

**MODERN METHODS IN THE
DIAGNOSIS
AND TREATMENT
OF RENAL DISEASE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649442041

Modern Methods in the Diagnosis and Treatment of Renal Disease by Hugh Maclean

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

HUGH MACLEAN

**MODERN METHODS IN THE
DIAGNOSIS
AND TREATMENT
OF RENAL DISEASE**

MODERN METHODS IN THE
DIAGNOSIS AND TREATMENT
OF RENAL DISEASE

BY

HUGH MACLEAN, M.D., D.Sc.,

PROFESSOR OF MEDICINE, UNIVERSITY OF LONDON, AND DIRECTOR
OF THE MEDICAL CLINIC, ST. THOMAS'S HOSPITAL; HONORARY
CONSULTING PHYSICIAN TO THE MINISTRY OF PENSIONS;
CONSULTING CHEMICAL PATHOLOGIST TO ST.
THOMAS'S HOSPITAL



LEA & FEBIGER
PHILADELPHIA AND NEW YORK

19

First published . . . 1921.
Second Impression . 1922

Printed in Great Britain.

YVA98L1 3MA1
LIVE LIBRARY

M16
1322

PREFACE

THIS monograph was written in response to requests from various medical men who felt the need of a short practical account of some of the newer methods employed in investigating the renal function. In recent years considerable advances have been made in this branch of medicine, but much of the work lies scattered throughout the literature of various countries and is not accessible to the busy general practitioner. The present volume is an attempt to satisfy this want; it comprises, to a certain extent, work that has already been published by the author, chiefly in conjunction with Dr. O. L. V. de Wesselow, of St. Thomas's Hospital.

Since the book is intended principally for the general practitioner, it contains only the briefest allusions to theoretical points, and no references to literature are given. The statements made in connection with the various tests are founded on a very extensive experience of renal patients, and only those tests have been included which were found to be of practical clinical value and which are easily carried out.

In connection with the subject of renal tests a word of warning may perhaps be necessary. In every case the clinical symptoms must be carefully considered, but, as this part of the subject is discussed in all the ordinary text-books, it was considered superfluous to devote much space to it here. The necessity for a thorough study of the clinical manifestations cannot, however, be too strongly emphasised. In many patients, especially in

53651

the earlier stages of disease, a careful correlation of the clinical condition with the results of the tests described will give information which could not possibly be obtained, in the present state of our knowledge, from a study of the clinical features alone.

H. MACLEAN.

LONDON,
October, 1921.

CONTENTS

CHAPTER I

THE CHIEF FUNCTIONS OF THE KIDNEY

Excretion of waste products—Theories of renal excretion—
Removal of acids from the body—Acidosis in renal disease—
Maintenance of optimum concentration of salt in body fluids
pp. 1—13

CHAPTER II

THE KIDNEY IN DISEASE

General symptoms of acute nephritis—Blood pressure and cardio-vascular changes in acute nephritis—Hydræmia—Relation of œdema to hydræmia and blood pressure—Chemical findings in acute nephritis—Eye changes and convulsions in acute nephritis—Chronic nephritis—Azotæmic and hydræmic types of chronic disease *pp. 14—31*

CHAPTER III

THE SIGNIFICANCE OF ALBUMINURIA AND CASTS

Various forms of albuminuria—Albuminuria of adolescents—The incidence of albuminuria in the adult population—Some figures obtained from the army—Presence of casts in albuminous urines—General observations as to the significance of albuminuria
pp. 32—39

CHAPTER IV

BLOOD EXAMINATION IN RENAL DISEASE

Importance of blood urea—Blood urea increased only in bad cases—Uremia not due to urea—Mechanism of urea excretion—Cases in which estimation of blood urea is indicated—Method of estimation of blood urea—Estimation of non-protein nitrogen
pp. 40—51

CHAPTER V

OTHER TESTS FOR INVESTIGATING RENAL FUNCTION

Urea concentration test—Diastatic test—Dye tests—Phenol-sulphone-phthalein—Ambard's coefficient of urea excretion—Urea concentration factor *pp. 52—67*

CHAPTER VI

THE RELATION OF NEPHRITIS TO BLOOD PRESSURE AND
CARDIO-VASCULAR CHANGES

Cardio-vascular changes not necessarily associated with renal damage—Attacks simulating uræmia in cardio-vascular disease—Examples of cases—Blood pressure no indication of extent of kidney damage pp. 68—73

CHAPTER VII

THE EXAMINATION OF PATIENTS FOR RENAL EFFICIENCY,
WITH NOTES OF CASES

Scheme for examination of patient—Examination of urine for protein—Examination for casts—Nature of casts—Cardio-vascular changes—Estimation of blood pressure—Series of cases illustrating results obtained with renal tests pp. 74—85

CHAPTER VIII

THE IMPORTANCE OF ASCERTAINING THE STATE OF THE
KIDNEYS IN CERTAIN SURGICAL CONDITIONS

Genito-urinary cases—Prostatectomy and renal efficiency—Importance of cystostomy and drainage in patients with high blood urea pp. 86—88

CHAPTER IX

SOME OBSERVATIONS ON THE DIETETIC TREATMENT OF
NEPHRITIS

Diet in acute and chronic nephritis—Treatment of chronic parenchymatous nephritis—Epstein's diet—Action of urea in removing dropsy—After-history of parenchymatous cases cured of dropsy—Diet in chronic interstitial nephritis . . . pp. 89—98

INDEX pp. 99—102

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASE

CHAPTER I

THE CHIEF FUNCTIONS OF THE KIDNEY

IN spite of the many ingenious and laborious investigations that have been carried out in an endeavour to elucidate the manner in which the kidney performs its functions, many of the problems of renal secretion are still unsolved. The chief functions performed by the kidney we know ; how the kidney performs them remains a comparative mystery. The extreme complexity of this gland, with its various tubules and cells, has always attracted and baffled physiologists and histologists, so that to-day we are in some respects less certain of the methods of renal secretion than we seemed to be some years ago.

One of the principal functions of the normal kidney is the excretion of water. In addition to this, it performs certain other very important duties, the chief of which may be summarised as follows :—

- (1) Removal from the body of certain waste products of nitrogenous metabolism.
- (2) Removal of acid products from the body.
- (3) Maintenance of the optimum concentration of salts in the fluids and tissues.
- (4) Excretion of many toxic materials artificially introduced.

From the point of view of investigating the efficiency of the kidney we are chiefly concerned with the first three functions, and, in order to appreciate certain of the facts