MODERN OPERATIVE SURGERY

EDITED BY THE LATE

G. GREY TURNER

LL.D., D.Ch., M.S., F.R.C.S., F.R.A.C.S., F.A.C.S.

Professor of Surgery in the University of London and Director of the Department of Surgery at the British Postgraduate Medical School. Surgeon, Hammersmith Hospital. Emeritus Professor of Surgery in the University of Durham. Honorary Consulting Surgeon, Royal Victoria Infirmary, Newcastle-upon-Tyne.

AND

LAMBERT CHARLES ROGERS

V.R.D., M.Sc., M.D., F.R.C.S., F.R.C.S.E., F.R.A.C.S., F.A.C.S.

Professor of Surgery, University of Wales; Director of Surgical Unit, Cardiff Royal Infirmary; Surgeon, United Cardiff Hospitals; Adviser in Surgery, Welsh Regional Hospital Board; Consultant in Neurosurgery to the Royal Navy; Member of Council and formerly Member of Court of Examiners and Vice President, Royal College of Surgeons of England.

WITH A FOREWORD BY

SIR GORDON GORDON-TAYLOR

K.B.E., C.B., M.A., LL.D., Sc.D., M.D., M.S., F.R.C.S., F.R.C.S.E., F.R.C.S.I., F.R.A.C.S., F.A.C.S.

FOURTH EDITION

In Two Volumes

VOLUME I

CASSELL AND COMPANY LTD

London

1955

CASSELL & CO. LTD
37/38 St. Andrew's Hill, Queen Victoria Street, London, E.C.4

and at

210 Queen Street, Melbourne
26/30 Clarence Street, Sydney
Haddon Hall, City Road, Auckland, N.Z.
1068 Broadview Avenue, Toronto 6
Avenida 9 de Julho 1138, São Paulo
Galeria Güemes, Escritorio 518/520 Florida 165, Buenos Aires
Haroon Chambers, South Napier Road, Karachi
15 Graham Road, Ballard Estate, Bombay 1
Munshi Niketan, Behind Kamla Market, 13/14 Ajmeri Gate Extension, New Delhi
77 Chittaranjan Avenue, Calcutta 13
Munsoor Building, Main Street, Colombo 11
P.O. Box 275, Cape Town
P.O. Box 1386, Salisbury, S. Rhodesia
P.O. Box 959, Accra, Gold Coast
2 Kilburn Estate, Singapore 21
17 Kauwlaan, The Hague, Holland
25 rue Henri Barbusse, Paris 5e
Bederstrasse 51, Zurich 2
Islands Brygge 5, Copenhagen

First Edition .	*December*, 1924
Second Edition .	*October*, 1934
Third Edition .	*November*, 1943
Reprinted . . .	*January*, 1945
Reprinted . . .	*November*, 1946
Reprinted . . .	*February*, 1948
Fourth Edition . .	*September*, 1955

MADE AND PRINTED IN GREAT BRITAIN
AT THE CHAPEL RIVER PRESS
ANDOVER, HANTS
655

LIST OF AUTHORS

BADENOCH, ALEC W., M.A., M.D., Ch.M.(Aberd.), F.R.C.S.

BARRON, JOHN N., M.B., Ch.B., F.R.C.S.

BIRDSALL, S. E., M.A., M.B., B.Ch.Camb., F.R.C.S.

BOYD, A. MICHAEL, Hon. M.Sc., Hon. F.A.C.A., M.B., B.S.Lond., F.R.C.S.

BURROWS, H. JACKSON, M.A., M.D., F.R.C.S., F.R.A.C.S.

CRAFT, A. W. J., O.B.E., M.R.C.S., C.I.Mech.E.

ELLIS, V. H., M.A., B.Ch.Camb., F.R.C.S.

EVANS, E. STANLEY, C.B.E., F.R.C.S.

EVERIDGE, JOHN, O.B.E., F.R.C.S.

GARDHAM, ARTHUR JOHN, M.S.Lond., F.R.C.S.

GILLIES, SIR HAROLD, C.B.E., F.R.C.S., Hon. F.A.C.S.

GORDON-TAYLOR, SIR GORDON, K.B.E., C.B., M.A., Hon. LL.D., Hon. Sc.D., Hon. M.D., M.S., F.R.C.S., Hon. F.R.C.S.E., Hon. F.R.C.S.I., Hon. F.R.C.S. Canada, Hon. F.R.A.C.S., Hon. F.A.C.S., Legion of Merit (Cdr.) U.S.A.

HANDLEY, W. SAMPSON, M.D., M.S.Lond., F.R.C.S., late V.P.R.C.S., Hon. F.A.C.S.

HARMER, W. DOUGLAS, M.A., M.B., M.Ch.Cantab., F.R.C.S.

HOGG, J. C., M.A., B.Ch.Camb., F.R.C.S.

HOWKINS, JOHN, M.S.Lond., M.D., F.R.C.S., F.R.C.O.G.

JEFFERSON, SIR GEOFFREY, C.B.E., F.R.S., Hon. LL.D., M.S.Lond., M.B., F.R.C.S. Eng. and Ire., F.R.C.P., Hon. M.Ch., Hon. F.A.C.S.

JONES, ROLAND N., M.A., M.Ch.(Cantab.), F.R.C.S.

KEYNES, GEOFFREY, M.D.Cantab., F.R.C.P., F.R.C.S., F.R.C.O.G.

LLOYD-DAVIES, O. V., M.S., F.R.C.S.

MARTIN, PETER, V.R.D., M.Chir., F.R.C.S.E.

MASON, GEORGE A., V.R.D., M.D., F.R.C.S.

MONKHOUSE, J. P., M.B., B.S., F.R.C.S.

MORGAN, C. NAUNTON, M.B., B.S., F.R.C.S.

NEGUS, V. E., Hon. D.Sc.Man., M.S., F.R.C.S., Hon. F.R.C.S.E.

PLATT, SIR HARRY, M.D., M.S.Lond., F.R.C.S., P.R.C.S., Hon. F.A.C.S.

ROGERS, LAMBERT C., V.R.D., M.Sc., Hon. M.D.Melb., F.R.C.S., V.P.R.C.S., F.R.C.S.E., F.R.A.C.S., F.A.C.S.

SCOTT, SYDNEY RICHARD, M.B., M.S.Lond., F.R.C.S.

STALLARD, H. B., M.B.E., Hon. LL.D., M.A., M.D., F.R.C.S.

TANNER, NORMAN C., M.D., F.R.C.S.

TANNER, WILLIAM EDWARD, M.B., M.S.Lond., F.R.C.S.

TUBBS, OSWALD S., M.A., F.R.C.S.

TURNER, G. GREY, Hon. LL.D., Hon. D.Ch., M.S., F.R.C.S., Hon. F.R.A.C.S., Hon. F.A.C.S.

VERNON, HENRY K., M.S., F.R.C.S.

WALLACE, D. M., O.B.E., B.Sc., M.S., F.R.C.S.

WARD, R. OGIER, D.S.O., O.B.E., M.C., T.D., Hon. D.Sc., M.A., M.Ch., F.R.C.S.

WARDILL, W. E. M., M.B., B.S., F.R.C.S.

WINDEYER, B. W., Hon. D.Sc., M.B., B.S., F.R.C.S., D.M.R.E., F.F.R., Hon. F.R.A.C.S., Hon. F.C.R.A.

FOREWORD

My friend, Professor Lambert Rogers, has kindly invited me to write a foreword to this fourth edition of Modern Operative Surgery which is dedicated to the memory of George Grey Turner. There is thus the unusual paradox of a book dedicated to its author, for it was the untimely death of the great surgeon that suggested to the new editor the propriety of a tribute from a contemporary and an old friend. Remembrance must always be an incentive to those who work in like causes to-day; though the memory of this great surgical figure still burns bright in the hearts of those who were his contemporaries, colleagues and pupils, to many he is already but a legendary name. *Κινεῖται καὶ ῥεῖ τὰ παντα*: there is no antidote against the opium of time.

Grey Turner bore almost unmurmuringly the discomforts and vexations attending the creation of a work by many writers; death spared him the travail and the birthpangs of seeing this new edition through the press, and it devolved upon his loyal friend and erstwhile junior colleague to play the maieutic rôle: no man-midwife ever discharged his task more loyally or proved himself more worthy of the author's trust in carrying out a last behest.

What of this master-surgeon? Grey Turner was one to whom no surgeon ever turned for advice or help in vain; he was the surgeons' consultant: the spoken word or the written message, even if scribbled on a used envelope, a postcard or a scrap of paper, always contained a nugget of pure gold. His knowledge of the surgeons of the world was as encyclopædic as his surgery and his choice of contributors for the various sections of this work will probably be judged to have been a wise one, but it will be noted how much he had written himself, for there was no department of surgery in which he was not interested and in which his experience was not considerable. The editor's introduction, completed before his death, reveals not only the stores of his knowledge and experience and the ripeness of his mind, but also his familiarity with the most modern advances in the science and art of surgery. He was not a laboratory man: his great reputation rested on his unrivalled clinical experience, his skilful surgery and his profound knowledge of surgical pathology.

More than eleven years have elapsed since the appearance of the last edition of this work: it is true that Horace in the Ars Poetica counsels that an author's manuscript after completion should be laid aside for nine years before being given to the world, but the Horatian maxim is scarcely applicable to the literature of science, for the chariot of surgical science to-day advances with an almost impetuous rush. The lamented editor and his successor and publishers have shown a most commendable forbearance in the delays occasioned by the preoccupations of contributors. The great name of the master-surgeon who has passed on and the almost filial piety with which his distinguished successor has completed the unfinished task ensure the success of this long-awaited new edition.

"Wisdom that is hid and a treasure that is not seen. What profit is in them both?"

Gordon Gordon-Taylor.

PREFACE TO THE FOURTH EDITION

In 1934 in a preface to the second edition, Professor Grey Turner wrote that the lamented death of H. W. Carson left the arrangements for that issue in active preparation. When Professor Grey Turner, who had edited the second and third editions, died that was again the position. He had planned a fourth edition and was actively engaged upon it. It had been my privilege to help him to some slight extent with it, and after his death I felt it incumbent on me to see the new edition launched, the more so as I knew it was his wish that I should do this.

As the fields in which the great majority of surgeons work today are limited, it is necessary to have many contributors to a comprehensive work. I gratefully acknowledge not only the cordial help of the contributors to this book, all of whom are masters of the subjects with which they deal, but also their understanding and forbearance during difficulties and delays in publication common to the war years.

Before launching could take place, the dark angel had again appeared and took from us V. H. Ellis and W. E. Tanner. Mr. John Gardham has kindly read the proofs of Mr. Tanner's section.

Sir Gordon Gordon-Taylor, doyen of British Surgery and beloved by surgeons everywhere, has added to his many kindnesses to an old student, dresser and war time shipmate by writing the Foreword to this edition. Among many others to whom I am also indebted are Messrs. K. D. J. Vowles, F.R.C.S., and G. E. Heard, F.R.C.S., Registrars to this Unit, who have given me their kind help in proof reading.

Surgical Unit,
Royal Infirmary, Cardiff.
August, 1955.

Lambert Rogers.

EXTRACT FROM THE PREFACE TO THE FIRST EDITION

THIS work is an attempt to present to the Profession an authoritative survey of the whole range of modern surgical operations. My aim, as Editor, has been to exclude operations which have lost their usefulness (and this includes some classical operations), and among new operations to include those only which have proved their value. It is possible that among the new operations left undescribed are some which are destined to attain permanency ; but it is the greater wisdom " to prove all things."

MODERN OPERATIVE SURGERY makes its appeal primarily to Surgeons who desire to be informed as to the detailed technique of modern operations, and at the same time it seeks to place before them the reasons for the choice of each operation, with such details of the preparation and after-treatment as may conduce to a successful result. Special care has been taken to deal with difficulties and dangers arising during the operation or afterwards, and efforts have been made to collect results from many sources.

In a composite work such as this it is difficult absolutely to avoid overlapping, but this has been reduced to a minimum, nor will more variation be found in individual opinion and method than is inevitable. I gladly acknowledge the readiness of my collaborators to adopt suggestions made with a view of securing as far as possible proportion of scale and uniformity of treatment.

H. W. CARSON.

EXTRACT FROM THE PREFACE TO THE THIRD EDITION

THE presentation of those methods that have stood the test of time has been regarded as most important, and I would remind the reader that a considerable period must always elapse before it can be said that a given modification, however striking or spectacular, is a real improvement rather than a mere change in technique. In surgery there can be no finality but, none the less, methods that have proved their value are not likely to be readily displaced from current practice. Let me also point out that this book deals only with the operative part of surgery, and that a general knowledge of wounds and their management is assumed. Many sections have been completely rewritten and all have been thoroughly revised, while there is a considerable increase in the number of illustrations.

In a work of this sort it is difficult to avoid a certain amount of repetition, but this is sometimes deliberate, to spare the reader the necessity of frequent reference to some other part of the book.

As editor, may I say that on the few occasions when I have found myself in disagreement with the authors I have not cared to weary the reader with dictatorial footnotes. I have myself shared the heavy task of reading the proofs, so that I am equally responsible for any errors that may have crept into the text. My warm thanks are due to the contributors who have helped so manfully in bringing out the work.

February, 1943. G. GREY TURNER.

CONTENTS OF VOL. I

PLATES IN VOL. I

INTRODUCTION

By G. GREY TURNER

IT is a commonplace to say that the days are over when operative surgery was entirely a matter of dexterity and speed in wielding the knife, but it becomes more true year by year, for the art has now passed into a phase when many of the more important operations can only be described as deliberately slow and painstaking. Spectacular surgery is not necessarily bad surgery, but to operate by the clock should never be made a cult nor looked upon as an ideal. The measure of surgical skill must always be efficiency rather than speed. *The correct operation, even if clumsily performed, is much more likely to be successful than the wrong operation, however brilliantly executed.* This statement presupposes the importance of recognizing the exact indications for operation, and is an illustration of the old truism that *without fore-thought there can be no precision.*

While it would be foolish to deny that the purely technical part of surgery has reached a high state of development, it is surely more foolish to suppose that the future has no advance in store. In spite of the position of operative surgery to-day, even in the most favourable circumstances the experienced surgeon must marvel at the recuperative powers of the human body and must ever be grateful for the *vis medicatrix naturæ.*

Since the last edition of this work the risks of operative surgery have been much diminished as the result of many factors, such as better preparation, improved anæsthesia, more extended use of blood transfusions and other supportive measures and improvements in after-care. As a result enormous ablations are undertaken for malignant disease with an astonishing recovery rate. The very safety of operations tempts the inexperienced but we should always remember that the measure of good surgery is not just the survival of the patient after operation but is the quality of the long term results, the proportion of real cures and the degree of relief afforded.

Successful surgery is founded upon accurate diagnosis.—The cases in which difficulties arise both during and after operations are usually those in which it has not been possible to make a reasonably accurate diagnosis. Experience soon teaches that there is wide latitude in the application of the curative measures which may be required in any particular circumstance. This is very well illustrated in the treatment of tuberculosis of bones and joints, for most surgeons will agree that, given suitable surroundings and the opportunity for the necessary continuity of treatment regardless of time, conservative measures will cure practically all cases. At the same time, if these conditions cannot be obtained, then it may be perfectly justifiable to operate. An operation

may be the most important factor in the management of one case, whereas in another it may be merely an incident.

Operation in stages.—Again, it may be wise to divide the necessary operative procedures into stages. This is well exemplified in the surgery of the large bowel, for it has been abundantly proved that if obstruction is first dealt with by drainage of the colon, the mortality of subsequent operation for removal of the cause is halved. Modern diagnostic methods often indicate operations likely to be successful which formerly would have been regarded as unjustifiable. Many neurological proceedings come under this head. The refinement of the operative art has also much to do with the enlargement of the surgical field, for by careful preparatory treatment, the management of the operation itself, and skilful after-treatment, contra-indications have been notably lessened. This is well illustrated by operations for hernia. In these days there are practically no contra-indications, unless indeed it be chronic cough, which has defeated all treatment. With adequate preparation and special methods of anæsthesia and after-care, conditions like albuminuria, diabetes and cardiac disease are no longer looked upon as, necessarily, contra-indications. Technical advances, such as the application of living fascial sutures, have also made it feasible to deal with types of hernia which in the past were looked upon as totally unsuited to surgical intervention.

But the mere existence of some condition which is often successfully treated by operation does not necessarily mean that this treatment should invariably be applied. This point is well illustrated by duodenal ulcer, a disease which yields to medical management in so many cases that it is unnecessary to consider operation unless (i) adequate medical measures fail to bring relief, (ii) the symptoms recur after a period of relief, (iii) the patient is unable to maintain stomach health in the environment in which he must earn a living, or (iv) there are signs of some complication like hæmorrhage or pyloric stenosis.

The influence of age on the question of surgical intervention is sometimes great. The experience of the recoveries from the most shocking injuries, the result of bombing in the recent war, provided remarkable evidence of the resistance and resilience of both young and old among the civilian population. When an operation is the only effective treatment it must be performed even at the extremes of life. Both the very young and the very old normally recover well from the inevitable trauma, but the aged are intolerant of inflammatory complications, and long-drawn-out convalescence is a serious hazard. For this reason it is necessary to operate early in abdominal emergencies in old people, and unwise to follow the usual practice of trying to avoid operation until it is inevitable.

Operability is closely bound up with the indications for interference. The object of surgery is to save life or to relieve suffering, and the magnitude of the undertaking which may be required depends on the