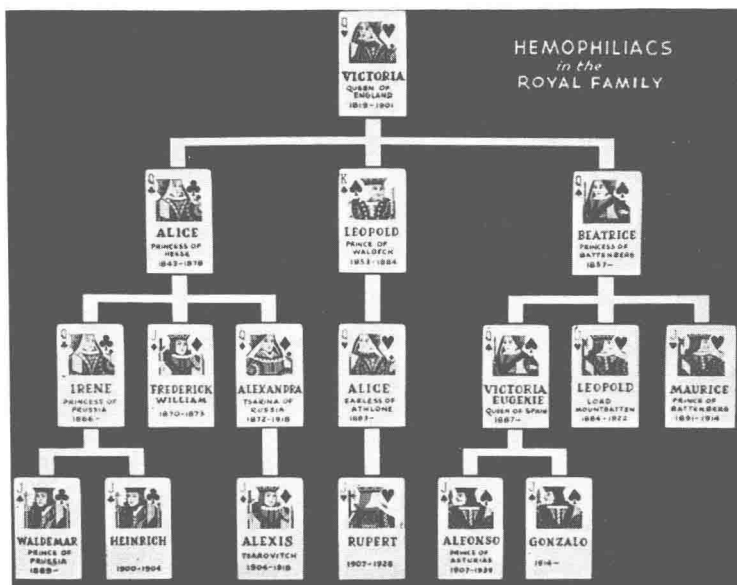
Publication Number 269
AMERICAN LECTURE SERIES®

A Monograph in
The BANNERSTONE DIVISION of
AMERICAN LECTURES IN PHARMACOLOGY

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To my wife



Hemophiliacs in the Royal Family. From an original color slide, courtesy of Dr. Charles W. Cotterman, Heredity Clinic, the University of Michigan, Ann Arbor, Michigan.

Preface

Research on blood coagulation, today, represents one of the most stimulating branches in hematology. The discoveries and investigations of the last twenty years in this field, have suggested the use of the term "Renaissance period of blood coagulation." With the cooperation of anatomists, physiologists, pathologists and clinicians, many physiopathologic and clinical implications have been derived from these studies.

In my department, researches on this subject are extensively carried out, and have covered many aspects of the problem. My assistant and co-worker, Pietro de Nicola, has been particularly involved in this work, by correlating the results of fundamental investigation with the clinical applications. This new knowledge has allowed us to identify a coagulation defect with much more exactness than was possible previously, and to analyze the therapeutic problem on a rational basis. Therefore, I suggested to Dr. de Nicola, to present in a concise form, his experience on the laboratory diagnosis of coagulation defects, which represents an essential step for the clinical study of these diseases. The material covering this subject is scattered over a large number of articles and monographs, and there was a need for a systematic, synthetic description. The author has given a clear and simple presentation of these problems, by describing and critically evaluating the diagnostic tests and their physiopathologic background. His training in the U.S.A., made it possible to better characterize some technical and fundamental aspects.

The monograph, which I am glad to present to the American readers, is suitable for rapid and exact information about the diagnosis of the coagulation defects, including the concerned techniques. The Italian, Spanish and German editions, which have already appeared or are in progress, indicate the general interest for the subject, as well as the intrinsic value of the book.

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Introduction

The diagnostic possibilities in the field of coagulation defects rapidly developed during the last years, as a consequence of the improved knowledge of physiology and physiopathology. Considerable increment to these results has been given by the researches on the isolation and purification of coagulation factors with particular reference to the newly discovered factors. In many cases, the identification of a new clotting factor has been originated from clinical observations, involving both physiological investigations and diagnostic conclusions. Research for quantitative and reliable methods for measuring coagulation defects, has had direct diagnostic purposes.

Both physiopathologic and diagnostic investigations on blood coagulation are still in progress. In this phase of research, characterized by the continuous, sometimes intriguing multiplication of terminologies and schemes, it is advisable to clarify and simplify the current theories, by taking into consideration only a portion of the material available, as reported in recent and complete treatises. This kind of selection is indicated if diagnostic conclusions have to be drawn on the basis of research carried out by various groups of investigators, using not always comparable methods.

On the basis of these concepts, present work has been divided into four parts: physiological background; description and interpretation of the various methods; special diagnosis of the coagulation defects, and analytical description of the techniques employed.

Experiments and illustration are taken from personal researches, carried out in the Department of In-

Introduction

ternal Medicine, University of Pavia (Director: Prof. Paolo Introzzi) and, in part, in the United States, during the tenure of a U.S. Government Fellowship administered by the Institute of International Education. We wish to express profound appreciation to these persons and organization in the U.S.A. contributing to the development of this monograph: to Dr. Walter H. Seegers (Department of Physiology, Wayne University) for the facilities of his laboratory and his helpful criticism and suggestions; to Dr. Gordon B. Myers (Department of Internal Medicine, Wayne University) and Dr. Lawrence Berman (Department of Hematopathology, Wayne University) for clinical material and personal observations; to Dr. William Damehek and Dr. Mario Stefanini (Tufts Medical College, Boston, Mass.) for making possible further researches in our Department; to Dr. Don W. Micks (University of Texas, Medical Branch, Galveston, Texas) and to Mr. J. Pasquarelli (New York, N.Y.) for kind revision of some parts of the manuscripts; to the editors of *Blood*, *Canadian Medical Association Journal* and *Texas Reports on Biology and Medicine*, for permission to reproduce figures published originally by these sources and contained in personal articles.

P. DE N.

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