



# HOARE'S VETERINARY MATERIA MEDICA AND THERAPEUTICS

SIXTH EDITION

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LONDON

BAILLIÈRE, TINDALL AND COX  
7 & 8 HENRIETTA STREET, COVENT GARDEN

1956 (*Reprinted*)

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VETERINARY MATERIA MEDICA  
AND THERAPEUTICS

## PREFACE TO THE SIXTH EDITION

IN view of recent important advances in Veterinary Therapeutics the need for a new edition of 'Wallis Hoare's Materia Medica' has for some time become increasingly clamant, but because of the prevailing circumstances its production has been necessarily delayed.

In the preparation of the present edition I have been fortunate in obtaining the collaboration of my colleague Professor G. F. Boddie, and this, as can be readily understood, has not only lightened the task of preparation but has also very considerably enhanced the usefulness of the book.

The value of the barbiturates and of the sulphanilamides in Veterinary Practice has for some time been established, and apart from critically reviewing the entire text my collaborator has contributed the articles relating to these important substances.

The now generally accepted practice of calcium therapy in the specific treatment of milk fever and the allied conditions of acute hypocalcæmia has occasioned the rewriting of the articles relating to these matters, and in general the text has been brought into line with the accepted practice of Veterinary Therapeutics as that obtains to-day.

Appreciative thanks are due to Mr. R. H. Sherwood Calver, Advocate Depute for Scotland, Lecturer in Jurisprudence, Royal (Dick) Veterinary College, for having contributed the article on the Law relating to Dangerous Drugs and to Poisons. It is also proper to acknowledge the assistance afforded by my son, Mr. Alastair Greig, who, besides having generally reviewed much of the text, has also offered many acceptable suggestions. Miss Agnes McCracken and Miss B. H. Morgan also have readily rendered much useful help in several ways.

I am grateful to the publishers, Messrs. Baillière, Tindall and Cox, for having extended their usual friendly encouragement

and pleasant courtesy; but to them and to their printers, Messrs. Billing and Sons Ltd., I would also express my lively appreciation, indeed admiration, of the way they have surmounted conditions occasioned by enemy action which, not so long ago, would generally have been regarded as quite appalling.

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*March, 1942.*

## PREFACE TO THE FIFTH EDITION

IN the present book the general plan of the work conforms to that followed in the last edition. An attempt has been made to present Part I. in more concise and lucid form, and in revising and largely rewriting the section on *Materia Medica* I trust that I have been duly mindful of the now more clearly recognized claims of Pharmacology as the link in the teaching curriculum between Physiology and Therapeutics.

The recent publication of a new edition of the British Pharmacopœia has occasioned numerous alterations in nomenclature and in formulæ. Many preparations now no longer official, which have proved of value in veterinary practice, have been retained in the text, the adoption of this expedient being necessary because of the continued absence of an official Veterinary Pharmacopœia.

The section on Therapeutics has been almost entirely rewritten. It aims at conciseness rather than at completeness, and if several of the views which I have expressed, especially where these relate to pathogenesis, savour of originality rather than of orthodoxy, and are thus open to criticism in a work of this kind, it can be claimed that they rest on accepted physiological bases.

The preparation of a new edition of a standard textbook on Veterinary *Materia Medica* and Therapeutics imposes no light responsibility upon one who is no longer actively engaged in the teaching of these subjects, and I am warmly appreciative of the ready assistance afforded by the many professional friends from whom I have sought guidance upon doubtful points. Mr. Arthur Gofton has revised and extended the section on the Biological Tests in Clinical Diagnosis, and has written the short article on the Care and Management of the Parturient Cow. To him I am also indebted for the critical revision of Parts I. and III. I have also specially to acknowledge the services of my colleagues. Professor Henry Dryerre has revised much of the text and collaborated freely on those aspects relating to Physiological Biochemistry. Mr. Alexander Brownlee has checked all the formulæ and posology, and has offered many helpful suggestions. Mr. W. S. Gordon has assisted in the preparation of the section on Vaccine and Serum Therapy. Mr. Norman Walker, Advocate, Lecturer on Jurisprudence, Royal (Dick) Veterinary College, has

contributed the article on the Law relating to Dangerous Drugs. To my secretary, Miss Agnes Marcus, I am particularly indebted for her devoted personal service throughout the entire work of preparation, and for her careful compilation of the Index.

I have also to acknowledge the kindness of Professor Walter Dilling, and of his publishers, Messrs. Cassell and Company, in permitting the free use of those portions of the text of Bruce and Dilling's '*Materia Medica and Therapeutics*' which concern the source, the physical characters and the composition of drugs; and I am personally grateful to Mr. Rudyard Kipling for special permission to quote certain verses of '*Our Fathers of Old*.' I believe that these few ringing lines will more deeply impress their lesson upon the mind of the student than would many pages of prosaic text. Finally, I have to express my appreciation of the unfailing courtesy and helpfulness of the publishers.

While acknowledging the assistance of these several collaborators, I feel that to offer them my personal thanks is needless, since their various contributions to the preparation of the text, in common with my own, have been rendered in the hope that this book may prove of some service to the advancement of Veterinary Science.

J. R. G.

MOREDUN INSTITUTE,  
EDINBURGH.  
May, 1933



'We must first of all put it on record that without the aid of Nature neither precept nor practice will be of much service to us.'—QUINTILIAN: *De Institutione Oratoria*, Prooemium, 26.

'A judicious distrust and wise scepticism are the sinews of the understanding.'—EPICHRMUS.

'Art is born of the observation and investigation of Nature.'—CICERO: *Orat.* v. 183.

'It cannot be denied that we have learned more rapidly how to prevent than how to cure diseases; but, with a definite outline of our ignorance, we no longer live now in a fool's paradise, and fondly imagine that in all cases we control the issues of life and death with our pills and potions.'—OSLER.

### OUR FATHERS OF OLD

Excellent herbs had our fathers of old—  
Excellent herbs to ease their pain—  
Alexanders and Marigold,  
Eyebright, Orris, and Elecampane—  
Basil, Rocket, Valerian, Rue,  
(Almost singing themselves they run,)  
Vervain, Dittany, Call-me-to-you—  
Cowslip, Melilot, Rose of the Sun.  
Anything green that grew out of the mould  
Was an excellent herb to our fathers of old.

Wonderful tales had our fathers of old,  
Wonderful tales of the herbs and the stars—  
The Sun was Lord of the Marigold,  
Basil and Rocket belonged to Mars.  
Pat as a sum in division it goes—  
(Every herb had a planet bespoke)—  
Who but Venus should govern the Rose?  
Who but Jupiter own the Oak?  
Simply and gravely the facts are told  
In the wonderful books of our fathers of old.

Wonderful little, when all is said,  
Wonderful little our fathers knew.  
Half their remedies cured you dead—  
Most of their teaching was quite untrue—  
Look at the stars when a patient is ill.  
(Dirt has nothing to do with disease,)  
Bleed and blister as much as you will,  
Blister and bleed him as oft as you please.  
Whence enormous and manifold  
Errors were made by our fathers of old.

\* \* \*  
If it be certain, as Galen says—  
And sage Hippocrates holds as much—  
'That those afflicted by doubts and disms  
Are mightily helped by a dead man's touch,'  
Then, be good to us, stars above!  
Then, be good to us, herbs below!  
We are afflicted by what we can prove,  
We are distracted by what we know,  
So—ah, so!  
Down from your heaven or up from your mould,  
Send us the hearts of our fathers of old!

RUDYARD KIPLING.

*First Edition published 1895.*  
*Second Edition published 1906.*  
*Reprinted 1908, 1912.*  
*Third Edition published 1916.*  
*Fourth Edition edited by J. Russell Greig.*  
*Published 1924.*  
*Reprinted 1930.*  
*Fifth Edition edited and revised by*  
*J. Russell Greig.*  
*Published 1933.*  
*Reprinted 1936, 1939.*  
*Sixth Edition edited by J. Russell Greig and*  
*George F. Boddie.*  
*Published 1942.*  
*Reprinted 1948.*  
*Reprinted 1949*  
*Reprinted 1955*  
*Reprinted 1956.*

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# VETERINARY MATERIA MEDICA AND THERAPEUTICS

## PART I

### INTRODUCTION

VETERINARY Therapeutics is the subject which concerns the treatment of disease in the domesticated animals. In its wide sense it embraces not only the application of medicinal agents, vaccines, and sera, for this purpose, but it also includes such important auxiliaries as hygiene, dietetics, and the care, management, and nursing of sick animals.

Pharmacology deals with the action of drugs on the body, without special reference to their application in the treatment of disease. In this book the subject of pharmacology will be discussed only in so far as it relates to therapeutics ('Applied Pharmacology'). For further information readers are referred to general textbooks on Pharmacology.

Materia Medica deals with the name, source, distribution, composition, physical characters, and preparations of the various agents employed by the therapist.

Pharmacy is the art of compounding and dispensing formulæ or prescriptions.

The ability of the general practitioner is largely dependent on his skill in diagnosis, prognosis, and treatment. His professional education is largely directed to rendering him proficient in these matters. Clinical proficiency entails an intimate knowledge of pathology, but a knowledge of pathology alone will not suffice; the clinical symptoms of disease must be studied and interpreted. This requires a sound knowledge of physiology, which is in fact the basis of rational therapeutics, for unless we be acquainted with the functions of healthy organs we cannot have any clear perception of the alterations in function produced by disease, or of the manner in which medicinal agents assist in bringing about a return to health. It is not always possible to form a precise diagnosis; the leading symptoms must therefore receive consideration, as they offer important indications for treatment. There are many

occasions, also, on which a diagnosis alone cannot be regarded as representing sufficient indication for a particular treatment, and the special features of the case must be studied. If every disease possessed a set of regular symptoms, and yielded to a definite form of treatment, then indeed therapeutics would be much simplified. But the symptoms presented are frequently atypical; diagnosis is often attended with considerable difficulty, and a line of treatment that succeeds in one case may fail in other cases of the same disease. Further, our knowledge of the action of drugs on diseased organs is far from definite, and it is often a very difficult matter to determine the exact influence which a certain drug or a particular treatment exerts on a diseased condition.

One of the first lessons which the student of veterinary medicine must learn is that natural powers of recovery exist to a greater or less extent in the majority of diseased conditions. A marked influence on the course and results of disease is exerted by *vis medicatrix naturæ*, and in assessing the value of medicinal agents it is necessary that the student realize that recovery is not always to be attributed to the effects of the drugs administered. He must also appreciate the fact that, in adopting any line of medicinal treatment, care should be taken to select agents which assist the natural powers of recovery, and to avoid those likely to be antagonistic to these powers. The irrational treatment adopted in former times must be attributed to lack of appreciation of these powers of recovery, to a firm belief in the virtues of certain potent drugs, and to the erroneous idea that in all cases there existed the means by which the effects of disease could be directly overcome. Although new medicinal agents are constantly being introduced, drugs are now less frequently prescribed than formerly. In these days we endeavour to assist the natural powers of recovery by attention to hygienic and dietetic details, and to the careful nursing of the patient. As has been indicated, animals may recover spontaneously from many affections, and the indiscriminate administration of drugs frequently tends to impede recovery.

The term '*rational therapeutics*' is used with reference to the application of remedial measures when we can clearly explain the reasons for their adoption. This implies a precise diagnosis, a knowledge of the etiology of the affection, so that we can act directly or indirectly on the causes which produce it, and an intimate knowledge of the actions of the drugs which we employ. All these desiderata are usually very difficult to fulfil.

In '*empirical therapeutics*' certain agents prove successful in a series of cases of the same disease, although it is not possible

to explain their action. Their value has been demonstrated by experience.

So-called 'specific' remedies are not numerous, and in several instances their mode of action has not yet been determined.

It is to be observed that in the case of horses and of 'food animals' treatment is limited by economic considerations. If a horse cannot be rendered useful for work, the owner seldom desires that its life should be prolonged. In cattle a long course of treatment is seldom desirable, as loss of physical condition results, and, unless there be a reasonable prospect of recovery, it is advisable to dispose of the animal to the abattoir in the early stages of the case, provided that there exist no diseased condition such as would render the flesh unfit for human consumption.

In the dog, considerations of sentiment largely enter into the question of treatment, and, provided humanitarian considerations permit, a prolonged course of treatment may be undertaken.

In each of the domestic animals there occur certain specific diseases which are communicable to man; in such instances destruction, and not treatment, of the affected animals may have to be adopted. In certain highly infectious epizootic diseases, immediate destruction of the affected animals and their contacts proves the most economic policy. This procedure is indicated in dealing with foot and mouth disease, which, although amenable to treatment, spreads with such rapidity and interferes to such an extent with the cattle trade of a country, that, on grounds of economy, treatment is not desirable.

## DIAGNOSIS AND THE GENERAL SYMPTOMS OF DISEASE

IN order to prescribe rational treatment for the sick animal, it is necessary to ascertain the nature of the illness from which the patient is suffering. The diagnosis is based on the history of the case, on the proper interpretation of the symptoms presented, and on knowledge of the probable causes which have produced the disease. Having formed a diagnosis, we have then to consider the selection of the line of treatment which is likely to assist the natural powers of recovery and so bring about a return to health. In some cases we are able to act directly on the cause, and so to remove it. In others we have to treat the leading symptoms present, as, because of absence of evidence indicating the precise nature of the disease, a definite diagnosis is impossible at our earlier examinations of the patient.

The general symptoms merit consideration, and afford valuable indications for treatment. Thus, alterations in the character of the pulse and respirations, the presence of fever, the condition of the excretions, etc., must be carefully observed and regarded as clinical guides, even when a precise diagnosis has been attained.

Symptomatic treatment—*i.e.*, the treatment of symptoms without reference to their source or causation—is irrational except when the conditions upon which the symptoms immediately depend are the cause of pain or acute discomfort to the patient. For example, acute abdominal pain in the horse frequently depends upon impaction of the large bowel. The pain may be controlled by the use of opiates, and this formerly constituted the accepted treatment for the condition. But it was obviously irrational, since the pain depended upon intestinal impaction, and opiates, while capable of relieving the pain, induced bowel stasis. Rational treatment consists in stimulating intestinal peristalsis with the object of removing the *cause* of the pain, and the pain in turn can be controlled by anodynes, such as chloral hydrate, which do not hinder the action of the purgative.

Examples of a similar kind are of frequent occurrence in practice. Thus, nervous phenomena may be associated with

gastric disorders, and cardiac disturbance may result from digestive derangement. Treatment in such cases should not be directed alone to the alleviation of the symptoms without reference to their origin.

Our patients, unlike human beings, are unable either to describe the sensations they experience (subjective symptoms), or to give any direct assistance to the medical attendant. We have, therefore, largely to depend upon those symptoms which can be observed (objective symptoms). A well-trained faculty of observation, and familiarity with the appearance and habits of animals in health, are among the most valuable attributes of the veterinary student.

It is not uncommon to find that at the first examination of a case a definite diagnosis is not possible, as the symptoms presented may be indefinite or general—*i.e.*, common to a number of affections. Until more definite symptoms appear, an opinion upon the nature of the case must be deferred.

**Prognosis**, or foretelling the probable termination of the case, is of special importance, because, as has been indicated, veterinary therapeutics is, especially in the case of horses and cattle, limited by considerations of economy. The cost of prolonged treatment has, therefore, to be considered in relation to the probable value of the animal after recovery.

**The History of the Case—ANAMNESIS.**—This is a very important aid to diagnosis. We have to rely on the attendant in charge of the animal for the requisite information. Because of the imperfect power of observation possessed by some individuals, it is often difficult to obtain a reliable history. Further, because of carelessness or ignorance, the attendant may be a contributory factor to the illness from which the patient is suffering, in which case his statements may be unreliable. It is often necessary to subject the attendant to a series of indirect questions in order to bring out facts. We inquire with reference to the length of time the animal has been in the present owner's possession, the duration of the illness, and whether the patient has previously suffered from disease. We next endeavour to obtain a description of the earliest symptoms that were noticed, and inquire whether other animals are showing similar signs of illness. Frequently the only information we can glean is that the animal refused to feed, appeared dull, and was disinclined for work. In the case of acute abdominal affections, we learn the time at which painful symptoms were first observed and their character—*i.e.*, whether they were intermittent or continuous. We may also ascertain whether rigors have been manifested; whether the bowels are acting



properly, and whether the urine is diminished or excessive in volume. In the case of female animals, we may inquire with reference to the occurrence of oestrus, to the existence of pregnancy, and to the occurrence of previous pregnancies. It is also necessary to ascertain whether any treatment has been adopted, as it is the layman's common practice to administer a powerful purgative upon the first appearance of illness. Such treatment is frequently entirely contra-indicated, and when draughts have been carelessly administered, the entrance of fluids into the bronchi may result in broncho-pneumonia. This is a common experience, and it is necessary to make a careful inquiry as to the occurrence of coughing and distress succeeding the administration of the medicine. The attendant may, however, deny any knowledge of the occurrence, and we have to rely on the evidence obtained from an examination of the chest and on the observation of other symptoms suggestive of 'inhalation pneumonia.'

In diseases of the digestive system, inquiries should be made with reference to the quality of the food and the method of feeding and watering adopted, also, in the case of horses, to the hours of working and the nature of the work.

Experience of the unreliable information we receive in so many instances teaches us that we must fully exercise our powers of observation, as by observing minor details we often ascertain matters of importance. Indirect questioning not infrequently succeeds when direct interrogation fails.

**Primary Examination of the Patient.**—Since our animals are unable to furnish us with subjective symptoms such as can be afforded by the human patient, our primary examination must largely be based upon such powers of acute observation as we possess and should include the most minute detail. The patient should be approached quietly and first examined at some little distance. Attention is paid to the general appearance, the facial expression, the postures and movements.

This examination should not be made hurriedly, as a considerable time may be required to comprehend the general state of the animal.

### The Temperature.

The temperature is registered by inserting a clinical thermometer in the rectum. Care should be taken that the bulb of the thermometer comes into intimate contact with the mucous membrane of the bowel, and that it be retained in position for the requisite time, usually one-half minute. The