

A MANUAL

OF

INDIAN CATTLE AND SHEEP,

THEIR BREEDS, MANAGEMENT AND DISEASES.

BY

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PUBLISHERS' PREFACE.

THE "copy" of this edition was very carefully revised and added to by the author before his death, but the unexpected occurrence of this sad event before the work was put to Press prevented his passing final proofs.

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PREFACE TO THE SECOND EDITION.

A SECOND edition of the Cattle Manual of India has been found necessary to follow the first edition which was published several years ago, and worked its way slowly but surely to public favour. Its success will, I hope, with all its faults, be more universally and rapidly extended to the present volume. As space forbids an exhaustive treatment of the subjects brought to notice in the work, it has been my endeavour to be not only accurate and useful, but as brief as possible, and to make it a trustworthy companion on the subject of which it treats. The whole work has been carefully revised, with a few statements here and there struck out, and some forty pages of fresh matter have been added. I have stated nothing that my own personal experience has not verified during a long series of years of cattle-practice in India.

THE AUTHOR.

P R E F A C E.

A WORK on the diseases of Indian Cattle has long been wanted, and I have attempted to supply the want. My aim in the composition of the following pages has been to be as concise as possible in the every-day treatment of Cattle in this country.

I have confined myself to as few well-known drugs as possible, such as are cheap and easily obtained in most villages and bazaars, with the exception of a few medicines which also are cheap and easily procurable in the chief towns.

I have inserted nothing that my own experience in Cattle-practice has not confirmed during the last thirty years in many districts of India; in all of which I have seen, examined and frequently treated the different forms of Cattle-diseases.

To the Board of Revenue I have to tender my best thanks for their courteous permission to make use of an Essay on the "Indigenous Breeds of Cattle," for which a prize of one hundred rupees was awarded to me at the Agricultural Show of 1874 at Sydapetta; as also for copies of MESSRS. THACKER and J. H. B. HALLEN'S Manuals and other papers on Cattle-diseases.

The several Plates contained in this Manual were specially prepared and have been taken chiefly from Photographs.

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INTRODUCTION.

To be successful in the treatment of disease in cattle, it is necessary to thoroughly understand and accurately interpret the various signs that indicate its presence; displayed in many instances by the attitude of the animal; and to form a correct diagnosis, three points should be remembered,—

1. The indication of various ailments that animals exhibit, characteristic of disease;
2. A practical knowledge of the habits and disposition of cattle; and
3. The power of discriminating a healthy from an infected animal.

The first impression a patient makes on the practitioner should not be lost sight of, as it may at once enable him, by the appearance and attitude of the animal to determine whether a slight or severe attack is impending, as also its nature and cause; but in many instances he may be puzzled to know what the ailment is, as it has to be inferred simply from any symptoms of suffering which the patient may exhibit.

Experience will often assist the practitioner in prognosticating the progress and termination of disease.

As "Neat Cattle" form the subject of this treatise, it will be necessary to glance at their habits, &c. They belong to the class "Mammalia," and the order "Ruminantia," from ruminating or chewing their food a second time; and owing to this fact, ruminants differ from most other animals in the conformation of their digestive organs, which, being complex, require to be understood to be successfully treated.

The Ox has 4 stomachs, termed,—1, the *Ingluvies*, Paunch or Rumen; 2, the *Reticulum* or honey-combed stomach; 3, the *Manyplies*, from its plicated structure; and 4, the *Reed* or *Abomason*. The food gathered and cropped by the lips, tongue and teeth, is sent down the gullet to the first stomach or "Paunch," where it undergoes maceration, being moistened with fluid secreted by the walls of the bag; and is then carried on to the second stomach or *Reticulum*, from whence it is returned to the mouth in instalments to undergo mastication, termed *Rumination*, or in popular parlance, "chewing the cud." When this process is completed, the food is sent down to the third stomach or *Manyplies*, where it undergoes further commutation, and being fitted for digestion, finds its way to the fourth stomach, the "*Abomason*," where true digestion takes place, and the softened food is converted into "*Chyme*" for the nourishment of the animal,—whilst the effete portion passes through the intestines and is eventually discharged as dung.

It is well to remember that, owing to the complex nature of the digestive canal, the treatment of cattle is sometimes unsuccessful, as the medicines administered, instead of finding their way to the true or fourth stomach, the "*Abomason*," may, at the will of the animal, enter the Paunch or first stomach, and remain there without producing any effect, and even accumulate, dose after dose, till they eventually reach the true stomach, probably 2 or 3 days after, producing violent effects by overpurgation, &c.

"The peculiarities of the action of medicines in cattle are chiefly referable to the construction of their alimentary canal, and to their phlegmatic temperaments. In these ruminants, the stomach is quadrisected, is much less vascular than in most other animals, is chiefly covered with cuticular mucous membrane, and (as regards its three first divisions) is almost mechanical in its action. The first and third compartments of the stomach always

contain food, often in large quantity. These facts explain why cattle require such large doses of all medicines, why irritant and corrosive poisons can be given them with impunity, even in very large doses, and why purgatives, unless in large doses and in solution, are so tardy and uncertain in their effects. Their kidneys and skin are somewhat less easily acted on than the corresponding organs in the horse; and their dull and phlegmatic disposition resists the action both of stimulants and tonics. Sheep closely resemble cattle in the way in which they are affected by most medicines."—*Veterinary Medicines, their action and uses*, by FINLAY DUN, V. S., 1854.

THE CIRCULATION.

The heart in animals is not only the centre but the chief and prime source of circulation, the vessels concerned in the distribution of blood being the arteries, veins and capillaries. The arteries take "arterial" or "bright blood" from the heart, and the veins bring back "venous" or "black blood" to the heart. The capillaries are the fine hair-like vessels that are intermediate between the arteries and veins. They distribute arterial, and bring back venous blood from different parts of the system to the centre of circulation, the heart.

The pulse is caused by the expansion and contraction of the heart and arteries in propelling blood into the system. This action is constant and unremitting. By feeling any one of the more exposed arteries of an animal, we are able to count the number, and ascertain the force, quickness and regularity of the circulation, which constitutes what is called the "pulse." Thus, for instance, in man the pulse is felt at the wrist, in the horse at the lower jaw, but in the ox the temporal artery is generally recommended, and as it may be difficult at times to find it there, recourse is often

had to the heart itself. By placing the hand on the left side of the chest, a little within and behind the elbow, the beats of this organ can be readily felt and counted, and the state of the circulation ascertained. The manner of the flow, or the quantity that is propelled at each pulsation cannot be so well ascertained as when an artery is compressed against a bone,—nevertheless a clue as to the state of the circulation is gained, and the indications thus given are of much practical value in the treatment of disease. The action of the heart in the ox when in a state of health averages about forty beats per minute.

RESPIRATION.

Consists in the act of inhaling and exhaling air through the lungs. Oxygen gains access by this means into the lungs, and is distributed over the small air-cells of that viscus, where it enters into combination with the blood, rendering it of a light arterial or scarlet color, and passes with it to every part of the body: in the capillaries, it combines with the carbon and hydrogen of the effete tissues, forming water and carbonic acid. The blood now rendered black and venous, is returned to the lungs, where it gives out its carbonic acid and receives a fresh supply of oxygen. On respiration the health and vigour of animals depend, and therefore, all animals require not only fresh air, but sufficient breathing space when housed.

UTILITY.

There is scarcely a part of the cow that is not turned to account. When alive, she enriches her proprietor with a calf every year or eighteen months, and supplies him with milk, subsequently converted into curds, ghee, &c., while her urine and dung enrich his fields as manure. Notwithstanding the superstitious veneration which the cow is held by Hindus generally, and its flesh

being considered sacred, the milk forms a most valuable and rich nutriment, and is freely partaken by all castes. When slaughtered, the flesh supplies beef to the greater portion of the world; the skin furnishes leather, and the uses to which leather is put are manifold; the hair is valuable in various manufactures; the horns are wrought into boxes, combs, knife-handles, and drinking vessels; the bones furnish a fair substitute for ivory. Not a bone of any animal should be thrown away; many cattle shin bones are shipped to England for the making of knife-handles where they are paid 40£ per ton. The thigh bones are the most valuable, being worth 80£ per ton, for cutting into tooth-brush handles. The fore-leg bones are worth 30£ per ton, and are made into collar buttons, parasol handles and jewellery. Sheep's legs are the staple parasol handles and the dust which comes from the sawing of bones, is fed to cattle; the sinews are used by saddlers and others, instead of thread. The four feet of an ordinary ox, will yield a valuable oil termed neat oil from "Neat," the generic name of these animals which oil is of great utility in preparing and softening leather; the fat is converted into candles; glue is made from the cartilage gristle and refuse of the hide and the water in which the bones are boiled, is also reduced to glue, so that, no part of the animal is rejected.
