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A TEXT-BOOK OF

X-RAY DIAGNOSIS

BY BRITISH AUTHORS

IN FOUR VOLUMES

SECOND EDITION

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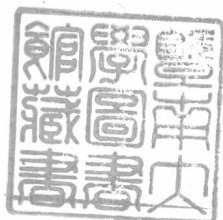
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**A TEXT-BOOK
OF X-RAY DIAGNOSIS
BY BRITISH AUTHORS**



EDWARD WING TWINING, 1887-1939

THIS VOLUME IS DEDICATED TO THE MEMORY OF
EDWARD WING TWINING, IN GRATEFUL APPRECI-
ATION OF THE PART HE TOOK IN THE PRODUCTION
OF THIS TEXT-BOOK AND OF HIS OUTSTANDING
CONTRIBUTIONS TO RADIOLOGY

**A TEXT-BOOK
OF X-RAY DIAGNOSIS
BY BRITISH AUTHORS**



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“The abdomen is very difficult to examine by X-rays. With the exception of gaseous distension of the stomach, renal calculi, and metallic foreign bodies, which can be detected, little information can be obtained.”

SIR JAMES MACKENZIE DAVIDSON,
Quain's Dictionary of Medicine, 3rd Edition, 1902.

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PREFACE TO THE SECOND EDITION

DISORGANISATION OF our national life by the war and its after-effects have delayed the production of the second edition of this work, and the Editors are conscious that it is long overdue. In the ten years which have elapsed since the first edition much has been added to our knowledge in diagnostic radiology, new ideas have been evolved and old misconceptions discarded. The Editors hope that these changes are reflected in this edition, and that it is as near to being up-to-date as a text-book can be. An increase in size was inevitable, and the matter has been rearranged in four volumes. It is hoped that this subdivision into the head and neck, the chest, the abdomen, and the bones and joints will be of convenience to clinicians who are mainly interested in a special branch of medicine.

The Editors desire to express their deep regret at the deaths of Edward Wing Twining and Robert E. Roberts, joint Editor and contributor respectively in the first edition. They are glad to welcome three new contributors, R. A. Kemp Harper, A. S. Johnstone, and R. G. Reid.

The Editors are grateful to Mr. A. Craske of Messrs. Craske, Vaus & Crampton for the care and attention which he has given to the preparation of the blocks, and to Messrs. Hazell, Watson & Viney for their careful work in the printing. Finally, they desire to express their great appreciation to the publishers, and in particular to Mr. F. Boothby and Mr. J. Goodhall, for their invaluable co-operation in the production of this Second Edition.

June 1950.

PREFACE TO THE FIRST EDITION

THE OBJECT of the Editors in presenting this text-book is to provide within reasonable limits a comprehensive survey of the present position of X-ray diagnosis. Diagnostic radiology is becoming an increasingly complex specialty, and it is difficult for one person to be equally expert in all its branches. The editors are fortunate therefore in having the help of collaborators, both radiological and clinical, who are distinguished in particular branches of the subject. It is hoped that this has made the work the more authoritative, and that it will be of value not only to the post-graduate student of radiology, but also to the clinician. In conformity with this design, only essential details of technique are included, and the subject of X-ray physics is not dealt with.

For convenience of reference, the work is published in three volumes, each containing as far as possible subjects of allied interest. Thus Vol. I deals mainly with the thorax, Vol. II with the abdomen, and Vol. III with the skeletal and nervous systems.

It is not possible, even within the generous limits allowed by the publishers, to illustrate every condition demonstrable by radiology, but the illustrations chosen are, it is hoped, representative, and give due emphasis to the common lesions met with in radiological practice. Considerable interchange of material for illustrations has taken place between the various contributors to the book, and the Editors are greatly indebted for the loan of illustrations from other colleagues, detailed acknowledgments of which will be found at the beginning of each volume. They are also grateful to Mr. Boutall, of Messrs. Vaus & Crampton, for the care and attention he has given to the preparation of the blocks, and to Messrs. Hazell, Watson & Viney for their careful work with the printing.

Finally, the Editors desire to express their sincere thanks to the publishers, and in particular Mr. H. L. Jackson and Mr. F. Boothby, for their co-operation and advice, without which this book could not have come into being.

October 1939.

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The Editors are also indebted for much help to many of their colleagues in Westminster Hospital, The Royal Chest Hospital and the Mass Radiography Units.

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CARDIO-VASCULAR SYSTEM

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