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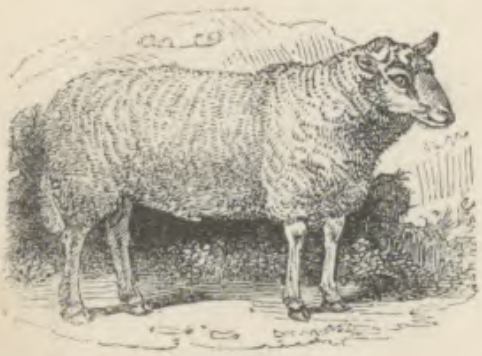

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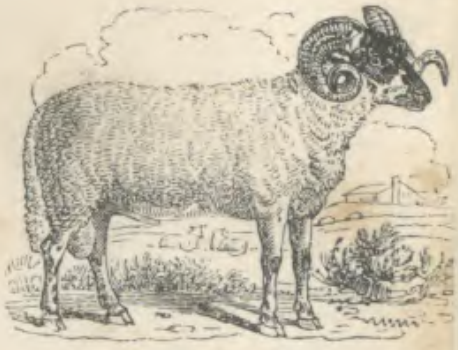

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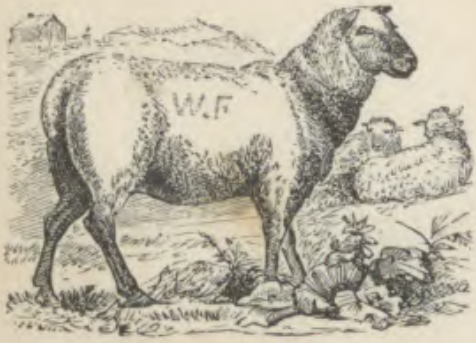

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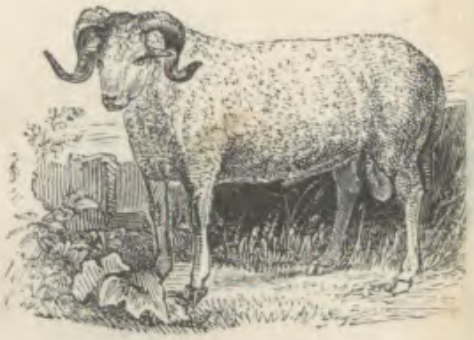

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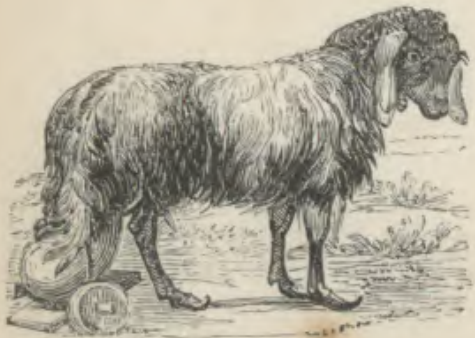

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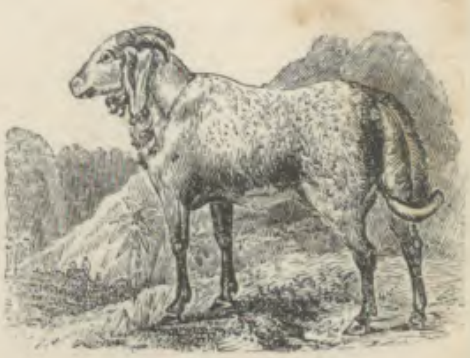

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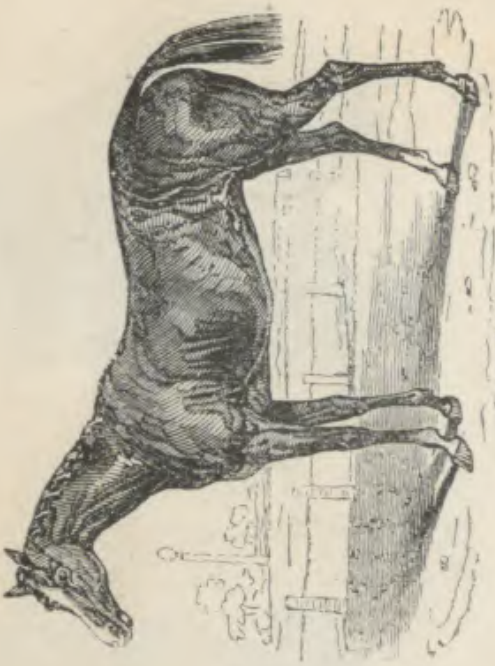

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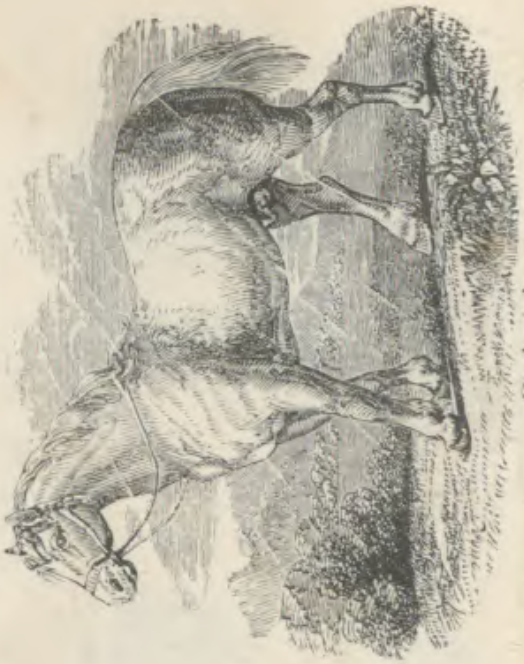

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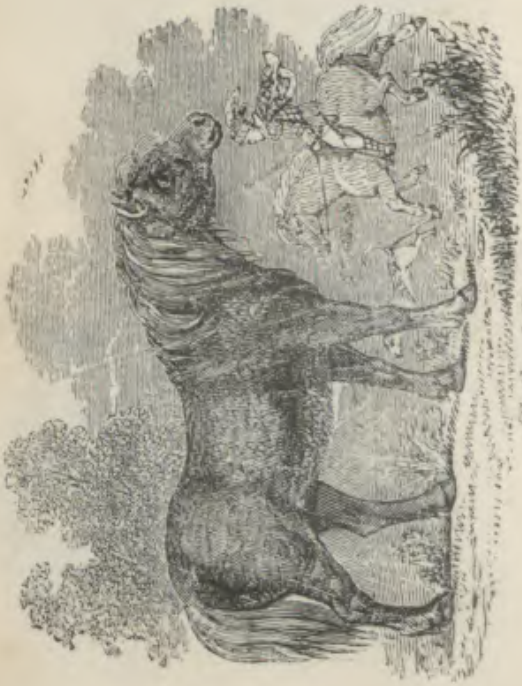

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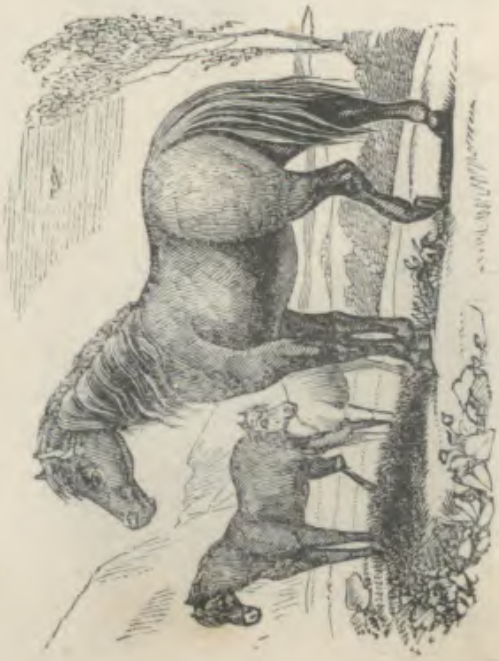

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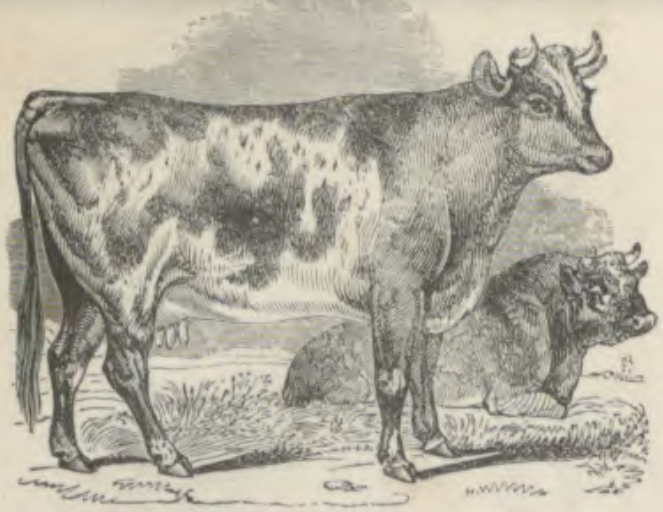

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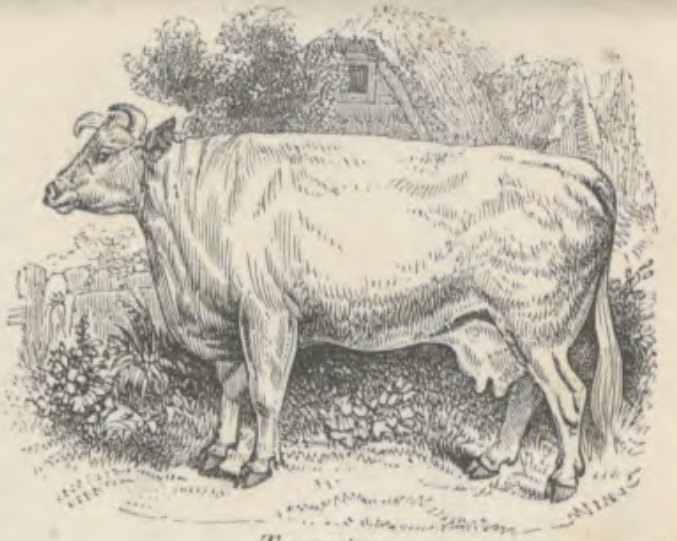

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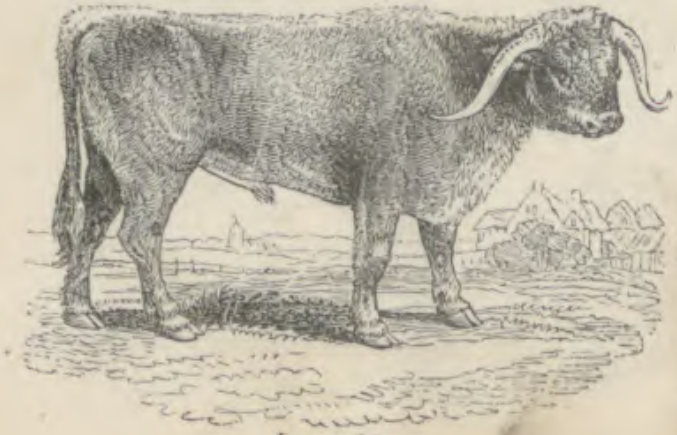

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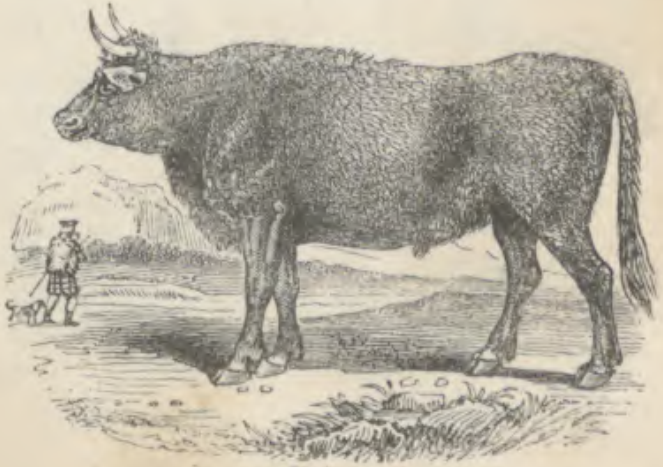

Kyloe.

THE

FARMER'S GUIDE;

A TREATISE

ON THE

DISEASES OF HORSES AND BLACK CATTLE.

WITH A SELECTION OF

PROVED PRESCRIPTIONS,

AND INSTRUCTIONS FOR

THE MANAGEMENT

OF

BREEDING MARES AND COWS.

BY JAMES WEBB,
VETERINARY SURGEON.

TO WHICH IS ADDED,

A FEW PRACTICAL REMARKS ON THE BREEDING AND MANAGEMENT OF SHEEP.

FOURTH EDITION.

BLACKIE & SON, QUEEN STREET, GLASGOW;
SOUTH COLLEGE STREET, EDINBURGH;
AND WARWICK SQUARE, LONDON.

MDCCCXXXIX.

W. G. BLACKIE AND CO., PRINTERS, GLASGOW.

TO

HIS GRACE THE DUKE OF GORDON,

PATRON OF THE MORAYSHIRE FARMER CLUB.

My Lord Duke,

Your Grace's benevolence and patriotic spirit, in promoting the interest and happiness of your country, is so well known and so generally acknowledged, not only by your numerous tenantry but by the public at large, as to render any further comment unnecessary. In the field you have bled for your country, in the senate you have advocated her rights. The arts and sciences acknowledge your fostering care; but the agriculturists of the north have especially to acknowledge the fervent zeal with which you have nourished this most important branch of knowledge.

Since the year 1814, when I engaged with the Morayshire Farmer Club as their Veterinary Surgeon, it is with much satisfaction that I have witnessed, under their distinguished exertions, the great improvement which has taken place in the breed of Horses and Black Cattle, and in every other branch of agriculture. All are ready to acknowledge that no small share of the praise for what has been accomplished is due to your Grace for your unremitting attention.

It is, therefore, with no slight feelings of gratitude, nor without a due sense of the honour conferred upon me, that, with permission, I dedicate this small volume to one whose heart is warm to the best interests of society, and who is pre-eminently distinguished as the farmer's friend.

That it may meet your Grace's approbation, by being serviceable to the agricultural part of the community, is the sincere wish of,

May it please your Grace,

Your Grace's

Most devoted, humble, and obedient Servant,

JAMES WEBB.

ADVERTISEMENT TO THE SECOND EDITION.

In offering this Second Edition of my humble Work to the Public, it would argue an ungrateful spirit were I not to acknowledge my gratitude for the kind manner in which the First was received by the Agricultural community in general; the best proof of which is, that the first impression was bought up in so short a period—only a few weeks; and those who have already had occasion to try my prescriptions, have told me that they have answered the end desired—producing a cure—which is the highest praise they could confer. Sure am I, while I endeavoured, in the simplest manner, to convey the result of my experience to others, my anxious wish was that it might prove beneficial; and I hope and doubt not, if careful attention be given to what I have stated in the work, much loss of stock may be prevented.

As it is my desire to avoid every thing extraneous, and perceiving nothing omitted in what I have written which is necessary to be known and attended to, I have made no alteration in the present edition.

J. W.

FOURTH EDITION.

To this edition the publishers have appended a brief Treatise on the Breeding and Management of Sheep, and have also introduced a number of correct and spirited illustrative Engravings on Wood; these two original features will, it is hoped, enhance the value of the book. To prevent liability to mistake, the medicines, blood-letting, &c., are expressed in this edition according to the imperial measures.

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DISEASES OF HORSES.

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INTRODUCTION.

In the year 1831, through the medium of the *Aberdeen Journal*, I gave some advice to farmers for the Management of Breeding Cows or Dairy Stock, which was much approved of by many gentlemen and farmers, who have, since that period, advised me to publish a small treatise on the Management of Breeding Stock, as a guide to the inexperienced. I was rather diffident to undertake the work, as so many eminent authors have already favoured the public with their discoveries in that very useful branch of knowledge; but, on the consideration that these scientifically-written books—though well adapted for the assistance of Veterinary Practitioners or men of learning—are very obscure and difficult to be understood by those of a more limited education, I flatter myself that a few instructions, written in a style more easy to be comprehended, may be useful to many; and it really proceeds more from a sense of gratitude I feel for the patronage and kindness I have met with from my employers, than from any lucrative views, that I submit this treatise to the public.

I have not entered into any critical points of Farriery, nor do I advise farmers to interfere with cases they do not understand, as they are more likely to do harm than good. I would recommend them to take the immediate advice of an experienced farrier. My object is to communicate such information as I think most useful and necessary for farmers or their managers to know—for accidents will often happen

to animals, that will not admit of delay, and where the necessary knowledge is wanting and no farrier can be had, consequently the animal dies for want of assistance—I therefore think it necessary for a farmer, who has so much of his capital invested in Horses and Cattle, to devote a part of his time to study their nature and constitution, and accidental cases; by which means he might often relieve his animals in distress and save his property.

Farmers have suffered much loss and disappointment of late years from their Mares and Cows not conceiving after copulation, the cause of which, I know, may be greatly removed by using the means I have pointed out in the following pages; and the number of Calves that have died within the last seven years is grievous to consider, the cause of which I have discovered to proceed, in most cases, from disease and impurities of the blood that have existed within their mothers while they were pregnant; this disaster, also, I am confident, may be checked by using proper means for purifying the mothers previous to copulation.

The above remarks do not proceed from conjecture nor imagination, but are the result of study and practical experience for upwards of twenty years. I therefore hope that those who may have occasion to use any of the means I have prescribed—in whatever case it may be—will follow the directions exactly as they are given, not to omit any part, either in bleeding or administering medicine—how contrary soever it may seem to their own ideas—for I have given no prescriptions but such as I have tried and proved to be uniformly successful. And as I have avoided all technical terms, unless where delicacy required them, so as to render my work intelligible and easy to be understood by every capacity; and have composed my prescriptions of the safest and simplest drugs, so that the farmer or his grieve can be in no danger in following my directions, I have

a strong hope that my work will meet the approbation of, and prove serviceable to, the agricultural part of the community.

It is probable that the plain and easy style which I have adopted may excite Veterinary Practitioners to ridicule my work; should this be the case, I shall not be the first who has come under the lash of censure, nor do I in all cases expect to escape the criticism of some farmers, who may have made a study of medicine and diseases. They may say that I have given them little more information than what they already knew; to this assertion I would reply that, for one person who knows as much, there are a hundred who do not, who may be equally interested in the preservation of their stock. My principal object, in writing this treatise, is to direct the farmer how to manage his stock to advantage, and to render his animals assistance in cases of necessity; and I shall be happy if, by this, I instigate any other to produce a better system of instruction for the benefit of the public; but I should ever recommend that it be done in the simplest and most perspicuous manner, as I have here endeavoured to do.

J. W.

ELGIN, *January*, 1834.

THE

FARMER'S GUIDE.

SECTION I.

ON THE MANAGEMENT OF BREEDING MARES.

I SHOULD only intrude on the patience of my readers were I here to enter into detail on the usefulness of this noble, generous, and serviceable race of animals, the HORSE; for I trust all those who are concerned with him are fully sensible of his value and benefit to man; and how much it is our duty, as well as our interest, to be careful in preserving his health, and to treat him with as much gentleness and kindness as circumstances will allow.

Although the Horse possesses great strength and spirit, yet his constitution is delicate, and his health may be soon injured by bad management or neglect; consequently, the care and management of Brood Mares have the first claim on a farmer's notice; for it is only from healthy progenitors that a pure offspring can ever be obtained. Stallions that are fostered and intended for public service are always, or ought to be, selected from the most healthy stock, and of the

finest symmetry, such as denotes power and action, for whatever purpose they may be intended, saddle, cart, or carriage; and they are in general more carefully attended to, and get more justice, than horses that are intended for hard labour; so that they are commonly healthy and in good condition. But breeding mares, particularly those that are engaged in farm labour, are often exposed to the inclemency of the weather, after violent exercise, and overpowered with draught or weighty loads, which crush and disorder the whole system. Under such circumstances they are too often neglected, which is the cause of disorder in themselves, of disease and death to their offspring. I do acknowledge that if they are not overpowered with work, are properly timed and fed with wholesome provender, that bleeding or purging is seldom necessary. But, on the contrary, for those that are injured, and their system deranged by the treatment I have described, or from similar causes, there is no possibility of restoring the diseased body to its proper tone, but by the reduction of blood and administering purifying medicine; or, in other words, these are the first means that should be used.

Farmers have been much disappointed in their mares not conceiving after the stallion. In these cases, the groom is commonly blamed for not managing the horse properly with regard to time, or the horse for want of ability. Every horse has not the same ability for propagation, and they

may be mistimed or enfeebled by extra service; yet, I will venture to affirm that, in seven cases out of ten, the failure is owing to the inability of the mare to conceive, which may happen from the causes I have already pointed out. If any impurities or imflammation exist within a mare, there is no part of the system more liable to be affected than the uterus or womb. This is the cause of so many failures in conception.

The semen which is extracted from a diseased, inflamed system, is so impure that it can scarcely unite with that of the stallion although the mares be in season for the horse; and should they conceive while their blood is in that deranged state, they are liable to cast their foals before time, or to produce diseased ones, that will either die in infancy or be subject to inflammatory attacks at all future periods of their existence. I therefore insist on the necessity of purifying or preparing mares previous to copulation, by which means a farmer may expect that his mares will conceive after the horse and produce healthy foals. But unless they are in a healthy state the hope is in vain. I have already said that I do not advise the reduction of blood, nor medicine, except in cases of necessity; but then I would recommend the following rules to be strictly attended to:—A mare that is intended to be covered—suppose in May—should be prepared in the month of March previous. Take about four quarts of blood from the neck, and give two of the under-mentioned

purging balls, allowing an interval of four days betwixt each purge. For each ball take

Barbadoes aloes, one ounce.
Rhubarb, in powder, one drachm.
Ginger, in powder, one drachm.
Mix with syrup or castor oil.

I will now lay down the rules necessary to be observed at all times when a purging ball is given. For a day or two before giving the ball, the animal should be fed with bran mash, or some other laxative food, to prepare the bowels. The ball should be given in the morning, and very little hay should be given for supper the night before the ball is given; and nothing should be given for two hours after the physic, at which time warm water and bran mash may be given, also, of good hay a very little at a time, and frequently. The mare should remain in the stable the day she gets the physic; the next morning, she should be warm clothed and taken out for walking exercise for ten minutes every two hours during the day. The purging commonly subsides by night.

Allow three days from the time the first purge has done operating before the second dose is given. Be careful to keep the animal from cold while under physic, and put her to no kind of work, except walking exercise, for two or three days. After the second dose has done operating, about ten days' rest is necessary. Some farmers may think the instructions I have given rather tedious, and may not be willing to allow the necessary time; but to

those who follow these rules with attention, time will prove the beneficial result of their trouble.

It is necessary to observe that, when mares have been put through a course of physic, their work should be light and the feeding good for some considerable time, till their strength and spirits are recruited. A few split beans mixed with their corn would be of great use, and what I would particularly recommend for some days previous to their being covered; for there is no kind of grain better calculated to strengthen the system and to assist nature in bringing them into season for the stallion. In some cases, mares that have been reduced by labour or disease, and have been put through a course of medicine, may have some debility in digestion, and not be appetized to take a sufficient quantity of food, which might retard the progress of their coming into season in proper time for the stallion, and, consequently, disappoint the farmer in the arrangements of his plan. In this case, I would recommend the under-mentioned cordial balls:

Anise seeds, in powder, two ounces.
Gentian root, in powder, two ounces.
Ginger, in powder, two ounces.
Oil of caraway, two drachms.

Mix the above with honey and divide it into four equal parts or balls. One should be given each morning for four successive days. The animal may be worked and fed in the usual way. These balls are well calculated to promote diges-

tion, and to assist nature in bringing the mare into season for the horse. They are also well adapted for any horse that has laboured under fever or any inflammatory disease, for bringing the stomach into proper tone. If a horse should refuse to take a ball, it may be mixed and given in a bottle of good ale or porter.

I now make a few remarks on a custom which prevails in the northern districts of Scotland—that of trying the mares so often with the stallion in the season of covering. This I am confident is a great error; for if a mare be in good habit of body and in proper season for the horse, she is more likely to conceive after the first than after being covered several times; for the second or third cover is more likely to destroy the effect of the first than otherwise. I am so fully persuaded of this that, if I were to get a mare of my own covered, and considered that she was in proper condition and season for the horse, I would rather keep her out of sight and hearing of a stallion than provoke her with one, to bring her into season a second time. There is diversity of opinion with regard to this practice, and I admit that there are few rules without exceptions. I also admit that, if a mare should show any symptoms of being in season after she is covered, it would be necessary to try her again, but otherwise it would be better not to bring her near a stallion; for some mares of warm temperament of body, if they are brought into contact with a stallion, may be pro-

voked and brought into season, so as to stand to him at any period of the year, and even after they are far advanced with foal. In support of this remark, I will relate a circumstance that happened a few years ago in the course of my rounds. A fine mare was covered late in the season and conceived, but her shape or formation was so much calculated to conceal it that her being with foal was not perceived. She was tried again with a horse early the next season and stood to him. A premature birth was the consequence, and both mother and foal died. I could give many similar instances, which for the sake of brevity I pass over, considering the one already mentioned a sufficient evidence, of the necessity of farmers being more careful in the management of their brood mares, in future.

The next point that ought to be considered is, the regulation of their work and feeding after they have conceived. Light work, if they are not overpowered, will do them no injury, even to the day of foaling; but weighty-loaded carts, particularly when they are forced to back, turn, and twist about, are very injurious, and often the cause of making mares cast their foals before the proper time. This accident often happens in the months of October and November, or when mares are about four months gone with foal, consequently it is necessary to be very careful in the arrangement of their work about that time. The mode of feeding and watering breeding mares should also be carefully

attended to, particularly as they come near their time of foaling. Do not let them drink too freely of cold water when they come in from the yoke in a state of perspiration, nor allow them to have much cold bait for a month or five weeks previous to foaling. They ought not to have more than about half of the usual quantity given to horses, *which is about a stone at each time.* The difference may be made up by giving them a little feeding of a more substantial nature. A little bait or mash food is requisite to keep the bowels regular, but an extra quantity of cold bait or any other watery food is very pernicious to the stomach. It deranges the whole system, and proves very injurious to both mother and foal. I would highly recommend the frequent use of nitre for horses, particularly breeding mares. An ounce of it may be given in a little bran mash or bait once or twice a-week, and, when near the time of foaling, an ounce may be given for eight or ten days in succession. Nitre operates as a mild diuretic and cooler of the blood, and is excellent for keeping back inflammatory affection from the womb; consequently, the operation of foaling is attended with less pain or danger.

If the directions I have given for the management of breeding mares are duly attended to, farmers may expect them to conceive after the horse, to produce healthy foals, and that they will be less liable to disease at future periods of their existence.

SECTION II.

ON DISEASES.

I WILL now endeavour to point out some of the most prevailing diseases to which horses are liable from their birth till age, and will give such prescriptions for their cure as I have found to be most successful in the course of my practice.

Young foals are very liable to costiveness or obstructions in the bowels from three or four days till they are a month old, and many have died in consequence. It is therefore necessary to examine them frequently, and give the following medicine as soon as the disease is discovered:—

Castor oil, three ounces.
Nitre, two drachms.

The above should be mixed in about three gills of thin oatmeal gruel, when it is boiling hot, and given to the foal when about milk warm, and the following clysters should be applied immediately after:—

Thin oatmeal gruel, three quarts.
Linseed oil, three gills.
Common salt, half a pound

Mix the above, and apply it about milk-warm. Three gills of the mixture is enough for one injection, and should be repeated every half hour till the medicine operates, which commonly takes

place in the space of six hours after with a young foal; or should it not operate within that time, the dose may be repeated.

The above rules seldom fail in removing obstructions in the bowels. The dose of castor oil may be increased to six or seven ounces for a strong foal, but less than three ounces should never be given.

I will now make a few remarks on the great utility of clysters or injections, in various cases, to horses and black cattle. They are excellent for obstructions in the bowels, for every kind of colic or fever, and are often used for supporting horses under disease when their appetite fails. I therefore think it necessary for every one who has the charge of horses and cattle to be in possession of some instruments for administering injections, for which purpose I would recommend a pipe and bladder in preference to a syringe. A pipe of eight inches in length should be used for calves and foals till they are six-quarters old; one of fourteen is necessary for a full-grown horse, and one of eighteen inches should be used for full-grown cattle. I have tried a great variety of compositions for clysters, and have found the following mixture to prove as efficacious for removing obstructions in the bowels, or in any case where purging is required, as the most expensive mixtures I ever used:—To every two quarts of oatmeal gruel add two gills of linseed oil and about a quarter of a pound of common salt.

Injections should always be applied about milk-warm, as near as can be ascertained. Some authors or writers on farriery recommend large quantities of the mixture to be injected at one time, but I have always found a little and often to prove most effectual.

I seldom, if ever, applied more than two quarts for one injection. In cases of necessity I have repeated it every half hour, but this should be regulated according to the urgency of the case.

SECTION III.

STRANGLES.

MOST young horses are subject to this disease. It generally attacks them betwixt one and four years old. It begins with an inflammatory swelling in the throat, betwixt the jaws, and causes much pain to the animal and a difficulty in drinking. As soon as this disease is discovered, a turnip poultice (with some hog's lard in it) should be applied to the part affected. The animal should be kept warm, and get bran mash and warm water; and an ounce of nitre should be given, mixed in the mash, every day, for several days. The poultice should be applied as hot as the animal can bear it, and be renewed every day, till the matter discharges, or is ripe to be opened with a lancet. The matter commonly discharges, or is

fit for opening, in the space of four or five days. As soon as the matter discharges freely, it is seldom that any other application is necessary, except to keep the part clean with soap and water, and to keep it warm for some days after the poulticing.

There is another disease called the BASTARD STRANGLES, which is much more dangerous, and many young horses have died in consequence of it. In this disease the matter forms in the inside of the throat, and the adjacent parts become so much swelled and inflamed, in some cases, that the animal can scarcely breathe. The symptoms that indicate this disease are, loss of appetite, stiffness, and the head kept in one position, as if the animal was afraid to move it, and a considerable degree of fever. In this disease bleeding is seldom recommended; but I have found it to be of the most essential service and recommend it to be done. From two to four quarts should be taken, and the after-mentioned medicine given, which is well calculated to check fever and to strengthen the stomach:—

Peruvian bark, half an ounce.
Nitre, one ounce.
Honey, four ounces.

The above should be given in a bottle of camomile tea, for one dose, and should be repeated every other day till the animal is recovered. His throat should be fomented with warm water frequently, and well rubbed with hog's lard. The

animal should be kept warm, particularly about the head and neck. Warm water or thin gruel should be given to drink, and a little walking exercise frequently should not be neglected.

I have had some desperate cases of this kind under my notice, and have known the throat swelled within to such a degree that the animal could not swallow anything, or, at least, not without danger of choking. In this case injections of oatmeal gruel prove of great use in supporting the animal. The under-mentioned gargle also is useful:—Take of vinegar and water equal parts, and a little honey mixed. It may be applied in the following way:—A bit of sponge or soft cloth should be tied securely on a piece of whalebone or thin canewood, dipped in the mixture, and passed up and down the horse's mouth, towards the gullet, two or three times as quick as possible. This process will remove the saliva or any matter that obstructs the breathing, and give the animal considerable relief. The above rules, if carefully attended to, seldom fail to cure the strangles in the most desperate cases.

I have treated on this disease at some considerable length, in hopes that it will excite attention; for I have known many hundreds of young horses that have died of it, although I have never had a single instance of loss in any case I ever had under my care, and the means I have pointed out are what I have uniformly adopted for the strangles.

SECTION IV.

LAMPAS, COMMONLY CALLED SQUILLS.

Most young horses are liable to this disease. It is known by the first bar in the roof of the mouth becoming more prominent or higher than the fore teeth in the upper jaw. The first bar in the mouth of colts is generally rather proud, but it is by no means injurious, till it gets red and inflamed, and rises considerably above the teeth, at which time it is very troublesome, and retards the animal from masticating his food; and, if neglected, he will become dull in spirit and low in condition. The cure is easily effected, by getting it burned out with a hot iron, and the part rubbed with a little salt. It should be cautiously done, not to go too deep, nor take more than the first bar. It should not be reduced more than the eighth part of an inch below the teeth.

SECTION V.

COLDS.

COLDS, if neglected, are the source of many diseases, such as fevers, farcy, glanders, asthma, &c. Colds proceed generally from obstructed perspiration, and may be caused by allowing

horses to stand long in cold weather after violent exercise, or by being allowed to drink too freely of cold water when they are hot. Colds are commonly attended with a degree of fever, less or more, according to the severity of the case and the habit of body a horse may be in when he takes it. If fever prevails much, it may be known by the following symptoms:—The horse will be very stiff and dull, his breathing hard and quick, with loss of appetite, and commonly much inclined to drink. In this case I would recommend from two to four quarts of blood to be taken from the neck, according to the age and strength of the animal, and the following medicine to be given:—

Cream of tartar, two ounces.
Nitre, one ounce.
Flowers of sulphur, half an ounce.

The above should be mixed and given in a bottle of camomile tea, with a considerable quantity of honey or treacle in it. This drink should be repeated every morning for four successive days. The animal should be clothed warm and get walking exercise frequently, and fed with warm bran mash, good hay, a little at a time, but frequently, and thin gruel to drink. Little or no corn should be given till the fever subsides.

Horses are often affected with epidemic colds and influenza in the spring of the year, which generally proceed from frequent and sudden transition of weather, from a mild moist air to piercing

cold easterly winds, which powerfully affects the animal's frame, by shutting up the pores of the skin and obstructing perspiration. In this case I would recommend the same rules that I have pointed out for colds, both in bleeding and medicine; for I have found it prove more successful than any means I ever tried. In some cases, when a dry cough prevails, there is a danger of its breaking the horse's wind. In this case I would recommend the following drink :—

Salt of tartar, half an ounce.
Flowers of sulphur, half an ounce.
Tincture of opium, three drachms.

The above should be given in a little gruel or small beer, in the morning, and be repeated for four successive days. The horse should fast for two hours after the medicine. He may then be fed in the usual way, but mostly on bran mash or boiled barley, and rather a scrimp allowance of hay.

SECTION VI.

GLANDERS, COMMONLY CALLED MORTERCHAIN.*

THERE are many different opinions amongst Veterinary Surgeons regarding the nature and cure

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* From *mort de chien*, death of a dog.

of this disease. It is generally supposed to be infectious, but at what stage of the disease it is so, still remains a matter of doubt, nor will I pretend to decide on this point; but I am fully persuaded that many horses have been condemned as diseased with glanders and have been destroyed, for fear of infecting others, when, no doubt, they might have been cured, had proper means been used.

I have had some cases of horses that were supposed to be glandered, and condemned as such, that I have cured, and the animals have proved useful for many years after.

I would wish my readers to understand that I have no intention to advise them to risk their horses that are sound with those affected with an infectious disease. I would rather recommend them, even on the supposition of a horse being diseased, to keep him in a place apart from the others; but I never would advise any one to have a horse destroyed or killed, on the mere supposition of disease, till some means were tried to recover him; for there are many causes which may affect a horse so as to bring on a running at the nose similar to glanders; and from whatever cause the discharge proceed, the glands under the jaws are always swelled less or more, according to the severity of the case. Colds, strangles, or an ulceration of the lungs, will cause a discharge from the nostrils and a swelling in the glands, as already mentioned; and as these diseases are often mistaken

for the glanders, I feel myself here obliged to make a small digression from my promise at the commencement of this work, not to enter into any critical points of farriery.

From the generally received opinion of the infectious nature of glanders, in the vicinity where it exists or is supposed to exist, a cry is immediately raised, and alarm excited, which has, in numerous instances, proved of serious consequence and loss to many, particularly to innkeepers, livery-stable keepers, &c.; and private individuals have often been placed in very disagreeable situations from the same circumstances. I will therefore endeavour to point out the symptoms that indicate confirmed glanders.

There are two kinds or stages of the disease; the first, or milder stage, may be cured by careful application, but the latter defies the power of medicine.

Glanders is known by a discharge from the nostrils and a swelling of the glands under the jaws. The animal's appetite or spirit is seldom affected at the commencement, but in course of time the discharge becomes more copious, and is often mixed with bloody matter very fetid and offensive in smell, which is owing to the inside of the nose being ulcerated. At this stage of the disease the animal often labours under a cutaneous scorbutic disease called farcy, the acrimonious humours of which fix on the pituitary membrane that lines the partition along the inside of the nose, which causes

ulceration, and penetrates even into the bones. At this stage of the disease the discharge is often confined to the left nostril. The glands become harder and more firmly fixed to the jaws, which constitutes a confirmed glanders, and is incurable and infectious.

I will admit, in this stage of the disease, that a sound horse may receive the contagion, yet I am confident that it more frequently originates in the system of the animal, or is brought on by other diseases and local causes, than by infection. I will therefore endeavour to point out the causes that lead in regular gradation to the glanders.

Colds proceed from obstructed perspiration, which diseases the absorbent or lymphatic vessels and contaminates the blood. The animal is very feverish and ill till nature relieves him in part by a discharge from the nostrils. If the animal be frequently exposed to colds, and no means used to relieve him, by reducing and purifying the blood, his whole system becomes deranged, and gets into a state of morbid debility, which generally constitutes the disease called grease, and the corrosive acrimonious humours of grease, by continuous gradation, if neglected, end in farcy, farcy in glanders, glanders in death.

On the treatment of grease I shall have occasion to enlarge in another section.

Horses may have a stated running at the nose and a swelling of the glands betwixt the jaws

very similar to glanders, yet nowise infectious; for I have seen a horse work in the same plough with such, week after week, and fed out of the same manger, without being in the least injured. But this running, if no means are used to check it, will exhaust the animal and bring him to a premature death. Whenever a running at the nostrils is discovered, the sooner means are used to cure it the greater probability is there of success.

I would first recommend about four quarts of blood to be taken from the neck. Let it stand till it is coagulated or congealed, and if there is an extra quantity of serum or yellow size upon the top of it, other two or three quarts should be taken in ten days or a fortnight after, and the under-mentioned medicine given:—

Flowers of sulphur, four ounces.
Antimony, in powder, four ounces.
Calomel, five drachms.
Venice turpentine, four ounces.

The above should be mixed and made into a paste, and divided into eight equal parts or balls. If the paste be too stiff or dry to mix, add a little syrup of ginger to it. One of these balls should be given every morning for eight successive days. Commence with them immediately after the bleeding; and the following purging drink should be given every other day while taking the balls. For each dose take—

Cream of tartar, three ounces.
Epsom salts, four ounces.
Ginger, in powder, half an ounce.

The above should be given in a little thin oat-meal gruel, with a table-spoonful of salt in it. The ball should be given early in the morning, and the purging drink in about five hours after the ball. Let the animal fast for four hours after the drink. He should be kept warm and dry while taking the medicine. Warm water and bran mash or boiled barley should be given, and walking exercise frequently, but no work. Twelve or fourteen days' rest is necessary. I have given the eight balls and four purging drinks in regular order as above described, but that depends on the constitution of the animal. Should he purge too much, the medicine must be omitted for two or three days and then be commenced again. The medicine, both the ball and the purging drink, is calculated for a full-grown horse, and may be reduced according to circumstances. At the same time, it should be observed that, unless the animal is well purged, there is little chance of succeeding in the cure. In desperate cases, when the disease or running at the nose is of long continuance, and any symptoms of a chronic glanders, I have given a strong purge after the animal had recovered his strength from the former medicine, and what I would highly recommend. Take—

Barbadoes aloes, in powder, six drachms.
Rhubarb, in powder, one drachm.
Calomel, thirty-five grains.
Ginger, in powder, one drachm.

The above should be mixed with syrup, and made into a ball for one dose.

The animal should be prepared with bran mash, and managed in the same way as directed in the section on breeding mares.*

The animal will be considerably weakened by the medicine, and consequently light work and a little extra feeding will be necessary; and a little malt mash should be frequently given, which is excellent for recruiting the blood and bringing the animal into condition.

I seldom or ever found the means I have pointed out to fail in curing a running at the nostrils, unless in a confirmed glanders; and I have often succeeded in curing very bad cases of cough and asthma in horses, with the same medicine, and by the same rules that I have pointed out for a running at the nose, and can confidently recommend it.

SECTION VII.

COLIC.

THIS complaint frequently happens amongst farm horses, and is often brought on by mismanagement in feeding, or in the change from dry to green food.

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* See page 4.

There are different kinds of colic—such as *flatulent* or *windy colic, dry colic and gripes,* and *inflammatory gripes.* The symptoms displayed whilst a horse is labouring under these different accidental cases, are so very similar that I think I can communicate more serviceable information to the inexperienced, for the management of the animal, by pointing out the causes that produce the disease, than I could by giving any long description of the symptoms the animal shows while in pain.

1*st, Windy colic or fermentation of the stomach.*—This disease often happens when horses are first put to grass. The animal's stomach and intestines being previously charged with dry food, he eats so greedily of the green succulent herbage (which is very cathartic or purgative) that it produces a fermentation in the stomach, and swells the animal to a great degree, and many hundreds of valuable animals have died in consequence. As soon as the complaint is discovered give the following medicine :—

Oil of turpentine, one ounce.
Sweet spirits of nitre, one ounce.
Oil of caraway, half a drachm.

The above should be given in a little thin gruel, with two table spoonfuls of salt in it; and the under mentioned injection should be applied immediately after :—

Thin oatmeal gruel, two quarts.
Linseed oil, one gill.
Common salt, four ounces.

The above should be mixed and applied about milk-warm. If the animal is not relieved in the space of an hour after the medicine and clyster, take from three to four quarts of blood from the neck, and repeat the injections every fifteen minutes till the animal is relieved. It should be always observed, when a clyster is given to a horse, that some person should pare his finger-nails short and rub his hand and arm with a little of the mixture and pass it up the horse's fundament as far as he can reach, to bring away any dung that may be in the rectum, that it may not obstruct the passage of the clyster. In some cases, there is little to be got within the reach of the arm. However, the operation can do no harm, and is often of the most essential service to the animal.

2*d*, *Dry colic and gripes.*—This disease is most prevalent in the winter season. It may happen from various causes, and frequently from allowing horses to stand too long in the stable on dry meat, and not getting sufficient exercise for circulating the blood and promoting digestion. This mismanagement often brings on costiveness and obstruction in the bowels. In these cases the animal is frequently much pained with a suppression of urine, which proceeds from a pressure of dung on the neck of the bladder. This may be removed by passing the hand up the fundament to bring it away. The same injection should be applied that is recommended for windy colic, and should be repeated every hour till the animal is recovered. If

the horse be much pained with gripes after the injection has been applied, give the following:—

Sweet spirit of nitre, one ounce.
Tincture of opium, half an ounce.

The above should be given in a little thin gruel, with two or three table spoonfulls of honey or treacle in it. The animal should be well littered with straw, that he may not bruise himself when he lies down or rolls, which horses will do with great violence when they are much pained with gripes. To rub the animal hard and well with straw is also very serviceable in this case.

It is dangerous to give much purging medicine to a horse when he is costive or much bound in the bowels. I have often heard of fatal consequences arising from this; but should the case become obstinate and the animal not get passage, a bottle of castor oil may be given, divided into three parts, allowing two hours of an interval between each part, and giving walking exercise frequently. This kind of colic very seldom happens with farm horses since the use of steamed or boiled bait has become so general.

3*d*, *Inflammatory gripes.*—This disease is more dangerous than other colics, and has often proved fatal. It commonly attacks horses that have been hard tasked with work, and their blood contaminated by excessive heats and colds. This disease may be distinguished from flatulent colic

by the following remarks :—The animal often lies down for a short time, but seldom rolls upon his back; his legs and ears cold; pulse quick and weak; his mouth hot and dry; and he often voids small quantities of dung, with hot water, which is very offensive in smell. When these symptoms are perceived, take about four quarts of blood from the neck, and give the following medicine :—

Peruvian bark, half an ounce.
Nitre, two ounces.
Tincture of opium, half an ounce.

The above should be given in a little gruel about milk warm. In an hour after give two-thirds of a bottle of castor oil. An injection should also be given every half hour till the medicine operates. The injections should be prepared as directed for windy colic, with an addition of two ounces of glauber salts in each injection. In desperate cases of inflammatory gripes I have drawn blood four times in the space of eight hours; but, after the first bleeding, I would not recommend more than a quart to be taken at each time; and, if bleeding so often and quick in succession be necessary, I think it best to take it from different parts of the animal —on each side of the neck and from each thigh vein. I have found these means to prove successful in all cases of inflammatory gripes.

Horses are often griped after taking an extra drink of water, particularly in frosty weather; and also in the summer time when, after they come in warm from their work, they are put out to grass

in a cold rainy day. Mares, that are suckling their foals, if turned out in the same manner, are also very liable to be seized with griping pains. In these cases, there is nothing better than a stimulating cordial drink. Put about two dram glasses of whiskey into a bottle of good ale, with a little ginger or pepper in it, made palatable with honey or sugar, and give it about new milk warm. Clothe the animal warm, and give a good bed of straw.

In the course of my practice I have often met with cases of obstruction in the bowels of horses so obstinate to remove as to resist the power of medicine, even calomel and the strongest preparations of mercury could not force a passage, and I have succeeded by hot bathing when otherwise death must have been inevitable. I have found the operation of hot bathing so very serviceable in obstructions in the bowels, both of horses and black cattle, that I cannot too highly recommend it. I was formerly obliged to an eminent physician * for this information, and I have saved the lives of many valuable animals by the application when I could not do it by any other means; and, confident of its usefulness, I will give a description of the way in which it should be performed. When the horse is lying down, as he frequently does while in pain, take the advantage of him, and push him over on his side. Let an active man or two take charge of his head, which should be kept back (so

* The late Dr James Coull of Ashgrove.

as not to injure or obstruct his breathing) and kept down on straw. Bind his fore-legs together, and also his hind-legs. Stretch them out, his fore-legs towards his head and his hind-legs back, and let them be held firmly down in that position. Then cover him with a blanket or rug, large enough to reach from his shoulders to his buttocks and to fold under his back and belly. Have a supply of boiling water, and some cold water to temper it. Make it as hot as a man can bear his hand in it. Then put it on the horse, little and little at a time, till the rug that covers him is completely soaked. When applying the water it should be clapped with the hand, which makes the cloth take it in the more readily. As soon as the water is applied, there should be three folds of blankets, or any other such covering, put over the horse to keep in the steam. In five minutes after, roll back this top covering, and put a fresh supply of water on and cover him again. A little hot water should be applied every five minutes for about an hour. Each shifting of the covering and application of the water should be executed as quick as possible to keep in the steam. The animal will groan and seem in pain while the operation is going on, but let this not prevent its execution. As soon as released he should be well dried, and covered with blankets as quick as possible to keep him warm. Also prevent any current of air that may be in the stable. In some cases of this kind, when the medicine begins to operate, the animal will be much griped,

and will sometimes purge to excess. In this case give the following:—

A bottle of good ale.
Tincture of opium, half an ounce.
Oil of caraway, half a drachm.

Mix the above with a little honey or sugar, and give it new milk warm. If oil of caraway be not at hand, put two tea spoonfuls of ginger or pepper into it. It is necessary to be careful in taking off the covering from the horse, to do so by degrees to prevent cold.

I have been in the practice of hot bathing cattle exactly in the same way as I have directed for horses, only that cattle will bear the water some degrees hotter than horses.

SECTION VIII.

WORMS.

WORMS are very troublesome and destructive to horses. There are three different kinds of them; but those that breed in the stomach, termed botts, are the most mischievous and dangerous. They often adhere to the sensible parts of the stomach and cause ulcerations, which produce excessive pain and uneasiness to the animal. I have heard of instances of horses being so much griped and pained with botts in the stomach that it has been mistaken for a colic, and there are instances re-

corded of horses having died in consequence of the pernicious effects of these vermin.

The principal symptoms which indicate that a horse is troubled with worms are, when he gets dull in spirits, gradually falling off in condition, and becomes hide-bound, with a rough unhealthy-looking coat. On the supposition that a horse has worms, his dung should be regularly examined; for if they prevail to a great degree, some of them frequently come off with the excrements. When this is observed, the sooner means are used for destroying them the better; for which I would recommend one ounce of antimony to be mixed in a mash of ground malt and given at night, and the following medicine in the morning:—

Castor oil, eight ounces.
Oil of turpentine, two ounces.

To be given in a little gruel for one dose.

The malt-mash and antimony should be given at night, and the medicine in the morning, for two days in succession. The animal should get nothing for three hours after the medicine is given in the morning, after which time he may get warm water and bran mash. Walking exercise is necessary; but the horse should not be exposed to rain or cold while under the medicine. In desperate cases of worms, and when the constitution of the animal is strong and able to bear it, I have given the medicine three days in succession; but it should never be given less than two. Linseed oil may be given in place

of castor oil, if it can be got more conveniently, but rather more in quantity should be given.

I have tried many experiments for killing worms, and have used a great variety of medicines, such as savin, tobacco, the strongest preparations of mercury, and metallic substances, but the means here pointed out I have ever found to be the safest and most effectual for destroying every kind of worms in horses.

SECTION IX.

WOUNDS AND BRUISES.

As wounds and bruises often happen amongst farm stock, I will endeavour to point out the means that should be used in various cases.

If a wound is made with a sharp cutting instrument in a fleshy part of the animal, the lips of the wound should be closed equally together, and sewed with a proper surgical needle and whited-brown thread about six fold, or large enough not to cut the wound; each stitch should be tied separate, and between each rather better than an inch of space should be left. A little lint or cotton caddis should be put on the wound and bound up with a flannel bandage; or, should it be in a part where a bandage cannot be applied, a sticking plaister should be put over the wound to shield it from air, dust, or any other thing that might prove

injurious to it. The first dressing should not be removed for three or four days, at which time suppuration takes place, unless it should heal by the first adhesion, which will often take place if the animal is in good habit of body; but if any suppurated matter appears on the lips of the wound, it should be carefully cleaned with a little lint or a soft towel, and a little dry caddis put on and bandaged up as before. After the second dressing, if much matter clogs about the wound, it may be washed with soap and warm water every day for several days, and a little dry caddis put on the wound. The animal should be kept quiet, and his drink made about new milk warm, and two ounces of nitre should be given every day for four successive days, one ounce at night and the other in the morning, in a little bran mash or boiled barley.

The above treatment is calculated to heal flesh wounds in less time than any ointment, salve, or styptic I ever tried.

Wounds that happen by puncturing, or stabbing by paling, or other causes, should be carefully examined with the finger, to take from out the wound any splints of wood, gravel, or other extraneous matter, and dress it with an equal quantity of hog's lard and Venice turpentine melted together—the mixture to be applied with a feather; and a little dry lint should be put in the mouth of the wound and bandaged up. The first dressing should remain three days, by which time the wound commonly suppurates; it should then be cleaned once or

twice a-day, by means of a little lint secured on a bit of cane and passed up the wound to clear away any matter. The wound should be dressed with a feather dipped in a little brandy or tincture of myrrh, and a little lint kept in the mouth of the wound to keep it open till the bottom part gradually heals up. The animal should get warm water and bran mash, with nitre in it, as before directed.

In any case when the puncture or wound is deep (if in a fleshy part), and the entrance of the wound small, it should be opened or extended with a lancet, otherwise there is a danger of its closing up and confining the matter before the bottom parts are healed, which has often been the cause of serious consequences.

In the course of my practice I have always found that a flesh wound (if a clean cut, and the animal in good habit of body) will heal with the first intention (adhesion), or with little trouble; but puncture wounds that are lacerated or much contused, it would be the greatest absurdity to pretend to heal them by styptics till they are first brought to suppuration (wounds or contusions in the joints excepted, for they should be treated in diametrical opposition to flesh wounds), for which purpose the digestive ointment I have already mentioned is well adapted, but should not be used longer than a good matter appears. There is nothing then necessary but to keep the wound clean and the orifice open with a little dry lint till the bot-

tom part heals gradually, which may be accomplished by the application of a little brandy, as before directed.

In case of a considerable vein being cut, so as to endanger the animal by loss of blood, the end of the vein should be taken up and tied, if any one is at hand that can do it, if not, it may be stopped by applying a considerable quantity of lint to the wound, and binding it up. As soon as the blood shows through the dressing, put some flour on the part, and put another bandage above it, which will soon stop the blood.

SECTION X.

WOUNDS AND CONTUSIONS ON THE JOINTS.

THESE cases are commonly very difficult to cure, as it is dangerous to encourage suppuration near any joint, particularly if the wound or puncture reaches near the ligamental pus that surrounds the joint, as there is a danger of bringing off the synovia or joint oil, which is often the cause of stiff joints and incurable lameness; and as strong styptics should be used to dry up the wound and to check suppuration, it is particularly necessary to use means to keep back inflammation from the part affected, by bleeding the animal and keeping the bowels open with cooling medicine, aud using fomentations and cooling embrocations to the bruised

or swelled parts. The following liniment, or styptic and poultice, is what I would recommend for a wound or puncture on the joint:—

Blue vitriol, in powder, one ounce.
Alum, in powder, one ounce.
Vinegar, one gill.
Drained honey, two ounces.

The vinegar should be made boiling hot, and the other ingredients mixed in it. The wound should be dressed with the above mixture, and a little lint laid on the wound. The parts round about should be well rubbed with hog's lard, and the following poultice put over the dressing:—

Camomile tea, one quart.
Dissolve in it one ounce of sugar of lead.

Mix wheat bran in it till it becomes of proper thickness for a poultice. The mixture and poultice should be quite cold before they are applied, and both should be renewed to the part affected every day for three or four days.

If the animal does not lose any considerable quantity of blood by the accident, it would be necessary to take from one to four quarts from his neck immediately after, and give the following medicine:—

Nitre, two ounces.
Cream of tartar, five ounces.

The above should be given in a little gruel, with some honey or treacle in it, and repeated for three or four days in succession. The animal should be

kept quiet, and get warm water and bran mash while taking the medicine.

Should the accident happen in a part where a poultice cannot be applied, the part should be fomented with camomile tea, with some sugar of lead and vinegar in it.

Should a contusion or bruise happen on or near any joint, and no wound inflicted, the styptic I formerly prescribed will be unnecessary; but bleeding and medicine, and the poultice or fomentation should be applied without delay. I have known many instances of horses getting kicked and injured in the joints from various causes, which appeared so slight and trifling at the time, that the owner took no notice of it, but kept the animal at his usual employment; while, in the course of two or three days, the part became so inflamed and swelled as to put the horse off from work four or five months before he could be cured, when, probably, if the means I have here pointed out had been used when the accident first happened, four or five days might have been sufficient to restore the horse to his strength and enable him to resume his labour.

In all cases, when a horse is much bruised, from whatever cause it may happen, supposing the animal should show no symptoms of lameness at the time, I would particularly recommend the reduction of blood and cooling medicine as a means of preventing worse consequences. Nitre and cream of tartar are excellently adapted for cooling the

system and keeping back inflammation; but it is necessary to repeat the dose several days in desperate cases.

SECTION XI.

SORE SHOULDERS, &c.

FARM horses are very liable to be injured on the shoulder or back with the collar or cart saddle. In these cases styptics are commonly used to dry up the wound, which is quite contrary to the nature of this kind of sores. Lime water and linseed oil are what I have found most beneficial in these cases. It may be prepared in the following way:—Put two quarts of water upon two pounds of unslaked lime; let it stand till the ebullition is over, then pour off the liquor for use, and add five gills of linseed oil and two ounces of sugar of lead. Mix them well together, and keep the solution in a bottle for use. When the animal comes in from work at night, the sores should be washed with soap and water, dried with a soft towel, and dressed with a feather dipped in the mixture. This process should be repeated every night till the sores are healed, observing to shake the mixture well every time it is used.

When a horse is injured by the harness, it is necessary to examine what part of it caused the injury, and get it removed by altering the stuffing

of the collar or saddle, that it do not press on the sore; for if a wound be constantly irritated, it is hardly possible to heal it. Too few that have the charge of horses consider properly how little is the cause that will irritate and injure them, and make them either dull and spiritless or refractory and spiteful; and I would therefore enforce on those who work them, the incumbent duty that devolves on them to adjust the harness for the care or comfort of the animal as much as possible.

For any wounds that happen near the foot, or betwixt the hair and the hoof, from trampling, stabbing with nails, or other causes, I would recommend Barbadoes tar for the cure, in preference to any thing I have ever yet tried. Tar is excellent for healing and encouraging the growth of the hoof. Some horses' hoofs are very brittle and liable to crack; in this case there is nothing better than to wash frequently with old urine, and bandage them up with tar.

SECTION XII.

STRAINS IN VARIOUS PARTS.

ALL horses are liable to these accidents, but they more frequently happen to those that are employed in field sports, such as hunting or coursing. The parts of the animal that are commonly affected are, the pastern, flexor or back tendon, and shoulder.

In the hind leg, the fetlock, stifle, and round bone. I have devoted a considerable part of my time and study to these cases, and have always found inflammation to prevail or affect the parts less or more according to the severity of the strain; and am fully persuaded that reduction of blood, cooling physic, with fomentations and emollient preparations, applied to the parts affected, prove the most effectual and expeditious mode of cure.

Strains proceed from an unusual or violent ex tension of the muscles, ligaments, and tendonous fibres that surround or cover the joint, consequently, whatever means are used, time and rest are indispensably necessary to complete the cure.

In whatever part or joint the strain may happen, take from two to four quarts of blood, according to the violence of the strain and strength of the animal, and give the after mentioned medicine:—

Barbadoes aloes, in powder, six drachms.
Rhubarb do. half an ounce.
Nitre, two ounces.
Tincture of ginger, half an ounce.

The above should be divided into two parts. One part should be given in a little gruel immediately after the accident is discovered, and the other part should be given in six hours after. The animal should get bran mash and warm water, and be kept as quiet as possible. After the first medicine has done operating, one ounce of nitre and two ounces of cream of tartar should be given in a little gruel every day, for four or five days, to

keep the bowels open. The part affected should be well rubbed with hog's lard, and the following bath laid on:—Take a considerable quantity of dried camomile flowers. Add as much boiling water as will swell them, but not more than the flowers can contain, that the juice or strength be not lost. Then mix a gill of vinegar to the bath, and apply it to the part affected as warm as the animal can bear it. This bath should be repeated every day for three or four days. A little warm water should be added occasionally, to keep the bath moist. If the accident should happen in a part where a bath cannot be applied, the part affected should be fomented frequently with camomile tea, with some vinegar and sugar of lead mixed in it. After the bath or fomentation has been used as long as is thought necessary, or till the inflammation has apparently subsided, the following bracing mixture should be used:—

Spirit of sal ammoniac, two ounces.
Camphorated spirit of wine, two ounces.
Sugar of lead, two ounces.

The above ingredients should be mixed in a choppin of water, and the part affected should be well rubbed with the mixture twice a-day for several days, and bandaged up middling tight. Observe to shake the mixture well every time it is used.

For a strain in the shoulder, I have found a rowel in the chest to prove very serviceable; or, if a horse should be strained in the stifle or in the

round bone, I would recommend a rowel to be put in the thigh, and the other means used, as I have directed above. If any hard swelling remains after the inflammation has subsided, and the animal in the way of recovery, blistering will be the most effectual means of removing it.

In all cases of strains, the animal should be put into a roomy place, where he can step about at his own convenience or as he may feel himself able, as it is better to bring the affected parts gradually into action. For if the animal be forced on to exertion when he first begins to recover, it will almost to a certainty renew the complaint, and retard the progress of the cure probably three times as long as might otherwise be required. I could add a number of recipes for strains, which I have tried, but think it quite unnecessary, for the means which I have pointed out are easily obtained, and are what I have proved to be the most successful; but as I have before observed, whatever means are used, TIME and REST are indispensable.

Strains and hurts in the kidneys occasionally happen to farm horses, and are generally caused by extra exertion in drawing a loaded cart through a boggy place. The injury may be known by the following symptoms:—The animal will be very weak in the back, will yield to the pressure of the hand on his loins, feel difficulty in making water, the urine often dark coloured, and sometimes mixed with blood. This complaint is often attended with fever and loss of appetite. In this case I

would recommend the following medicine to be given every day for four successive days. For each dose take—

Salt of tartar, one ounce.
Cream of tartar, two ounces.
Nitre, two ounces.

The above should be given in a bottle of camomile tea, with some honey or treacle in it; and a strengthening plaster should be put on the loins. For which take common pitch and tar, an equal quantity of each, to be melted and mixed together, and applied over the loins, quite warm. A piece of woollen cloth should be put over it while warm, to make it adhere to the part. Let the animal get bran mash and warm water.

SECTION XIII.

GREASE.

THERE are many different opinions regarding the cause and the cure of this disease. I believe it commonly proceeds from weakness and a general debility of the system. I have always found in bleeding horses that were affected with grease, that their blood contained an unusual quantity of serum or yellow size, like melted glue. This evidently denotes that the disease originates in the blood, consequently bleeding and purifying medicine are the principal means to be used for the cure. When

a horse is discovered to swell in the hind legs, between the fetlock and hock, while standing in the stable, and it partly disappears with exercise, there can be no doubt of his being inclined to grease; for which I would recommend some blood to be taken from the thigh vein. If both legs swell, some blood should be taken from each thigh vein, but not at the same time. There should be three or four days of an interval betwixt each bleeding, and give two of the following purging balls. For each ball take—

Barbadoes aloes, seven drachms.
Rhubarb, in powder, two drachms.
Ginger, in powder, one drachm.

The before-mentioned ball should be mixed with syrup or castor oil.

The horse should be treated as I have formerly directed when a purging ball is given (see page 4). The second purge should be given after a due interval, but must be regulated by the strength of the animal.

Horses that are exposed to go through rivers or wet marshy ground, and are often allowed to stand with their legs wet and cold, are very liable to crack in the heels, and sometimes it will be attended with a considerable degree of inflammation and pain to the animal; in which case, I would recommend a poultice of turnips and bran, with some hog's lard in it, to be applied to the heels for two or three days. It may then be dressed with the following astringent ointment, which will soon heal the part:—

Venice turpentine, two ounces.
Hog's lard, two ounces.
Alum and sugar of lead, each one ounce.

The hog's lard and turpentine should be melted together, and the powder mixed through it, and applied to the part with lint or cotton caddis.

Horses may have cracked or sore heels from various causes, when otherwise they may be quite sound in their constitution and not at all inclined to grease. High fed horses, when neglected in getting proper exercise, are very liable to swell and break out or crack in the heels, which proceeds from acrimonious humours of the system that settle in the part. I have known very bad cases of ulcerated heels from this cause.

In desperate cases of ulcerated heels I would recommend the following poultice:—Wheat flour, one pound (second flour is best); moisten it with new milk to a proper thickness for a poultice, then add three or four table spoonfuls of yeast (barm). Let it stand near a fire till it begins to ferment, and apply it to the part affected. This poultice should be repeated every day, for several days, and the part should afterwards be washed with the following astringent lotion. Take of—

Corrosive sublimate, two drachms
Camphorated spirit of wine, two ounces.

Dissolve the sublimate in the spirit of wine, and put it into two gills of water. Dress the ulcers with a feather dipped in the mixture, and apply the astringent ointment, and bandage it up as be-

fore directed. The lotion and ointment should be applied every day till the ulcers are healed up. In this case also a purging ball or two should be given, and diuretic powder should be given frequently. Strong diuretic or urine balls are often used in these cases; but I find that an ounce of nitre powdered, and given frequently in a little bran mash, has equally as good an effect, and is better adapted to the constitution of the animal; for strong diuretic balls will weaken a horse to a considerable degree; and, if given in too quick succession, there is danger of bringing on an inflammation in the kidneys.

In the course of my practice, I have had many instances of horses swelling in the hind leg, from the fetlock to the stifle joint, in the course of one night; when they have gone into the stable at night apparently quite well and no sign of swelling. This is commonly termed a shot of grease. The animal in this case can scarcely lay his foot to the ground, and feels most acute pain by the pressure of a finger on the vein in the inside of the thigh, so much so that he will draw up his leg to such an extent as to be in danger of falling or throwing himself over in consequence. In these cases it is evident that the diseased, inflammatory matter (that takes its seat in the limb in so short a time), must have existed within the system for a considerable time previous. I will endeavour to make some explanatory remarks on this point in the next section.

For a shot of grease, as above mentioned, I would recommend the swelled leg to be fomented with warm water, as hot as a man can bear his hand in it conveniently, and continue to bathe it for a considerable time. As soon as the vein is perceptible in the thigh, take a good quantity of blood from it, at least four quarts. The leg and thigh should frequently be fomented the first day, and dried well with a towel every time it is bathed. At night the swelled part should be well rubbed with hog's lard, particularly the inside of the thigh. In this case also I would recommend a purging ball; but, before the purge is given, for three successive days give the following powders:—

Crocus of antimony, three ounces.
Nitre, in powder, six ounces.

Mix them well together, divide into six parts, and give one at night and one in the morning, till they are done, in a little bran mash or boiled barley. The swelling commonly subsides in the space of three days, by using the means I here prescribe; but I never think the cure complete till the animal has got one or two purges; for if this be neglected, there is a danger of the disease returning again; and the second attack is commonly more severe than the first, and more difficult to remove. Therefore I recommend the following purging ball. For each ball take—

Barbadoes aloes, six drachms.
Rhubarb, in powder, one drachm.
Calomel, thirty-five grains.
Ginger, in powder, one drachm.
Mix with syrup.

The animal should also be treated as formerly directed in page 4.

I would recommend in all cases, if a horse swell in the legs, or show any indication of grease, to give frequently some of the nitre and antimonial powders, as before directed.

SECTION XIV.

FARCY.

FARCY, as well as glanders, is generally supposed to be infectious. There are also different kinds or stages of it. The first or mildest stage of it is when the small tumours or farcy buds are seated about the head, shoulders, and hips. The second, or the most malignant stage of it, is when the veins in the inside of the thigh and fore arm become corded and set with tumours. These buds are small and hard at first, but soon extend and become full of thin, acrid, poisonous matter, and often turn into inveterate ulcers.

When these tumours break and discharge copiously, the disease is thereby considerably mitigated, and the animal relieved of a part of that

corrosive humour, which otherwise, if due care be not taken to prevent it, would spread through and contaminate the whole system, until it should vent itself by a discharge from the nostrils; which is the malignant stage of the disease, and is commonly termed the farcy glanders.

In the course of my practice, I have generally found that the greater the number of these buds or tumours that fill and discharge their contents, the less likely the animal is to discharge it at the nose. It is evident that the disease first originates in the blood, the acrimonious humours of which spread through the system and affect the absorbent or lymphatic vessels, and cause these buds or tumours. In the first stage of this disease, or as soon as it is discovered, I would recommend the following purifying powders:—

Nitre, six ounces.
Antimony, three ounces.
Flowers of sulphur, three ounces.

The above should be well mixed, and divided into twelve equal parts. Give one at night and one in the morning for six successive days. The powders should be given in a little bran mash or boiled barley and warm water to drink. At the end of six days, or when the powders are done, give the following purging drink:—

Glauber salts, two ounces.
Rhubarb, in powder, one ounce.
Tincture of ginger, half an ounce.

The above should be given in the morning,

while the horse is fasting, in a bottle of warm ale, with a little honey or treacle in it. The horse should be kept warm and get walking exercise often. In many cases of farcy I have given three courses of the powders and three of the purging drink, and have found them to prove effectual in purifying the system.

If more than the first course of powders and purge be given, three or four days of an interval should be allowed betwixt each course.

If the inside of the thighs or fore arms be much corded, they should be fomented frequently with warm water, and dried with a towel. The tumours should be rubbed with a very small quantity of mercurial ointment, and as soon as they become soft to the feel, they should be opened with a lancet and washed frequently with alum water—about an ounce of alum dissolved in a gill of boiling water. If the tumours begin to ulcerate, there is nothing better than the actual cautery (hot iron). An instrument similar to the heater of a small Italian iron is the best adapted for the purpose, which may be introduced into the ulcer when it is at a dark-red heat. The part should be well seared, but not so as to injure the large vein that goes through the inside of the thigh.

The rules I have prescribed commonly succeed in curing the farcy, if they be applied at the commencement of the disease; but if it be neglected till it comes to that malignant stage (to

discharge at the nostrils); thus seated it is vain to attempt to remove it by the power of medicine. The instrument of death is the safest and most charitable application.

I will now endeavour to lay down some general rules necessary to be borne in mind, and to make some useful and explanatory remarks on different diseases, showing how, when neglected, one leads to the other, till disease on disease multiply, and render what might have been easily prevented by timely application a difficult matter to cure. I would therefore beg the particular attention of my readers to these remarks, in which they will perceive the chain of gradation in the diseases, and learn how to apply the means for preventing most of those inflammatory and fatal diseases to which horses are liable, and which have caused the death of many thousand before they had reached the meridian of their days.

I have already treated on colds at some considerable length, but here beg to make a few additional remarks on that head.

Colds are, in general, so little thought of by the owners of horses, that I have often heard them remark in such cases, "It is only a common cold, and the animal will soon get well again," and no farther notice taken of it. Obstructed perspiration is the first leading cause of the greater part of inflammatory diseases which horses are liable to, and the first consequences are evidently distinguished in what is termed a cold.

When colds are neglected, the blood becomes contaminated, and the functions of the whole system become disordered. The membrane which lines the inside of the nose and throat is inflamed. This membrane also communicates with, or forms the internal surface of the windpipe and its branches (which spread through the lungs). The animal suffers much from sickness and fever, till nature relieves him in part by a discharge from the nostrils. This matter, or coagulated lymph, which comes from the nose, proceeds from diseased blood. The blood as it goes its regular revolution or circulation through the body, undergoes a purification as it passes through the lungs, and the nostrils seem to be the part designed by Providence for the evacuation of those superfluous particles, or diseased matter which are separated by the lungs, and which would otherwise coagulate and accumulate to such a degree as to stop perspiration, and terminate the animal's existence.

In the human system, a patient affected with a cold coughs up the matter, and discharges it from the mouth; but the horse breathes only through the nostrils, and the matter discharges from the same passage.

From these remarks the owners of horses may see the necessity of using proper means to assist their horses when they are affected with colds, by encouraging the discharge from the nose, by steaming their heads with hot bran mash, and

purifying the blood with medicine, as directed in the section on colds; for if these means be neglected, and the animal be exposed to frequent attacks of cold, or other causes that derange the system, the effects will lead to worse consequences.

I before observed that the animal may be only partially relieved by the discharge from his nose. Part of the diseased matter still exists within the system, which may be propelled through the veins by the exertion which he is forced to go through in the course of his daily labour; consequently, this inflammatory matter is always increasing or gaining ground. But while the animal eats his food, and the blood keeps its circulation through its usual courses, there may be no evident indications of disease; yet, probably in one night, or at a time unexpected by the owner or manager of the horse, this inflammatory matter may take its seat in one of the hind legs (sometimes it may happen in both), which is commonly termed, in the north of Scotland, a shot of grease. This disease may also be removed and the animal purified, by using the means I have pointed out in the section on grease: but it is often only partially removed by bleeding from the thigh vein of the swelled leg, when no other means are used to purify the system. The swelling may disappear from the limb, and the horse be put to his usual labour, and seem apparently well so long as the inflammatory matter revolves through the

veins; but the animal is every day in jeopardy of another attack in his hind leg or legs. If not, there is a danger of his being seized with a more fatal malady; for if the animal is forced on to any extra exertion that may overheat him, while his blood is in such a diseased state, it often brings on inflammation of the bowels, pleurisy, or inflammation of the lungs, which commonly puts a period to the animal's existence. But when nature relieves the animal by a copious discharge from the nostrils, it proves a mitigation of these fatal consequences; or, in other words, it is the means of allowing a longer period of time to the animal; for this discharge often becomes a *stated running at the nose*, which is termed the mild stage of glanders. In this case the animal often lives for a considerable length of time, and is able to endure a moderate degree of work; but if over exerted and badly fed, his time will be of short duration; for the disease will prevail, and the acrimonious humours will affect the lymphatic vessels, and produce farcy buds and malignant ulcers, which terminate in what is called farcy glanders and death.

I do not mean to insist that the same causes lead directly to the same effects, as I have pointed them out. I admit that there may be many exceptions; but I insist on this point, that if the first causes are neglected, they will lead to worse consequences; and in the course of my practice I have witnessed the one cause lead to the other,

exactly as I have described them. It is probable that some Veterinary Practitioners may be somewhat astonished at my theory, in pointing out so many causes which may produce diseases so infectious as the farcy and glanders are supposed to be. My pen is guided more by my own practical experience than by any theory; and although I do not mean to say that these diseases are not infectious at certain stages of them, yet I am confident that they more frequently proceed from the causes I have described than they do from infection.

My ideas may also be disputed in cases which I acknowledge to proceed from general debility of the system; as, for instance, when in these I recommend bleeding and purifying medicine; as such cases are commonly treated quite contrary to the advice I have given,—by administering tonics and stimulating medicine. But I have always found in those cases, that reducing the blood, according to circumstances, and purifying the system with proper medicine, are the most successful means, and what I would recommend to be first used. Nature may then be assisted by giving good cordials to strengthen and bring the stomach into proper tone. Malt mash is excellent for supporting the animal and recruiting his strength, and what I would advise in such cases to be frequently given; and corn to be used rather sparingly for some time.

SECTION XV.

SURFEITS, HIDE-BOUND, AND MANGE.

THESE three cases are nearly allied to each other, and proceed from the same or similar causes, and are generally brought on by hard work and unwholesome feeding, or by feeding with such kind of food as has not sufficient nourishment in it for supporting the juices that circulate through the animal, and which are so essentially necessary for invigorating and stimulating the whole system to action.

What is termed a surfeit is a disease of the skin or hide, which consists in small tumours or buds. In some cases, they are not unlike farcy buds, and in other cases the animal will be full of small scabs, which, when rubbed off, show a little thin acrimonious matter under them. This is commonly termed a wet surfeit. The animal is generally very much hide-bound—the hide tight to the ribs. This disease is very similar to the mange, only that in the mange the hair commonly comes off from the mane and upper part of the tail, and the animal will be constantly biting or rubbing himself.

The mange is partially infectious, or similar to the itch in the human system. Cleanliness and good grooming are great preventives against these distempers. Whenever those scorbutic eruptions appear in the skin, I would recommend some

blood to be taken from the animal's neck. The quantity to be regulated according to age and strength, and the following purifying powders given:—

Nitre, in powder, twelve ounces.
Antimony, in do. six ounces.
Flowers of sulphur, six ounces.

The ingredients should be well mixed and divided into twenty-four equal parts, two of which should be given each day, night and morning, for twelve successive days, in bran mash or boiled barley.

If any symptoms of mange appear, wash the diseased parts with the following mixture:—

Old urine, two quarts.
Alum, in powder, one ounce.
Oil of vitriol, one ounce.

Mix the above together and wash the scabbed parts with the mixture twice a-day. If any part of the skin becomes red and sore, and inclined to ulcerate, it should be rubbed with a very small quantity of mercurial ointment.

The rules I have pointed out generally succeed in curing surfeit or mange; but, in desperate cases, I would recommend two purging balls to be given, which, if the necessary time can be allowed, will prove the most permanent cure and most likely to establish the animal's health. One ball should be given after the animal has taken one half of the antimonial powders, and the second when the other half of the powders are finished, as before directed. The purging balls, in page 4, should be given.

They are calculated for a full-grown animal, and should be reduced according to circumstances.

SECTION XVI.

MALLENDERS AND SALLENDERS.

THESE are one and the same disease. Mallenders affect the backside or bend of the knee joint, and sallenders affect the inside or bend of the hock.

The disease is known by a corrosive matter, which discharges from the part affected, and becomes gluey-like, and hard scabs, which, if neglected, will cause much pain to the animal and stiffness in his movements, but may be easily cured by the following applications:—

Let the part affected be well washed with soap and warm water, and dried with a towel, then dress it with a little mercurial ointment and bandage it up. It should be dressed every other day for three times, which is commonly sufficient for the cure.

Horses are often affected with hard scabby excrescences on the back of the fetlock joint, which should be treated in the same way as directed for mallenders.

These diseases most frequently affect riding horses or hackneys which get irregular exercise, sometimes violent, at other times (probably for several days) little or none. From whatever cause

the disease may proceed, it evidently indicates that some acrimonious humours must previously exist within the system of the animal, for the removal or cure of which, I would recommend a course of the purifying powder which I have prescribed for Surfeit and Mange (page 56), to be divided and given as there directed. These powders would be a means of cleansing and purifying the blood, and of preventing worse consequences.

SECTION XVII.

DIABETES, OR EXCESSIVE STALING.

THIS disease is often termed jaw-piss. It consists in an increased secretion of urine, and may be known by the animal staling often and in large quantities, which, if neglected, proves very injurious to the animal; for he will become hide-bound and rough in his coat, very faint, and lose his appetite. But it is easily cured if taken in time, or proper means used at the commencement of it, for which I would recommend the following balls :—

Opium, in powder, half an ounce.
Peruvian bark, in powder, two ounces.
Oil of caraway, two drachms.

The above should be well mixed with honey, and divided into four equal balls; one of which should be given every morning for four successive days.

The animal's diet should be nourishing; good hay, boiled barley, and a little malt mash frequently, and thin oatmeal gruel for his drink. It is seldom that bleeding is necessary in this case, unless fever prevails; a little then may be taken from the neck.

This disease may proceed from various causes, and in some instances there can be no cause assigned for it. The last two cases that came under my care, I believe had proceeded from an immoderate use of carrots, for in both cases I know that they were given to excess; the animals became exceedingly emaciated and low in condition, and their water passed from them very copiously, and as clear as the pure element from the fountain at which they drank.

Most horses are very fond of carrots, and, if they are given sparingly, the animal commonly thrives very well on them; but I would always recommend that they be given with caution.

SECTION XVIII.

SUPPRESSION OF URINE.

THIS complaint proceeds from various causes, and is known by the animal frequently trying to stale or make his water, but without effect. Sometimes it will come in small quantities, attended with considerable pain to the animal, and very dark col-

oured. It often proceeds from inflammation in the neck of the bladder, and sometimes from pressure of dung on that part (see dry colic and gripes, page 24), and from an obstruction in the point of the penis.

As soon as this complaint is discovered, no time should be lost in trying to relieve the animal, for which I would recommend the following medicine:—

Tincture of opium, one ounce.
Sweet spirit of nitre, one ounce.

The above should be given in a little thin gruel, made palatable with honey or treacle. The animal should be kept warm, and often taken out to gentle-walking exercise. If he finds no relief in the space of an hour, the medicine may be repeated, which commonly succeeds in producing the desired effect, unless there be any particular obstruction in the urinary passage.

In the course of my practice, I have frequently found large lumps of a substance similar to fullers'-earth or strong clay in the cavity of the point of the penis, which had pressed so tight on the point of the urinary tube as to entirely stop the progress or passage of the urine. I have sometimes found these balls or substances as large as a pigeon's egg, and have frequently been obliged to make an incision in the point or cavity of the penis before I could get them extracted; consequently, I would recommend, in any case, when a horse is pained with a suppression of

urine, that the point of his penis be examined, if the medicine do not operate within a given space of time, as already noticed, unless there be any other evident cause for it. The operation may be performed by bathing the part between the point of the sheath and the anus, for a considerable time, with warm water. Then the left hand should be put up the inside of the sheath to take hold of the point of the penis, and the right hand should be employed on the outside to force down the part. As soon as the part is obtained, it is easily discovered if there be any obstruction in the point of the penis, and may be pressed out with the fingers and thumb; or should it be so fast fixed as not to remove by the pressure of the fingers and thumb, a small incision may be made in the part, to admit room for it to be extracted. Whenever this cause is supposed to exist, it should be a professional man that should examine the animal and perform the operation; for a horse might be much injured, if any violence were used in drawing down the penis to examine it.

In those cases, when the substance is extracted the animal is so far relieved; but it is necessary to assist nature by giving the following cooling drink:—

Carbonate of soda, one ounce.
Nitre, one ounce.
Cream of tartar, two ounces.
Tincture of ginger, three drachms.

The above should be given in a little gruel,

made palatable with honey or treacle, and the horse kept warm for some time.

Horses are liable to stony gravel. I have never yet operated in that case, and, consequently, can give no information on that point in horses.

I have frequently performed the operation on black cattle (which are very liable to that disease), and have succeeded in extracting stones from their penis, and the animals recovered perfectly well. I will give some farther information on that head in another section.

SECTION XIX.

DYSENTERY OR SCOURING.

THIS disease proceeds from an increased secretion of bile, which causes a degree of inflammation in the stomach, attended with a degree of fever through the whole system, and if neglected in the first stage or commencement of the complaint, the inflammation increases, and the mucus or lining of the intestines will purge off with the excrements, and commonly terminates in mortification of the bowels.

This disease is often neglected, and, in many cases, mismanaged by administering tonics and astringent medicine in order to check the purging. This is truly absurd; for I have learned by ex-

perience, that the reduction of blood and cooling physic are the first means that should be used to remove the cause and cure the disease.

As soon as the disease is discovered, I would recommend from two to four quarts of blood to be taken from the neck, and the following purge to be given:—

Salt of tartar, one ounce.
Cream of tartar, three ounces.
Glauber salts, three ounces.
Rhubarb, in powder, two drachms.
Oil of caraway, half a drachm.———(One dose.)

The above should be given in a little thin gruel, with a considerable quantity of honey or treacle in it. The animal should be clothed warm, and get walking exercise frequently. His food should be a little sweet hay, and often. His drink should be thin oatmeal gruel, given milk warm, in small quantities, and frequently. If the purging do not subside in three days after the first medicine is given, the dose may be repeated; after which, if the animal seems weak in his stomach and off his appetite, give the following:—

Gentian root, in powder, half an ounce.
Honey, four ounces.

The above should be given in a bottle of camomile tea, and may be repeated, if thought necessary, for three or four mornings in succession. The animal should have nothing for two hours after the drink, at which time he may be watered

and fed in the usual way. The above rules seldom fail to cure excessive purging.

Costiveness often succeeds dysentery, which may be mitigated by giving some linseed amongst the corn, or a little malt mash once or twice a-day, till the stomach and bowels come to their proper tone of digestion.

SECTION XX.

INFLAMMATION.

I WILL now make a few general remarks on internal inflammation, which may probably convey more useful information to the greater part of my readers, than were I to give a long description of each disease in regular succession. There are few diseases, if any, which the horse is liable to, that do not either consist in inflammation or arise from it. And the greater importance the organ has in its functions in the animal system, the more dangerous is the disease when those parts are affected; such as inflammation of the stomach, bowels, lungs, liver, kidneys, &c.

In examination of horses that die of those diseases, it is difficult to ascertain in what part of the system the inflammation first originates. For instance, in pleurisy and inflammation of the lungs, it is scarcely possible to determine whether the inflammation first commenced in the pleura, a de-

licate membrane which covers the lungs, or on the external coat of the lungs. In inflammation of the bowels, it is also as uncertain to know whether it first commenced in the stomach or bowels.

Inflammation often spreads rapidly through the system, and when it terminates in death, if the animal be examined, there is always some particular part that seems to have been the seat of the disease, from its being in a higher state of mortification than any of the other contaminated parts. But this is no rule why it should be considered the part that the disease first originated in; for a simple fever, if neglected, may terminate in an inflammation of the lungs. I have also known instances of horses that were violently bruised by accidental causes, such as being turned over in a loaded cart, that the inflammation would spread in a few days to such a degree as to terminate in an inflammation of the liver; or, in other words, I have found, on dissecting the animal, that the liver exhibited a greater degree of mortification than any other part of the body. This I have witnessed when the animal seemed to be in proper health and in good habit of body before the accident happened; consequently, I am fully persuaded that these inflammatory and fatal diseases are often improperly treated by the inexperienced, from the supposition that the inflammatory matter first originates in the parts where it commonly terminates in mortification and death.

Fevers and inflammation are nearly allied to

each other, and in the horse they require almost the same treatment. There are only two kinds of fever distinguished in horses, which are termed simple and symptomatic. A simple fever may be caused by a sudden check of perspiration, and commonly begins with a shivering, attended with loss of appetite, the mouth hot, and pulse very quick; and is often succeeded by inflammation.

A symptomatic fever is dependent on, or in consequence of, internal inflammation; so that simple fever often produces inflammation; and internal inflammation almost always produces symptomatic fever.

In different sections of this treatise I have already notified many causes that may produce inflammation; and slight cases, if neglected, invariably lead to worse consequences; and often the animal may labour under a complication of diseases at the same time, and in consequence show as great a variety of symptoms. But it is impossible for me to lay down any rules that would be useful, or even understood by the inexperienced, for their conduct under these circumstances.

In many cases of these inflammatory and fatal diseases the symptoms are very similar to each other, which the animal shows while labouring under them; and, consequently, it requires a man of much practical experience to ascertain the nature of the disease, and to administer medicine adequate for the cure.

The most general symptoms that the horse shows

in the commencement of fever and inflammation, are stiffness, loss of appetite, hard and quick breathing, his mouth hot and dry, pulse quick and hard, and an unusual degree of heat commonly pervades the whole system; and as inflammation increases, the pulse becomes quicker and weaker, his legs and ears cold, and his body alternately hot and cold to extremes. If the lungs become affected, or the inflammation takes its seat in that part, it may be known by the difficulty the animal has in breathing, and the invariably quick motion of his flanks.

In all cases of inflammation, early and copious bleeding, with cooling purging medicine, are the safest and most effectual means that should be adopted; and those means should be regulated according to circumstances. I will therefore lay down some rules for the management of this case, and show what medicines I have found most successful for the cure.

Inflammation may seize a horse when he is rather costive in the bowels; in this case it would be dangerous to give him a strong purge, yet it is necessary to open the bowels as quick as possible, which may be done by giving a bottle of castor oil (twenty ounces) at three separate times; allow an hour and a-half betwixt each part. The animal should also be bled from the neck vein, before the medicine is given—about four quarts may be taken—and apply injections frequently, prepared as directed in page 11. In four hours after the castor oil is administered, give the following:—

Tincture of opium, one ounce.
Sweet spirit of nitre, two ounces.

The above should be given in a little thin gruel, with some honey or treacle in it. If the medicine do not begin to operate in the space of twelve hours after it is given, the following may be administered:—

Cream of tartar, three ounces.
Carbonate of soda, half an ounce.
Tincture of ginger, half an ounce.

This also should be given in a little gruel. Bleeding must be regulated by the state of the first blood, after it is congealed. If there be an extra quantity of serum or size on the top of it, more blood should be taken off. In some cases it is necessary to bleed frequently; but after the first bleeding, a quart or three pints is a sufficient quantity to be taken at each time.

Sometimes inflammation begins with dysentery or purging; in this case also, bleeding is the first means that should be used, and the following medicine given:—

Salt of tartar, one ounce.
Cream of tartar, two ounces.
Glauber salts, three ounces.
Tincture of opium, one ounce.

The above should be given in a little thin gruel, with some honey or treacle in it. The dose may be repeated every eight hours till the symptoms of fever are abated, or as the animal is able to bear it. The animal should be warm clothed and taken

out for walking exercise frequently. If the legs and ears are cold, they should be well hand-rubbed, and often. Thin gruel should be given to drink. If there are symptoms of any weakness or debility in the stomach after the inflammation has subsided, give the following drink :—

Peruvian bark, half an ounce.
Gentian root, in powder, half an ounce.

The above should be mixed and given in a bottle of camomile tea, and let the animal fast for two hours after. This medicine may be given three or four days in succession, if thought necessary.

Some horses are liable to costiveness after purging medicine, for which there is nothing better than malt mash to keep the bowels gently open; it is also excellent for supporting the animal and recruiting the system.

My prescriptions may be objected to by some, as being too strong, or likely to purge too much; but I have always found, in extreme cases of inflammation, that rapid or good purging had the quickest effect in intercepting and checking the progress of the disease, for, when too little is given, or not sufficient to operate, I am confident that it only aggravates the disease, and does more harm than good; for inflammatory matter spreads fast through the system, and, unless some powerful medicine is administered to arrest its course, it will either affect the lungs or end in mortification.

Inflammation in horses has prevailed to a great

degree for years past; and, as I go my rounds through the northern districts, these cases are often related to me, and the means that they had used for the animal's recovery, which I too often find consist mostly, if not altogether, in bleeding the animal. Bleeding is an operation easy to perform, and is universally recommended for inflammation; consequently, if the owner of the horse has no experienced man to direct the proper means to be used, he supposes that bleeding alone is sufficient to remove the disease, and many valuable animals have fallen victims under inflammatory affection from the neglect of cooling physic, and losing too much blood in quick succession or in a short space of time.

Some further explanation will be given on bleeding in another section.

I have already acknowledged, and have proved by experience, that bleeding is the first means that should be used for inflammatory diseases, yet it cannot be depended on altogether for the cure; for, although it may mitigate the disease for a time, it is likely to return with double force and terminate in death. I therefore particularly recommend cathartic medicine to be used with discretion, but to be given in such quantities as powerfully to affect the animal; for, if the case is desperate, there is nothing less than copious bleeding and good purging that can be depended upon for a permanent cure. If inflammation should begin when the animal is costive, and the

medicine not operate in proper time, or within eighteen hours when assisted by injections, recourse should be had to hot bathing.

SECTION XXI.

ON THE PULSE.

It is essentially necessary for those who undertake the management of sick horses, to understand their pulsation; for it is from the state of the pulse that bleeding and administering medicine is in a great measure regulated. In healthy horses the pulsation varies considerably betwixt youth and age and temperament of body, and beats from thirty-five to forty-five times in a minute, but the general standard is forty; consequently, the farther the pulsation exceeds the standard, the greater is the degree of disease. Whenever it exceeds fifty in a minute, the horse may be considered to have a degree of fever, and should be bled, and get some cooling physic. If this rule was attended to when the animal first begins to droop and lose his appetite, it might be a means of saving many valuable horses.

The pulse may be distinctly felt in the left side, or in an artery that crosses under the jaw-bone.

SECTION XXII.

ON BLEEDING.

THERE is scarcely a disease which the horse is liable to that is not, less or more, inflammatory; consequently, blood-letting can seldom do harm, but commonly proves of the greatest benefit. The veins that are most convenient to bleed from are, the jugular vein in the neck; cephalic or large vein in the arm; or the saphena or large vein in the thigh.

The common phleme is the safest and most convenient instrument for bleeding in the neck, but a lancet is decidedly the most convenient instrument for bleeding in the arm or the thigh veins, and may be used without the least degree of danger, by admitting no more of the point of the lancet than what is necessary to enter the vein; which may be done *by keeping the point of the fore finger and thumb tight on the instrument as a guard,* and using the left hand to adjust the vein for the incision. I would recommend the blood always to be taken in a pail, or basin, so that the quantity and quality of it may be ascertained. But I never would recommend a large quantity to be taken at one time. I seldom or ever exceeded four quarts at one bleeding; but in urgent cases I have repeated the operation four times in the space of six hours, with evident advan-

tage. But this process should be regulated by the pulsation and the state of the blood.

Whenever I find it necessary to bleed often within a short space of time, I take it from different parts of the animal, which I think has the best effect; for those sudden and violent attacks of inflammation commonly proceed from an increased action of the heart and arteries; consequently, I am persuaded that taking blood from different parts of the animal gives quicker relief to the smaller arteries. I do not mean to insist on this theory as a standard rule; for many Veterinary Surgeons are decided in the opinion that, as the blood circulates with such rapid velocity through the system, it is a matter of no consequence which of the large veins are opened for general bleeding, and that one vein is sufficient. However, these rules which I have pointed out are such as I have uniformly adopted and have no intention to depart from. I acknowledge that the jugular vein in the neck is the most convenient part for the operation, and quite sufficient for general bleeding, unless in such cases as I have already described.

To ascertain the quality of the blood, it should (as soon as taken from the animal) be put into a place where nothing can disturb it, till it is quite cold or coagulated; and if any considerable quantity of serum, or pale yellow size, be on the top of it, there can be no doubt of inflammatory matter existing within the animal; and the greater the depth or quantity of the size, the more it indicates

a diseased state of the system; for in healthy horses the blood coagulates very quick, and scarcely any size appears on it. Yet there are some exceptions, which will cause me to enter more minutely into this point than I intended to do.

I have often tried experiments on young horses or colts that had never been worked, to derange the system or contaminate the blood. In those experiments I always used a mug about four inches in diameter and four inches deep, and have found in some colts that their blood would congeal or coagulate in a few minutes, and not a particle of size be discovered on the top of it; and the colour exhibited a beautiful crimson red, and as tender to the feel as red currant jelly. In other cases I have found the blood to contain a third part of coagulated lymph or yellow size. I have proved the above remarks on colts bred and raised on the same farm, and equal justice given to both; consequently, this diseased matter must have been constitutional, or inherited from the diseased state of the mother; and I have always found the colts that had such diseased blood to be weak and languid, and liable to inflammatory affection on the least extra labour or exertion.

There is a proportion of size in the blood of every horse; and sometimes it exists to a very great degree, and the horse apparently in good health while circulation keeps its course; but in such a state the animal is in jeopardy of a severe attack of inflammation.

If a horse in good health and habit of body be bled, the blood will coagulate very quickly, and little or no size be seen on the top of it; but in one that is unhealthy and in bad habit of body, the blood will not coagulate for a long time, and a great quantity of size will be on the top of it, sometimes more than one half, which is very tenacious or tough to the feel. Whenever the blood is discovered to be in this diseased state, no time should be lost in using means to purify the animal by administering proper medicine; for the reduction of blood alone is not sufficient to produce this effect. I see many errors in this point as I go my rounds; for there are many who have the management of horses that are fully sensible, when they see an unusual quantity of size on the blood, that it indicates inflammation; which they endeavour to remove by frequently bleeding the animal, without the assistance of medicine; and many valuable horses have become victims by this kind of treatment, when, probably, in such cases, if two or three good purges were administered, and a less quantity of blood taken, it might be a means of affecting a permanent cure and of establishing the health of the animal for many years after.

In any extreme case of inflammation, bleeding is the first means that should be used; and the star of the phleme should be large enough to make a considerable orifice in the vein to admit of a copious stream of blood, which has a much better effect in diminishing the action of

the heart and arteries than a gentle or small stream.

There are many instances of inflamed veins or swelled necks in consequence of bleeding, which are commonly caused by the animal being allowed to have the freedom of his head too soon after the operation is performed; for, if he gets his head down soon after the orifice is pinned, and begins to masticate his hay or food, the action of the jaws causes the blood to force out of the vein, which consequently becomes coagulated, and irritates the cellular membrane, which is very susceptible of inflammatory affection. I have known many desperate cases of this kind to the danger of the animal's life. When such cases occur, the operator is often blamed, as having either cut through the vein or used a foul phleme, when neither of the two is the cause; for I am confident that those cases more frequently happen from coagulated blood or lymph between the vein and the skin, than from any other cause, and very trifling causes will produce bad consequences, particularly when a horse is any way scorbutic or in bad habit of body. If the following rules are attended to, there will be little danger of swelled necks after bleeding:—The sooner the phleme is struck after the vein is adjusted the better, so as not to keep the pressure of the fingers too long on the vein before it is opened. The pail or basin that is used to catch the blood should not be pressed too tight on the vein. The horse's head should be kept

well up, and the basin lightly pressed about three inches below the orifice, which may be shifted either way till the blood comes freely, then very little pressure will keep the stream flowing as long as necessary, if the vein be fairly opened. A clean sharp-pointed pin should be used to secure the orifice. A very small hold of the skin will do. The lips of the orifice should meet quite equal, and care should be taken not to pull the skin from the vein too much, as it would admit of the blood betwixt. It is better to press the skin rather to the vein when forcing in the pin. It may then be secured with a little tow or horse hair, damped with the blood. His head should then be tied to the rack for an hour or two, not too high, but so as the animal can scarcely reach the manger. The hay and every thing should be taken from him while his head is tied up. The pin may be removed the following day; but it is not safe to put a horse in harness to work till two days after bleeding, although he might be gently rode in less time.

Bleeding is particularly useful for inflammation of the eyes. When horses are subject to frequent attacks of inflammation in the eyes, I would recommend bleeding in a small artery below the eye. It may be distinctly seen and felt, about an inch below the under eye-lid, and may be opened with a small lancet. If it does not bleed as much as is required, there is no danger in cutting the vein asunder. I have known this operation to produce

most beneficial effects for inflammatory affection and accidental hurts in the eyes.

SECTION XXIII.

APOPLEXY OR STAGGERS.

THERE are two kinds of this disease. The one most commonly proceeds from plethora or redundancy of blood, which presses so much upon the brain as to cause insensibility, and makes the animal plunge in a furious manner; from which symptoms, I believe, the disease has been termed Mad Staggers. I think an inflammation of the brain would be a more appropriate term for the disease.

This kind of staggers most frequently attacks horses that are high fed and get too little exercise. The most effectual mode of cure is early and copious bleeding, and opening the bowels as quickly as possible with cathartic medicine, which should be assisted with frequent injections. The head should be almost constantly bathed with warm water till the medicine operates. Bleeding from the small arteries below the eyes is also very favourable for relieving the animal when the mad fits and convulsions much prevail. It is necessary to keep the animal on a very limited quantity of hay and corn for some days after he begins to recover; and the system should be kept cool by giving an ounce

of nitre in a little bran mash each day for several days.

SECTION XXIV.

SLEEPY STAGGERS.

THIS disease is similar to the mad staggers, but it is produced by quite opposite causes. Horses used for farm work are most liable to be attacked by it, particularly those that are overpowered with work and badly fed. The stomach thus becomes debilitated, and its functions too weak to digest the food which the animal takes. This disease originates in the stomach, and is often called the stomach staggers. It commonly begins, first with a weakness in the fore quarters; the legs often tremble as though the animal was going to fall; he often rests his head on the manger, with a sleepy kind of insensibility; and as the disease prevails, he will often dash himself against the stall with great fury. The principal cause of this disease is an accumulation of food undigested in the stomach. The stomach thus becomes extended beyond its usual bounds, and this unusual extension of the stomach causes a greater accumulation of blood in the vessels of the brain. The first means to be used in this disease also is bleeding, and the under-mentioned medicine given:—

Tincture of opium, half an ounce.
Common salt, three ounces.
Salt of tartar, two drachms.

The before-mentioned medicine should be given in a little gruel, and the following purge in an hour after:—

Rhubarb, in powder, half an ounce.
Ginger, in powder, two drachms.
Calomel, one drachm.

The above should be made into a ball with honey. A bottle of castor oil should be given at twice. One half should be given in three hours after the ball, and three hours afterwards give the other half. Injections also should be administered every two hours, prepared as directed in page 11. The animal is generally costive in this disease, consequently back raking should be particularly attended to, and often (see page 24). If the medicine does not begin to operate in the space of sixteen hours from the time the first dose was given, recourse should be had immediately to hot bathing.

This disease prevails most amongst farm horses, and many hundreds have died of it; and as it proceeds from an over-charged stomach and is almost always attended with costiveness, consequently it is very dangerous to administer a strong purge at first without some previous preparation, yet there can be no hope of a cure unless the stomach and bowels be quickly relieved. I have therefore tried many experiments for the cure of

this complaint, but I have found the means prescribed above to prove most successful. Some people may think I prescribe too much medicine, or too quick in succession; but I particularly recommend it to be administered exactly as directed. The salt and salt of tartar are excellently adapted for bringing the digestive powers of the stomach into action; and the other medicines, if given at due intervals, as directed, are calculated to stimulate the digestive functions and produce purging gradually, when a strong purge, if given at once, without any previous preparation, and the stomach and bowels in the state as already described, would produce almost instant death to the animal. After the disease is removed, a little malt mash should be given frequently, and corn and hay should be given sparingly for several days.

SECTION XXV.

LOCKED JAWS.

THIS disease commonly proves fatal, and I believe no regular cure for it has as yet been discovered. It often proceeds from external inflammation, arising from wounds or punctures in the feet or the tail, from docking, castration, &c. and sometimes it will happen when no evident cause can be

assigned for it. There have been many experiments tried for the cure of locked jaws, and the only means I ever heard of proving successful was, by giving strong doses of opium and camphor, and blistering the spine or back from the withers to the tail. In slight cases, when the jaws are only partially closed, the above means might do. I have never yet, however, tried the means, and consequently can give no farther information on the subject.

SECTION XXVI.

POLL EVIL.

THIS disease most commonly happens from hurts and bruises on the poll, sometimes from violent strains in that part, which may happen by the animal hanging back on his stall collar. These causes produce inflammation between the poll bone and the first vertebræ of the neck, which often ulcerates and spreads a considerable distance round, so as to injure the bones of the neck before it breaks, or any appearance of matter be seen. In this case, there is no sure mode of cure, but by laying the part fairly open and cutting away the diseased and rotten parts, which should be performed by an experienced operator, as there is a danger of injuring the ligaments and principal tendon of the neck. As soon as the operation is

performed, the part should be dressed with the following styptic:—

Oil of vitriol, one ounce.
Corrosive sublimate, two drachms.

The above should be well mixed, and applied to the part after the bleeding subsides. This styptic will check any farther progress of putrefaction. The wound should then be brought to suppuration, by being dressed with lint or tow, dipped in basilicon ointment. The lips of the wound should be closed with two or three stitches, leaving a space of two inches between each stitch. As soon as a good matter discharges from the wound, it will require nothing but to be kept clean, and washed occasionally with a solution of blue vitriol and water. The animal should get an ounce of nitre in a little bran mash for several days after the operation is performed.

SECTION XXVII.

FISTULA IN THE WITHERS.

THIS disorder generally proceeds from bruises or pinches from the saddle or similar causes. It sometimes commences with a small hard tumour on the top of the withers, but soon festers and ulcerates deep on both sides. As soon as this is discovered, poultices should be applied for two

or three days. The matter should then be let out and the parts laid open, so as to cut away any diseased or rotten parts. It should then be dressed with the styptic, and treated in the same way as the poll evil.

SECTION XXVIII.

ROWELLING.

THIS operation is very beneficial in many cases to produce suppuration, and is often used for removing internal inflammation and fever. The operation is performed by cutting the skin to admit the introduction of the finger or thumb, so as to separate the skin from the flesh for about three inches round. Then a piece of leather, cut in a round shape, about two inches diameter, should be covered with a little lint, and dipped in an equal quantity of hog's lard and Venice turpentine, melted together, and put into the wound. Two or three teats of tow should be dipped in the mixture and put in with the rowel. Two days afterwards the teats should be taken out, but the rowel should be allowed to remain in, and should be turned every day for three weeks, at which time it should be taken out.

If a rowel be used for relieving a horse labouring under any internal fever or inflammation, it should be charged with blistering ointment, which

will produce a considerable degree of inflammation externally in a short time, and consequently more likely to give the animal relief in any internal disease.

It should be observed, whenever rowelling is made use of, that the animal should get warm water and bran mash, and not be exposed to cold till the matter discharges freely.

SECTION XXIX.

JAUNDICE.

THIS disease prevails amongst farm horses, and when neglected often terminates in an inflammation of the liver. In horses this disease generally arises from an increased action of the liver, which causes an unusual secretion of bile, and is either attended with costiveness or purging to an extreme.

This distemper is particularly distinguished by a yellowness of the mouth and eyes; the urine very high coloured; the animal stiff and sluggish, and off his appetite. When these symptoms are observed, no time should be lost in bleeding copiously and giving the following medicine:—

Barbadoes aloes, six drachms.
Rhubarb, in powder, two drachms.
Calomel, half a drachm.
Oil of caraway, half a drachm.

The above should be mixed and made into a ball for one dose.

If the animal be costive, he should get a good bait of malt mash the night previous to taking the ball, and after the ball is given, an injection should be administered every two hours till the physic operates.

If the disease is attended with purging, the same purge should be given, except the calomel, which should be omitted. After the purging is over, one of the under-mentioned diuretic balls should be given every other day while they last:—

Castile soap, two ounces.
Yellow rosin, two ounces.
Antimony, in powder, two ounces.
Oil of juniper, two drachms.

The above should be mixed with honey and divided into six balls. The animal should frequently get warm water, while getting the balls, and some malt mash.

SECTION XXX.

SPLINTS, RING-BONES, &c.

A ring-bone is a hard swelling that grows on the lower part of the pastern, near the coronet, and generally extends round the front, from heel to heel; or, if only on each side, it is termed the splinters of a ring-bone.

A splint is a substance of superfluous bone that grows on the inside of the fore-leg, on the shank bone, below the knee; but it seldom causes lameness, unless when it communicates with the joint.

A bone-spavin is a substance of bone that grows on the inside of the hock; and if near by, or on the joint,it causes lameness.

A curb is a hard swelling on the back part of the hock, below the knuckle or cap of the hock; and the more it interferes with the joint, the more it impedes its motion, or causes lameness.

Those four complaints arise from various causes, and are very similar in their nature; and the only cure yet discovered for them consists in firing and blistering, the execution of which should always be entrusted to a professional man.

For thorough-pins, blood or bog-spavins, wind-galls, &c. it is seldom that any other means are used than blistering.

There are several diseases which the horse is liable to that I have not noticed, particularly in the foot, such as the canker, quittors, &c. In these cases the assistance of a veterinary surgeon is indispensably necessary; and, as I have not made any new discovery for the cure of these, I shall not enter farther on those points. But I particularly recommend the owners of horses, in all cases which they do not understand, to make early application to a professional man; for, as the proverb hath it, "a stitch in time saves nine."

I will conclude this part of my work by making

a few general remarks, with some advice; but before I commence with that part I will note down two prescriptions for blisters.

For a paste blister take four ounces of hog's lard and four ounces of Venice turpentine; melt them over a slow fire, and when they are in a liquid state, not too hot, mix in the under-mentioned:—

Euphorbium, in powder, one ounce.
Spanish flies, in powder, one ounce.
Oil of thyme, half an ounce.

For a liquid blister take—

Rape oil, one gill.
Oil of turpentine, two ounces.
Oil of thyme, half an ounce.
Spanish flies, one ounce.

The above should be well mixed when it is used; and, if applied for a ring-bone or spavin, it should be well rubbed into the part affected, with a spatula or the back of a horn spoon, for fifteen or twenty minutes, the first time it is used. The blister may be used for three or four successive days; but after the first dressing, a little of the mixture should be rubbed in with the fingers, and the spatula or spoon should be omitted.

Blistering is very useful in many cases, and there are vast varieties of mixtures used for it; but I have found the two which I have prescribed to answer the purpose in all cases where blistering was required; but it is of the greatest importance to have genuine drugs.

GENERAL REMARKS

ON THE

MANAGEMENT OF HORSES.

THERE are few diseases that the horse is liable to for producing which some cause cannot be assigned; and were those causes more generally attended to by those who have the management of that noble creature, many of those troublesome and even fatal diseases might be prevented.

Some of my readers may think the following observations so simple or so trifling as not to be worth their notice; yet I feel confident that they will prove useful to those who duly attend to them.

I shall commence with the foot, which is an essential part of the animal, particularly in saddle horses, and should be carefully attended to. I have known many instances of young colts being seriously injured in the feet from the neglect of cleaning out the stable.

It is a usual custom at farms where there are many colts to put them into a roomy place, where

they can step about to exercise themselves in the winter season. This I acknowledge to be a very good plan, at the same time, I would recommend that their place be often cleaned out, for, if neglected for any considerable length of time, the horse dung will heat to a very great degree, and nothing can be more pernicious to horses' feet than the heat of their own dung. Hundreds of young colts have been injured in the feet by the simple cause of being allowed to stand on hot dung. It often causes the hoofs to grow so unshapely as to defy the most experienced horse-shoer to bring them into proper shape; it also renders them liable to tender diseased feet, which makes them unsafe for the road and consequently diminishes their value.

Farmers that have inclosures or convenience for letting their colts run out in fine winter weather, will find it very conducive to the health of the animals; it strengthens their nerves and promotes muscular power, but cold rainy weather has quite the contrary effect, and proves very injurious to their constitution, unless they have sheds or some other place to go into for shelter.

The manner of feeding colts also is a matter of consideration. In the winter season, they are too often fed mostly on straw, which has not sufficient nourishment for supporting the system. They always ought to get a due proportion of bait or mash food, to keep the bowels regular. This point should be particularly attended to when they are

changing their teeth, which generally commences when they are two years old, or betwixt the second and third year of their age. At that time, colts have great difficulty in masticating their food, and are often very faint and weak and off their appetite, and consequently require some soft nourishing food to support them. I have known instances of colts being reduced to mere skeletons at the time they were changing their teeth, by neglecting to give a sufficient quantity of mash or succulent food; and, if they are *once* reduced to this low condition in youth, it impoverishes the blood and debilitates the whole system; it checks their growth, and renders them more liable to diseases at future periods. I do not recommend farmers to keep their young colts in too high condition in the winter season, but they always ought to be kept in that state which is commonly termed fresh and thriving.

My next advice is, to recommend farmers to be careful in first putting their colts out to grass. It should ever be remembered that the sudden transition from heat to cold, and from cold to heat, has the same injurious effect on the animal frame.

A colt that has been housed through the winter, and kept warm and comfortable, if put out to a grass park early in the season, and the nights turn frosty, or a long continuance of rainy weather, which often happens in the early season of grazing, is very likely to have his constitution injured, and many young colts have been totally destroyed

by the same cause. I therefore think it advisable to let the grass be pretty well advanced, and the weather in a fine settled state, before colts be put into a park, unless there be proper sheds for the animals to go into for shelter; and, previous to going out, they ought to be accustomed to lie in an open place, dry above head, to prepare them gradually for the change. I acknowledge that early grass is excellent for bringing a horse into condition, and what I would highly recommend, particularly for horses that labour under any constitutional debility; for there is no feeding that will recruit the system and bring a horse to flesh so soon as early grass; but in such cases the animal should be taken in at night, and get a little corn occasionally; but colts, however, should never be put out to lie in a grass park without some previous preparation. I have also known many instances of colts being injured by being left out late in the season, when the nights get long and cold, and rainy weather continues, as it sometimes will do for several days and nights with very little intermission. In such cases, the poor animal being exposed to the inclemency of the weather, and getting nothing to eat but cold wet grass, the stomach gets disordered, and the whole system deranged, and he often comes out of the park, to the disappointment of the owner, stiff and debilitated and in wretched condition.

I have often been called on for advice regarding young colts, and have found them in a miserably

diseased state; and, after bleeding them, have found their blood when coagulated to be more than half serum or size. And the owners of the animals have often expressed their astonishment and been much at a loss to conjecture how a young horse that had never done any work, and had been put into a good grass park when he was in perfect health and condition, should be in such a diseased state. The cause is obvious, as already mentioned, having been left out too long in the grass park in cold rainy weather. I would therefore seriously advise farmers to be careful in taking home their colts when the nights get cold and rainy; for it would be much better for the animals, even were they kept on a scrimp allowance, where they could be under shelter, and comfortable, than to be exposed to such inclemency of weather.

I have often remonstrated with farmers on this point, and have been asked in reply, How colts thrive so well that are allowed to range in forests from the time of their birth till they are taken and broke in for work, and never a single night in a stable or under cover? I think no man that has ever studied the nature and constitution of a horse in the least degree, can be at any loss to account for this. In the first place, animals that are allowed to range at large from their birth, are gradually inured to the inclemency of the weather, and, consequently, less susceptible of injury by sudden transitions from heat to cold. They have also a greater variety to choose on, and they are

guided by natural instinct to eat of such herbage or shrubs as are most congenial to the stomach, whereas those animals that are confined in a park have less variety to choose from; and when it gets late in the season, little grass remains but such as has been refused and trampled on during the summer, and which the animal is obliged to eat, wet or frosty, as it may happen to be, or starve for want.

It is also necessary, when colts are taken up from grass, particularly when they are left out late in the season, to prepare them gradually for the change from cold to heat; for they are very liable to inflammatory attacks when brought suddenly into a warm stable, which often affects the lungs with cough, asthma, &c.

It is also necessary, in the change from green to dry food to prepare horses gradually for it, as otherwise they are liable to costiveness and obstructions in the bowels; and when they are first put on grass, from dry meat, it should be given them very sparingly at first, till the stomach and bowels become gradually prepared for the succulent herbage, as otherwise they are liable to flatulent colic, fermentation in the stomach, &c. In all changes and transitions it is necessary to prepare the animal for them, as far as circumstances may allow.

It is also very injurious for horses to ride them hard, or to put them to any extra weighty draught, when their stomachs are full, particularly after taking an extra drink of water. I have often no-

ticed a practice which much prevails with boys who are entrusted to ride colts or saddle-horses to water, which may be at some considerable distance from the stable. They are generally fond of a hard ride, and as their seat is more easy in going up hill, they commonly take the advantage of such ground for a furious gallop, and probably immediately after the animal has taken an unusual quantity of water. There is nothing more likely than such usage to rupture the air cells of the lungs and cause broken wind.

It is also very injurious to horses to give them an extra quantity of corn at one time, particularly to those that seldom get any. I have been informed of many instances of farmers that had a long distance to go to a market, or other causes, that they would take a horse that probably might not have been used to get a feed of corn once in a month, and, for want of better judgment, would give the animal an extra quantity of corn, on the supposition that it would strengthen and enable him to go a long distance in a short space of time. With such usage, the animal soon feels an unusual degree of thirst, and at the first opportunity drinks freely, which swells and disorders the stomach, which causes sickness, and many have died in consequence of such injudicious management.

Those who read the preceding remarks with attention, will perceive that very trifling causes may lead to serious and sometimes to fatal conse-

quences. They will also see the necessity there is for those who have the management of the horse to study his nature and constitution.

The horse is remarkably sagacious and very susceptible of kindness from those who ride or drive him, and will go through his work pleasantly and apparently pleased to obey his master, under kind treatment, when, on the contrary, if he is ill treated and badly used, he will either turn spiteful and refractory, or lose his spirit, and become dull and stupid, and his work will, if I may use the expression, seem a double burden to him. I therefore think it a duty incumbent on all who have the charge of this generous creature, to treat him with gentleness and make him comfortable, and to avoid all causes as much as possible that might give him cold, the ill effects of which have already been pointed out to a considerable degree; for the trifling cause of allowing him to stand for a few minutes, exposed to the inclemency of the weather, while in a high state of perspiration, might give the animal a cold that would prove of serious injury to him.

I have no intention, by these remarks, to prejudice masters against their servants; for I have travelled extensively through the northern districts of Scotland, and have often been highly gratified to witness the fidelity of servants to their masters, and have generally found them to be much attached and greatly devoted to their interest. My desire is to give such information as will be generally

useful to master and servant, that they may mutually endeavour to preserve or promote the health of the animals under their care.

I have now given such information for the cure of diseases which are most prevalent amongst farm horses. I have not given a great variety of drugs in my prescriptions, for I have been often called on for advice in country places, or in highland districts, where I could not get the identical drugs that I wanted to administer, and, consequently, have been obliged to use the nearest substitutes that I could get, or such medicine as had similar tendency in its operation. I have therefore composed my prescriptions of such drugs as are easy to be obtained, and such as, I am confident, if genuine and administered according to the directions given, will be found to operate and fully answer the purpose for which they are intended. At the same time, it should be observed, that they are uniformly calculated for full grown horses, and should be reduced according to circumstances. Yet whenever purging is required for horses, it is better to purge them effectually; for if given in too small quantities, it often does more harm than good. I have given frequent cautions to prepare the animals previous to giving a purge; and in urgent cases, when there is not time to prepare them in the usual way, the medicine should be given in small quantities and often, and assisted with injections till it operates; but I am fully persuaded that, if the advice and caution I have given be duly

attended to, horses will be less liable to disease, and, consequently, less medicine will be required.

Antimony is an excellent medicine, but should always be used with caution and given in small quantities. It is frequently recommended in the preceding pages, in various proportions, according to the urgency of the case. I have proved its beneficial effects for many years past; and as I believe it is often used and given in improper doses, I will note down a prescription, which operates as a purifier of the blood, and which I can warrant as one of the safest and most efficacious compositions that can be formed out of the Materia Medica:—

Nitre, in powder, twelve ounces.
Antimony, in powder, eight ounces.
Flowers of sulphur, four ounces.

The above should be well mixed, and divided into twenty-four equal parts, one of which should be given night and morning for twelve successive days.

It should be given alternately, one day in bran mash and another in corn damped a little with water, to cause the powder to adhere to it. The above powders have a wonderful effect in purifying the blood and bringing a horse into condition. And for a stallion, I would particularly recommend that one series of doses should be given before the covering season and repeated when it is over.

It is also excellent for any horse that travels much and is high fed, and I have often found it

to prove very beneficial for horses that were hide-bound, low in condition, and not thriving with their food. The animal may be kept to his usual labour while taking the powders, but should not be exposed to rain or cold, and his drink should be a little warmed, if the powders are given in cold weather.

A TREATISE

ON THE

MANAGEMENT

OF

DAIRY STOCK AND THE DISEASES INCIDENT TO BLACK CATTLE.

SECTION I.

ON THE MANAGEMENT OF BREEDING COWS.

THE great value of black cattle to man is so well and generally known, that any comment on this head might justly be termed superfluous.

Inflammatory diseases have much prevailed of late years, which has been principally owing to sudden changes of weather. The seasons have been very unsteady for several years past, and the changes from excessive heat to extreme cold have been so sudden and frequent as to affect the animal frame to a very great degree; and there are few animals of the brute creation that are more susceptible of injury from such changes, than the cow. There are many other causes which may disorder the system; but from whatever cause it

may happen, if a cow is diseased, and the blood contaminated, her offspring must, less or more, inherit her disease; for it is from the blood and the most vital fluids of the cow, that the calf is supported while in the womb.

A cow or any other animal may be disordered, and the blood contaminated to a considerable degree, and no evident signs of disease while the blood keeps its regular circulation, till the inflammatory matter strikes or takes its seat; and many that have the charge of cows are deluded by the supposition, that, while they are appetized for their food, nothing of consequence can be wrong; but, as it is from healthy mothers that a healthy offspring can be expected, I particularly recommend farmers to be careful in the management of their breeding cows, and to preserve them as much as possible from the inclemency of the weather, or any other causes that may disorder them; and when causes cannot be avoided, and disease ensues, to use means to rectify the system before inflammation encroaches, to the injury of mother and calf. Let it always be remembered it is better to prevent than to cure, and a simple remedy in time applied, may remove what, if neglected, would require superior skill and expensive medicine to cure. But before I proceed farther with my remarks, I would wish to remove a prejudice which much prevails in the northern districts of Scotland; that is, if blood be taken from a milch cow, and a purge given, it is supposed it will put the cow off her

milk, or diminish it. This idea is most absurd and ridiculous, for I can prove beyond doubt that the reduction of blood, if required, has the contrary effect. I will admit that if blood be taken from a cow while under milk, and a strong purge given, that it will diminish the quantity of milk for a few days, but it will afterwards return more copious than before and of much better quality.

I would wish it to be understood that I do not recommend bleeding or purging, unless there be cause for it, and then, it must be done with caution, and regulated by circumstances. But I will insist on this point, that, if the blood be contaminated, and the animal disordered, there is no possibility of bringing the functions of the system to their proper tone, and restoring health, but by the reduction of blood and administering purging and purifying medicine; and many thousands of cattle have died by the neglect of these means, that might have been saved by timely assistance and proper applications.

I perceive, as I go my rounds, that the operation of bleeding is much practised by farmers on their young cattle, but that of giving them a purge is seldom thought necessary, which might prove of more essential benefit to the animal, in many cases, than the loss of blood; and unless the practice of purging as well as bleeding be more generally adopted, inflammatory and fatal diseases will prevail and increase.

I have frequently, in urgent cases, given a

strong purge to a cow at all seasons, from the time of copulation with the bull, till within a fortnight of calving, with perfect success, but the time I would particularly recommend a cow to be purified by purging, is betwixt calving and copulation. I, therefore, beg the attention of those who have the management of dairy stock, to the following advice :—

When cows are far advanced with calf they should be cautiously fed, and turnips should be given rather sparingly and in small quantities, for an extra quantity of any cold watery food disorders the stomach, and proves very pernicious to both mother and calf.

It is also necessary to be careful in turning them out of the byre, that they get no extra twist to injure them, also drive them gently to water, or to the park, for many accidents happen from bad management, and often from very trifling causes.

The moderate use of salt with turnips, or any watery food, is very beneficial for black cattle, particularly for breeding cows, as they advance with calf. When they are within about three weeks of their time for calving, I would recommend about four quarts of blood to be taken from the neck; and two ounces of nitre (saltpetre) should be given each day, for five or six days previous to calving. And in about three days after calving, the following purge should be given :—

Glauber salts, twelve ounces.
Cream of tartar, four ounces.
Nitre, two ounces.
Ginger, in powder, two drachms.
(One dose.)

The salts and nitre should be dissolved in a choppin of boiling water, the other ingredients should then be mixed in. Give it to the animal when about new milk warm; as the cream of tartar is heavy, and settles to the bottom of the bottle, it should be well shaken immediately before it is given, that the animal may get the whole contents, as otherwise it may cause disappointment in operating.

The medicine should be given in the morning, and the animal should have nothing to eat for two hours previous to getting it, nor for two hours after, at which time a little hay should be given, and water offered frequently. If the weather be cold, the drink should be warmed to about summer heat. Allow three days of an interval and repeat the purge.

Should the first dose not operate freely, the second should be made stronger, by adding two or three ounces more of salts.

If these simple rules be carefully attended to, before and after calving, and the medicine be given as directed, farmers may then expect their cows to conceive after the bull, and to produce healthy, wholesome calves; for the greater part of calves, for several years past, have been dis-

eased from their mothers, which has been the principal cause of so many dying in infancy.

SECTION II.

OBSERVATIONS ON COWS RUNNING AND NOT CONCEIVING AFTER THE BULL.

It is a notorious fact that, for many years past, many apparently thriving cows, after copulation, have not conceived. This failure has proved a very serious loss and disappointment to the farmer, and the evil seems to be increasing. This has been so generally complained of to me, while going my rounds, that I have been induced to use every means in my power to investigate the cause; and I have discovered, beyond a doubt, and will prove, that it proceeds from an inflamed state of the blood, which affects the generative organs that are connected with the *uterus* (womb), and which causes irritation, and frequent excitement for the bull; but the cow cannot conceive in consequence of the deranged state of the seminal arteries. The cure of this disease consists in copious bleeding, and administering two purges; for which give the same dose, and allow the same interval, which is recommended for cows after calving.—See page 104.

I hope none will hesitate to use the means which I have prescribed, for I have proved the

cure, and can warrant it to prove effectual, if given exactly as recommended. I have succeeded in desperate cases, by the same means, on animals that are termed by cattle-drovers, rutherocks or runners.

If, therefore, these means which I have pointed out, for the management of cows, be attended to, before and after calving, no farther means are required to insure cows to conceive after the bull; but if it be neglected till they run repeatedly, it takes some considerable time, after the medicine is given, before they come in season for the bull, and they consequently produce late calves.

I do not recommend the practice of bleeding cows every year, unless there is a particular cause for it; but a couple of purges should be given every season after calving.

In order, however, to commence a proper system, in all cases where it has not been formerly practised, I would recommend bleeding as well as purging.

SECTION III.

ON THE DISEASES OF CALVES.

CALVES that are allowed to suck their mothers are much less liable to diseases than those that are fed or reared from the pail.

There is always a considerable quantity of viscid acrimonious matter, called meconium, which is confined in the colon during the time of gestation, and if this matter is not purged off, and the stomach and bowels of the calf purified (when newly calved), it will impede the digestive organs from performing their functions, and, consequently, render the calf liable to various diseases, such as costiveness, dysentery, &c. Sometimes it will spread through the system and intercept circulation, and cause the death of the calf in a few hour's illness.

When calves are allowed to be suckled by their mothers, which are healthy, and in good habit of body, nature performs it own cure in purifying them, by the purging quality of the first milk after calving, and which seems designed in nature for cleansing calves and preparing them for the more substantial quality of the milk. I, therefore, particularly recommend those who rear their calves from the pail, to use means to purge and cleanse them when newly calved, which may be done by giving them some of the first milk from their mother, and the second day after they are calved, the following medicine should be given :—

Castor oil, two ounces.
Tincture of ginger, two drachms.
(One dose.)

The above should be mixed in a little thin gruel when boiling hot, and two tea-spoonfuls of common salt in it; give it to the calf when about milk

warm. If tincture of ginger is not at hand, two tea-spoonfuls of powdered ginger may be mixed instead of it, but one or other should not be neglected, as it prevents the medicine from griping the animal while operating.

For a weak calf, rather less castor oil should be given; but it is seldom that less than two ounces will operate to purge the calf properly; and if the first dose has not that effect, a second one should be given the next day, and made rather stronger, by adding a little more castor oil.

If the above rules be carefully attended to, there will be less loss or deaths amongst young calves; but costiveness will sometimes prevail, whatever means are previously used to prevent it, it is therefore necessary to observe their excrements often, and, if they are seen to be costive, to use timely means to remove it; for it proves most destructive to the animal if neglected. I would recommend a little castor oil to be given, and injections prepared and administered the same way as directed for young foals.—See page 11.

It is also necessary to be careful in first letting calves out at their freedom for exercise. If they are closely confined for any considerable time, and let out where they have room to gallop about, they will run themselves to a state of madness, or heat themselves to so great a degree that stagnation takes place when they lie down, which often causes such weakness and stiffness in the joints that they

are not able to stand upon their legs, and many have died from the same cause.

I have known calves that would lie for several weeks and would take their milk very well, and recover the use of their limbs in course of time.

Whenever their limbs are disordered as above-mentioned, I would advise a little blood to be taken from the neck and their joints to be frequently bathed with salt and water. Half a pound of salt to a quart of water is sufficient. This should be well rubbed on the joints as hot as a person can bear the hand in it. The hot water, with the friction of hand-rubbing, is excellently adapted for stimulating the parts to action.

These accidents may be greatly prevented by care in bringing them gradually to exercise in the open air, by leading them, or by having a small place enclosed for them to exercise themselves therein.

When a considerable number of calves are together in a park where they have plenty of room, they will often race and heat themselves to a great degree, and, as soon as they are tired out and lie down, their blood becomes stagnated, and when they feel themselves stiff they are not willing to rise, unless they are forced up.

These violent heats often prove of serious injury to calves, and I have known many instances of calves being found dead in the park; and it has been supposed by the owners that they had died of quarter-ill, when it has been altogether

owing to their lying too long after having been in a high state of perspiration; and it is often the best calves, or those in highest condition, that are most affected by the above cause. I admit that the cause of their running cannot be prevented, but calves may be more carefully noticed, and when they are discovered to take a race through the park they should not be allowed to lie down long at a time after it, but should be raised and exercised pretty briskly, or so as to put the blood in motion, till it comes to its regular course of circulation.

Some of my readers may think the above remarks too trifling to merit notice, but I do candidly assure them that the due observance of the advice I have given is of more consequence to stock-raisers than many of them are aware of; for if calves race through the park to overheat themselves, suppose the effects I have pointed out do not take place at the time or immediately after, yet it disorders the system, and renders them more liable to inflammatory diseases at future periods, particularly that most fatal of all diseases, the quarter-ill.

The next consideration in the management of calves is caution in weaning them. The milk should be reduced by degrees, as costiveness often prevails, when the usual quantity of milk is suddenly diminished. When costiveness takes place, there is nothing better than a little linseed tea, which should be given them frequently. It is ex-

cellent for keeping the bowels regularly open. It also yields nourishment, and supports the animal while under the change from milk to grass or other food. It should be prepared in the following way:—To one quart of linseed put three quarts of cold water. Let it stove by or over a slow fire till it becomes like jelly.

I have found linseed tea to prove of extraordinary benefit in various diseases of black cattle, and have frequently recommended it. Whenever it is used, it should be prepared as above directed. The quantity given should be regulated by the urgency of the case. About half-a-mutchkin of the infusion may be given once or twice a-day to a calf that is costive, till the bowels become regular.

It is a matter of the greatest importance for those concerned in rearing cattle to be careful in the management of their calves in the transition or change from milk to grass; for if they are neglected at that time, it reduces them suddenly to a state of poverty, which disorders the system and lays the foundation of future diseases.

It should be observed, that the digestive organs of calves newly weaned are very weak, and if they are allowed to eat much grass at one time, they have not power to masticate by ruminating or chewing the cud, and consequently cannot receive the nourishment which their food would otherwise yield for supporting the system. Although other causes may be assigned, this is the general and

principal cause that makes calves become so *baggy* or *big-bellied* and low in flesh after they are newly weaned. It has also been the cause of many calves dying with the quarter-ill in the autumnal season of the year.

Young calves should never be allowed to remain long on the grass at one time to overfill their stomachs, but should be confined, or put where they can lie down comfortably to chew their cud. If this rule be observed for some considerable time, it will bring the animal into the habit of chewing the cud before the stomach is over-charged.

Calves that are weaned in the autumn, or late in the season, when the grass begins to lose its succulent juices, should be carefully noticed that they do not over-gorge their stomach; and strict attention should be paid to the state of their bowels that they do not suffer from costiveness or dysentery, for both these complaints often prevail with calves in the latter end of the season.

Dysentery mostly prevails in rainy weather. Calves should never be allowed to remain long on wet grass without some dry food to preserve their stomach from its pernicious effects; and when they are taken up from grass, and put in for their winter quarters, it is necessary to be careful in the change from grass to straw, that they get a sufficient quantity of turnips, or some other juicy food, to keep their bowels regular.

It is generally in the autumn that so many

calves die with the quarter-ill, and the year-olds are taken off by the same disease in the spring.

After they are turned of six quarters old they are not so liable to that disease, which shows the necessity of being careful in the management of young cattle; and as no cure has yet been found for the quarter-ill, the only chance that farmers have to preserve their stock from its ravages, is to use every means in their power to prevent it; and which I am confident may be done, to a great degree, by a due observance of the rules which I have pointed out for the management of calves.

SECTION IV.

REMARKS ON BLEEDING CATTLE.

BLEEDING is the first and perhaps one of the most essential means that can be used to check inflammation, and as the greater part of diseases which are incidental to black cattle are inflammatory, the reduction of blood can seldom do harm if it be performed with caution and regulated by circumstances.

Many farmers are in the practice of bleeding their young cattle (year-olds) before they are put on the grass; the idea is very good, but it would have a much better effect if it were taken off after the animals had been sometime on the grass.

Young cattle are often much reduced in the spring betwixt the time of getting turnips and going to grass, and have but little blood to spare; but when they are put on young grass it purges them at first, and very soon after causes a great redundancy of blood, and that is the time which I would recommend for bleeding them, for redundancy of blood causes stagnation, and stagnation of the blood is the first leading cause of the quarter-ill.

Most farmers will consent to give their animals physic after they are seized with any disease; but if they would be advised to adopt the practice of giving them some purging medicine to cleanse and purify the system before disease strikes, it would be the safest and surest means of preserving their stock.

Bleeding is often practised on young cattle, with the intention of keeping back the quarter-ill. I admit that it is one of the first means that can be used, but I know that it is not sufficient alone to produce that effect, and if injudiciously practised it is more likely to produce that dreadful malady than otherwise.

The year old cattle should be particularly attended to, and when turnips are scarce, some of them should be reserved for young stock, to keep them from being suddenly reduced betwixt the turnips and grass. When this cannot be done, I would recommend the following rules:—that the year-olds be put on young grass as soon as cir-

cumstances will permit, and when they begin to thrive in the least degree, they should have two quarts of blood taken from the neck, and the following purge should be given:—

Glauber salts, six ounces.
Cream of tartar, two ounces.
Nitre, one ounce.
Ginger, in powder, two drachms.
(One dose.)

The above should be mixed and given in a little thin gruel milk warm; the animal should fast for two hours before and two hours after the medicine is given. A little hay may then be offered, and water frequently, which should be a little warmed if the weather is cold; they should also be kept from rain and cold while the physic is operating. Whenever this is thought necessary to be done, it is better to collect the animals intended for the operation, have the medicine prepared, and give it to each animal immediately after the bleeding.

If calves are well fostered, carefully weaned, and well wintered, the ceremony of bleeding and purging is less required, but it can never do harm if done as directed; and when the above caution is not attended to, I have as yet discovered no other means that can restore them to health or save them from destruction. The practice of bleeding and giving a purge should not be confined to cattle of one-year old, but should be observed at all ages whenever they are discovered to be, in the least degree, disordered, and not thriving with their food.

The dose of physic should be increased according to their age and strength.

I have found the operation of bleeding of essential service, even in young calves of a fortnight old, when they were diseased from their mothers. Whenever it is thought necessary to bleed a young calf, from a fortnight to three weeks old, the quantity of blood taken off should not exceed three gills. From one to six months old, from one to three pints may be taken. From six months to a year old, from three to five pints may be taken. And from one to four years old, from two to six quarts may be taken off.

I have seldom exceeded the above rules for bleeding cattle, unless in extreme cases of inflammation; and when such cases happen, I think it more advisable to repeat the operation after an interval of some time, than to take too much blood off at once.

SECTION V.

DYSENTERY.

DYSENTERY prevails much amongst black cattle, and attacks them at all ages, from a month old and upwards, and thousands have died in consequence.

It often happens in consequence of a change of diet, but most prevails in a long continuance of

rainy weather; particularly in the spring of the year, when cold north or north-easterly winds much prevail, with rain; and oftentimes frost with sleety storm, which renders the grass unwholesome for the animal, and disorders the stomach and intestines.

There are two kinds or stages of the disease. In the first or mildest stage of it, the symptoms are purging, with loss of appetite, and weakness; and if neglected, and the scouring allowed to go on without means being used to check it, the disease encroaches, and the symptoms become more alarming. The excrements become mixed with blood and fetid matter, and part of the defensive mucus, which lines the intestines, often comes off with the violent purging. At this stage of the disease it is termed Diarrhœa or Rot, and commonly terminates in mortification and death; so that dysentery needs early means to be used in its *first stage,* to insure success in the cure.

The disease is very inflammatory, and is often produced by the inflamed state of the blood, when no other cause can be assigned for it. Whenever it is observed, and of whatever age the animal may be, I would recommend some blood to be taken from the neck, and the following medicine to be administered:—

Castor oil, two ounces.
Rhubarb, in powder, two drachms.
Salt of tartar, one drachm.
(One dose.)

The above should be given in a little thin gruel, with a little salt in it. The dose is calculated for a young calf at one month old, and should be increased according to circumstances.

I will note the doses which I have been used to administer to cattle of different ages for dysentery.

For a calf at six months old, give—

Castor oil, four ounces.
Rhubarb, two drachms.
Salt of tartar, two drachms.
(One dose.)

For a one-year-old, give—

Castor oil, six ounces.
Rhubarb, half an ounce.
Salt of tartar, two drachms.
(One dose.)

For a two-year-old, give—

Glauber salts, eight ounces.
Salt of tartar, one ounce.
Nitre, one ounce.
Ginger, in powder, two drachms.
(One dose.)

For full-grown cattle, give—

Glauber salts, twelve ounces.
Salt of tartar, two ounces.
Nitre, two ounces.
Ginger, in powder, half an ounce.
(One dose.)

These different doses should be given in thin gruel, about milk warm; but any of them may be

altered a little in the quantity, according to circumstances.

Many of my readers may think the use of purging medicine contrary to the cure, but I am confident, from experience, that bleeding and purging medicine are the first and best means that can be used for the cure; and that it is in vain to try to check the flux by cordial or stimulating medicine, till the system is purified by the means already prescribed.

The animal should be kept dry and warm while the medicine is operating, and for some considerable time after, till the digestive organs come to their proper tone. A little good hay, and often, should be given; and (if off, or weaned from milk) thin oatmeal gruel should be given for their drink; and in cases when their appetite fails, they should be supported with thick gruel, seasoned with salt, and poured over their throat with a wide-mouthed bottle, or a horn prepared for that purpose.

If the purge is given at the commencement of the disease, it is seldom that a second dose is required; but, should the flux continue for three days after the first is given, the dose should be repeated, which seldom fails to check the disease. But, as the animal is commonly reduced, and the digestive organs rendered weak by the disease, it is necessary to assist nature by giving the following cordial medicine:—

Peruvian bark, one ounce.
Alum, in powder, two ounces.
Tincture of opium, one ounce.
Ginger, in powder, half an ounce.
(One dose.)

The above should be given in a bottle of good ale or porter, with a quarter of a pound of treacle or sugar in it. The animal should fast for two hours after the medicine, and, if thought necessary, the cordial drink may be repeated every day, for three or four days; and which ought to be done, if the animal continues weak and not appetized for food.

The cordial drink is calculated for a full-grown animal, and should be reduced according to circumstances; and for calves, from one to twelve months old, if they are weak, and not appetized for their food after the flux is subsided, I would recommend camomile tea, with a considerable quantity of honey or treacle in it; from one to four gills may be given each day, and continued as long as thought necessary.

Linseed tea is very healing for the stomach and intestines, and of great support to the animal. It is also excellent for keeping the bowels regular, and for preventing costiveness, which often succeeds dysentery. I would, therefore, recommend it to be given, and continued for a considerable time after the flux is stayed. Their food also should be given in small quantities, and wet grass should be carefully avoided.

SECTION VI.

RED WATER.

THIS disease affects black cattle at all ages, and has proved very destructive to dairy stock for some years past. Cows, when newly calved, are very liable to it; and, if early means are not used to check its progress, it commonly terminates in death.

There are various opinions amongst cattle doctors, concerning the cause of this disease, but no one has yet led to any satisfactory or evident proof.

I am fully persuaded that the malady does not proceed from any one cause in particular, but from a combination of causes which may affect the system, and produce unusual secretion of serum or lymph; and, from whatever cause it may happen, if a redundancy of this matter exists within the system, it will obstruct the circulation; and the effects it produces are either stagnation or a rupture of the small blood vessels; and if the blood passes off with the urine, it constitutes the disease, or the term of red water.

The blood discharging with the urine is a mitigation of the disease, or, in other words, it partly relieves the animal, and prevents more speedy and fatal consequences. For if the small vessels did not give way, and the blood burst off with the

urine, a general stagnation would take place, and terminate in death, similar to quarter-ill; but, if proper means are used at the commencement of the disease (as soon as the blood is seen to discharge with the urine), it may be easily checked, and the animal restored to perfect health.

Before I proceed to point out the means that should be used, I beg to make a small digression.

When I first came to Scotland, 1813, I found that the disease, termed red water, was much more prevailing in the northern districts than it was in England; and, at that time, it more frequently attacked young cattle (year-olds) than cows. The females were seized with the red water, and the males with quarter-ill; and the former was considered as fatal as the latter, though not so speedy in its termination. It proved so very destuctive, more so on some farms than on others, that I applied my time and study, with all diligence, to investigate the cause and find a cure.

I perceived, by dissecting some animals that had died of it, that bleeding, if done at the commencement of the disease, was one of the surest means of cure. But I could find no authors, on the diseases of cattle, that recommended the practice of it for red water, and my employers generally agreed in the opinion, that the animals lost too much blood by the disease; and, when I would recommend taking more from the neck, my advice was rejected as inconsistent with reason and common sense.

A gentleman in Sutherlandshire, on one occasion, requested me to turn back a considerable distance, from the course I was intending to go, to his farm, stating that the red water was prevailing in his stock, that some of his cattle had died the day before, and that several others were then labouring under the disease. I felt rather unwilling to go, as my advice had been so frequently rejected by others; but in this case, I was allowed my own freedom, and succeeded in the cure of his animals, by bleeding and giving each a good purge. The gentleman satisfied me for my trouble, and, at the same time, requested me to give him a prescription for the cure, as he had sustained much loss by the disease, red water, and had no person in that neighbourhood to apply to in these emergencies. I granted his request, with a strict injunction not to have bleeding neglected.

In two years after, 1817, I received personal thanks from the gentleman,* accompanied with a very handsome present, as a reward of merit for discovering a cure that proved uniformly successful for a disease that had been considered fatal, whenever it was seen to affect the animal.

And I here pledge my word that I have never failed, in a single instance, to cure the red water, when promptly called; and have been exten-

* Major Houston of Creech, near Bonar Bridge, who at that time resided at Clynleish, by Brora.

sively employed for that disease since the above date.

As I consider myself the first man that introduced the practice of bleeding for the red water, the above remarks are intended to show the opposition I first met with in doing so, and the uncommon benefit it has proved to be; and I still insist, and will prove before any cattle doctor in Europe, that bleeding and a good purge is the only sure and effectual means that can be used for that disease, and am truly sorry that it has been so much neglected in many parts of the country. For the vast number of cows that have died of red water, within the last three years, is truly grievous to consider.

I am informed, as I go my rounds, that strong doses of diuretic medicine are often used, which is quite contrary to the nature of the disease, and more likely to augment it than otherwise. I would therefore recommend that cows be carefully examined daily after calving, and on the first appearance of blood coming off with the urine, to take about four quarts of blood from the neck and give a good purge; for which I would recommend the purge prescribed for cows after calving. (See page 104). Any kind of purge may do after bleeding, but none can I recommend with more confidence than that already mentioned. I will, however, note down two or three others:

Glauber salts, twelve ounces.
Jalap, two ounces.
Ginger, in powder, half an ounce
(One dose.)

Glauber salts, six ounces.
Castor oil, six ounces.
Rhubarb, in powder, one ounce.
Ginger, in powder, half an ounce.
(One dose.)

Glauber salts, eight ounces.
Barbadoes aloes, six drachms.
Salt of tartar, one ounce.
Ginger, in powder, half an ounce.
(One dose.)

These are all very good purges for cattle, and are calculated for full-grown animals, and should be reduced according to circumstances.

A pound of glauber salts alone will purge a full-grown animal, and is often used; but I would always recommend some other purging medicine to be used with salts, as it renders the medicine more sure in its operation; for I have often been disappointed in that case, and, consequently, have declined the practice of using salts alone for a purge for many years past. Ginger should never be neglected in a purge, as it is calculated to prevent griping, and causes the medicine to operate with less pain or irritation to the animal. And in all cases when a purge is given, if time will permit, the animal should fast for two hours before getting it.

In some cases of red water the animal will be

lax or open in the bowels, but even in this case the medicine should not be neglected; and sometimes the animal will be very costive. In that case one half of the medicine should be given immediately after bleeding and the other half in four hours after, and an injection should be administered every two hours till the medicine operates; for the quicker that purpose is effected, the more likely it will be to keep back fever and inflammation and check the flux of blood.

Should the medicine not operate in the space of twelve hours after it is administered, one half of the former quantity should be given; and if the animal do not purge within twenty hours from the time that the first medicine is given, give two-thirds of a bottle or about a pint of linseed oil, and have recourse to hot bathing, which I have never yet known to fail; for unless the medicine operates within a given space of time, inflammation is sure to prevail and terminate in death.

The last mentioned applications, however, are seldom necessary; for if the disease is discovered in its commencement, bleeding and the first purge prescribed commonly relieve the animal without farther trouble, and scarcely ever diminish the usual flow of milk. I will here beg to remind my readers that, if they attend to my advice for the management of their cows before and after calving, they will be seldom troubled with red water.

SECTION VII.

QUARTER-ILL.

THE term Quarter-ill is derived from the disease taking a seat in the quarters, sometimes in the shoulder, sometimes in the hind-quarters, and it often takes a seat on the loins; but there is no certainty where it may take its seat, for sometimes it will strike internally, and the inflammation spread with such violence and rapidity that the whole system will become in a state of putrescence in a few hours after the animal is seized. Indeed the inflammation prevails so rapidly after stagnation takes place, which is the first leading cause, that mortification commonly strikes before the animal is discovered to be diseased. In such cases it is beyond the power of man or medicine to save the animal.

This disease mostly consists in a redundancy of blood, and is principally confined to young cattle, and none are more liable than those that are badly fostered, mismanaged in weaning, or any other cause that may reduce the system and disorder the blood; for when they come on any change of food, particularly the young succulent herbage in early spring, it causes the blood to generate so fast that the animal is sure to become diseased. Sometimes they are partly relieved by scouring or purging, and sometimes stagnation takes place, which is quarter-ill.

From the above remarks, the farmer may see the propriety of attending to my advice for the management of young calves till they are six quarters old, which I am sure will prove the safest means of PREVENTING this destructive and fatal malady; for, when firmly seated, no CURE has ever yet been found for it, nor ever will be, unless the disease is discovered before mortification strikes in any part of the animal.

I have been told that cases have been cured after mortification had struck the hip, by cutting out the diseased part, but I much doubt the truth of it; for if mortification had spread to any degree, nothing less than amputating the limb could preform a cure, and a miserable cure it would be for the animal.

I have succeeded myself in curing animals that were supposed to be seized with the quarter-ill, and indeed the symptoms seemed to indicate the first approach of that disease, but they were discovered in first declining their food. They were suddenly seized with a stiffness, which seemed to pervade the whole frame; eyes dull and watery; much inclined to stand in one position, and not willing to move unless forced on with a whip. In these cases I have used the following means, and which I would recommd for animals from one year to six quarters old. Take as much blood from the neck as the animal can bear to lose, and give the following:—

Glauber salts, six ounces.
Rhubarb, in powder, one ounce.
Salt of tartar, one ounce.
Nitre, two ounces.
Tincture of opium, one ounce.

The above should be dissolved in two quarts of thin gruel, with three or four table spoonfuls of salt and a little ginger or pepper in it.

The medicine should be divided into two parts, one should be given immediately after bleeding and the other in three hours after, and, whatever state the bowels may be in, injections should be administered every hour, from the time that the medicine is given till it operates freely.

If the animal refuses to drink, a bottle or two of thin gruel may be given frequently (milk warm), which will expedite the operation of the physic, and the sooner it purges the animal the greater the chance is of its curing the disease.

I have known the medicine to operate in the space of seven hours after it was given, when assisted by the means directed. The animal should be kept in motion as much as possible by brisk walking exercise.

I have very often succeeded in saving animals by the means I have pointed out; but in every case referred to, the disease was discovered in its first attack or commencement, and a supply of medicine at hand. I therefore think it advisable for farmers to keep a small supply of medicine; for there are many diseases incidental to horse and

black cattle that will not admit of delay, particularly the quarter-ill, when if early means were used the animal might be saved; but if there be any considerable distance to send for drugs, even two hours delay might render the animal past redemption.

The following drugs are the safest and those most commonly used for cattle:—

Castor oil, salts, rhubarb, aloes, jalap, cream of tartar, salt of tartar, antimony, flowers of sulphur, nitre, (saltpetre), oil of turpentine, tincture of opium, sweet spirit of nitre, ginger, &c.

Any of these drugs would keep for years, if kept dry and well corked in bottles.

I also think it advisable, when any of the young stock is seized with quarter-ill, to take the others through hand; to bleed them and give each a purge, as a mean of preventing the disease; for when one is seized with it the others are liable from the same causes. The purge prescribed for dysentery, in page 118, is what I would recommend to be given to prevent it, but if the animal be seized I have discovered nothing better than what I have pointed out.

Some authors, in cases where bleeding and medicine are necessary, recommend the bleeding to be performed at night, and the purge to be given the next morning; but whenever I find it necessary to be done, I have the medicine ready prepared, and give it immediately after bleeding, which I think is the best plan, as the medicine commonly operates in less time, and it is the plan which I have adopted for many years past.

Some of my readers may be disappointed that I have not given them any farther information on that dreadful disease, quarter-ill, but I can give no better advice than I have already done, that is, to use every possible means to prevent it.

SECTION VIII.

EPIDEMIC COLDS, INFLUENZA, &c.

CATTLE are more liable to, or susceptible of taking cold, than many who have the management of them are aware of, particularly breeding cows. Colds proceed from various causes, but prevail most generally in the spring season of the year, when the weather is changeable, which is often the case; for it often happens that one day is unusually warm, after very cold weather. This sudden change to heat affects the system by opening the pores of the skin, and producing perspiration to a great degree. This heat may be succeeded very suddenly by a change to cold and rain, or piercing easterly winds, which closes up the pores and gives a sudden check to perspiration, which is the first leading cause of the most dangerous and fatal diseases that cows are liable to; such as an inflammation of the lungs, liver, stomach, bowels, kidneys, &c. and different kinds of fevers.

Breeding cows are more delicate in their constitution than stots or oxen, and, consequently, more

susceptible of injury from causes which might but little affect them, and therefore are more liable to the above diseases. This is a point which I am anxious should be well considered and properly understood by those who have the management of breeding cows, for often, if I may not say generally, it is practicable when any sudden change of weather takes place, that the cows might be taken home to shelter, when it might not be convenient to take home the rest of the stock; and this attention would, doubtless, prevent many of these troublesome and fatal diseases.

The first effects which colds produce on the animal are, heaviness in the eyes, a stiffness and dullness in the motions, and a sudden falling off from milk.

Whenever a cow is discovered to have a cold, I would recommend about four quarts of blood to be taken from the neck, and the following medicine given:—

Flowers of sulphur, two ounces.
Cream of tartar, four ounces.
Ginger, in powder, two ounces.
Treacle, half-a-pound.

The above should be mixed with a bottle of good ale or porter and given milk warm. The animal should be warmly covered to promote perspiration, and nothing should be given to eat for three hours after the medicine, at which time a little bran mash should be given, or malt mash

when convenient, which is much better, and a little good hay often.

The foregoing medicine is excellently adapted for opening the obstructed vessels, and bringing the blood to its usual course of circulation. It should be repeated every day for three successive days. Exercise is necessary, but the animal should be kept particularly warm while taking the medicine.

In two days after the sweating doses are given, the following purge should be administered:—

Epsom salts, ten ounces.
Jalap, two ounces.
Salt of tartar, one ounce.
Ginger in powder, one ounce.

The above should be mixed with thin gruel with three or four table spoonfuls of salt in it, and given milk warm. The animal should be treated as directed for other purges.

If any degree of weakness or debility appear in the animal after the medicine, the following cordial strengthening drink should be given:—

Caraway seeds, in powder, three ounces.
Anise seeds, in do. three ounces.
Peruvian bark, in do. one ounce.
Ginger, in do. one ounce.
Honey, four ounces.

The above ingredients should be put into a jug, and a bottle of good ale or porter made boiling hot should be poured upon them and covered down till it becomes new-milk warm, and then given to

the animal. It is excellently calculated to strengthen and stimulate the system to its proper tone and action; and, in extreme cases of debility, the cordial drink should be repeated every day for several days.

The rules and means I have pointed out for a cold may be thought troublesome and expensive, but I trust other considerations will overrule this, and, if duly attended to, they may be the means of preventing worse consequences, and saving the lives of many valuable animals.

SECTION IX.

CROCLES.*

THIS disease proceeds mostly from cold or the effects of the north-easterly winds in the spring. It is known by the cow being unusually raised in the back, very stiff, the hide thick, and the hair rough and dry. This disease seems more particularly to affect the back, as the animal feels much pain by being pressed or pinched by the fingers and thumb behind the shoulders or on the back. In this case I would recommend bleeding and exactly the same medicine, regulated by the same rules as directed for colds. (See page 132.)

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* In the southwest of England this disease is termed *Chine Fellon.*

I have known instances of cows being reduced to a mere skeleton and almost off milk, or, in other words, not giving the fourth part of their usual quantity, in consequence of the effects of this disease, and I have succeeded in curing it by the same means I have pointed out for colds, and the cows have returned, quickly after, to their usual quantity or full flow of milk. It is necessary to bathe the back and loins with salt and water twice a-day. The warmer it is applied the better, so as not to scald the animal.

This disease sometimes takes a seat in the joints, and is then called the joint fellon. It causes much pain and weakness; in some cases the animal cannot rise without assistance. It proceeds from the same causes as chine fellon, and requires the same treatment; at least I have never yet discovered any better, for I have never found external applications to prove of any benefit to the animal unless the system was rectified by the power of medicine. There are many other inflammatory diseases, fevers, &c. that proceed from the same causes, which I will endeavour to discuss, by some general remarks, in another section.

SECTION X.

WOUNDS AND BRUISES.

CATTLE are very liable to wounds and bruises, but

it is seldom that these accidents prove of such serious consequence to them as they do to horses.

Punctured wounds on the abdomen or belly are the most dangerous, and often happen by leaping over paling, or by being goaded by the horns of the other cattle, which often causes a rupture and endangers the intestines. In such cases a man of experience should be employed to manage them.

If the abdomen be torn and the intestines exposed, the following rules should be attended to without delay:—The animal should be thrown and bound in a proper position. The bowels which are exposed should then be carefully washed with warm milk and water and put into their proper place. The abdomen should then be sewed with clean thread, about six-fold. The lips of the wound should be brought as equally together as it is possible for the operator to do. If the rent in the hide or outer skin is not large enough to admit of sewing the abdomen, it should be extended and afterwards sewed up, leaving about an inch and a half of space between each stitch. The wound should then be washed with a little whisky; or tincture of myrrh, if at hand, is better. A piece of linen cloth should be put next the wound, and several folds of flannel or any other soft substance folded to the size of, or a little larger than, the wound, should be next applied, and a sursingle, or some strong bandage, should be secured round the body, so as to keep the flannel or other dressing steady on the wound.

If the animal does not lose much blood by the accident, it would be necessary to take about four quarts from the neck and give the following medicine :—

Cream of tartar, four ounces.
Nitre, two ounces.
Salt of tartar, one ounce.
Tincture of opium, one ounce.
(One dose.)

The medicine should be given in a little thin gruel with some honey or treacle in it, and should be repeated every day for three successive days.

The animal should be kept very scrimp of hay or grass for several days, as, otherwise, there would be a danger of bursting the stitches. Bran mash, and thick oatmeal gruel with linseed tea, mixed together, should be given to support nature till the wound becomes united, which will very soon take place if the system be kept cool, to check inflammation, according to the means directed.

The bandage round the body should not be shifted for the first five days; it may then be removed, and the wound dressed with the following mixture:—

Blue vitriol, in powder, one ounce.
Alum, in do. one ounce.

The above should be dissolved in a gill of boiling water.

The wound should be well cleaned with soap and warm water every day, dried with a soft towel,

and dressed with a feather dipped in the styptic or mixture, till it gets well.

If cattle are in good habit of body, it is seldom that flesh wounds will prove troublesome to cure; but, on the contrary, if they are in bad habit of body, and their blood impure, a very slight wound may be attended with inflammation to a great degree, so as to endanger the animal's life. In such cases, external application will prove of no benefit, unless the system be cooled and purified by the reduction of blood and cooling medicine; and, if these means are used as soon as the accident happens, few external applications will be required.

I would, therefore, recommend that a flesh wound be properly cleaned, and sewed up as equally as circumstances will allow; leaving a proper space between each stitch, to admit of suppuration. And unless the animal loses a considerable quantity of blood by the accident, some should be taken from the neck, and a purge given. Any one of the purges mentioned for dysentery, in page 118, may be administered, according to the age and strength of the animal.

By using these means the wound commonly heals by the first adhesion, if a clean cut, otherwise it will suppurate; in which case the wound should be cleaned with soap and water, and dressed with the styptic mixture recommended for a rupture wound, in page 137, which is well calculated to keep down proud flesh, and will very soon dry and heal up the wound.

In the first of my practice, I have used different kinds of salves and expensive mixtures for wounds in cattle, and I have been often disappointed in the effects which they have produced; but, for many years past, I have declined using any thing but that very simple styptic mixture, which I can recommend with more confidence than any other mixture I ever tried, if the other means are also used, according to the directions I have given.

As the animals always lose blood (less or more) from being wounded, the owner is often deceived in the quantity, in supposing that the animal has lost more than what he really has done, and, consequently, thinks it unnecessary to take off more. This point should be particularly attended to, for nothing but copious bleeding, and cooling physic, can keep back or check inflammation, particularly in puncture wounds, when the animal is much bruised in consequence.

For any bruise or contusion on the joints, which causes lameness, I would recommend the part affected to be well rubbed with hog's lard, and, if in a part where it can be conveniently done, a bath of camomile flowers should be applied. As much boiling water should be put on the flowers as will swell them, but not more than they can contain, that the juice or strength of the flowers be not lost. The bath may remain on the part for a considerable time, by keeping it moist with a little warm water.

The camomile flowers may be repeated several times, if necessary, but no digestive salve, or drawing poultice, should be applied to a joint.

SECTION XI.

STRAINS.

CATTLE are very liable to strains in their joints from romping on each other, and various causes; as soon as any accident of this kind happens, the animal should be bled, and get a good purge, and the part affected should be bathed with the following mixture:—

Spirit of sal ammoniac, two ounces
Camphorated spirit of wine, three ounces.
Sugar of lead, three ounces.
Vinegar, one pint.

The above should be mixed in a quart of water. A little of the mixture should be well rubbed into the part affected two or three times a-day.

If the strain happens to be in a part where it can be conveniently done so as not to interfere with the joint, I have found a seton to prove most beneficial.

SECTION XII.

CANCERS AND TUMOURS OF VARIOUS KINDS.

TUMOURS and growths (like many other disasters which black cattle are liable to) have been extensively prevailing for the last eight years, and seem to be gaining ground every year; the cause of which will be pointed out in another section, or in my general remarks.

There is a great variety of these tumours, &c.; but cancers in the throat are the most troublesome and destructive. I have never found any sure mode of cure but by actual extirpation, and it requires a person of considerable experience in the use of a scalpel (knife) to perform the operation, as there is a danger of cutting the jugular vein, when the cancer is situated near that part, which is often the case, and many have died in consequence. Although I have never yet met with that accident in performing the operation (and have cut out many hundreds of cancers), yet the sooner these tumours are discovered, and means used to extirpate them, the better chance it allows the operator of succeeding in his performance. If the cancer is moveable, and the outer skin not broke, it may be cut out quite clean, and the wound closed with two or three stitches, which seldom requires any farther attention.

Sometimes a cancer will break and discharge a

considerable quantity of matter, but unless the core which contained it is cut out, it will almost to a certainty fill again, and grow so large as to impede the animal from feeding.

Sometimes a cancer forms in the inside of the throat near the gullet, and often presses on the top of the windpipe and impedes respiration, this is known by the weasing rattling noise the animal makes in breathing. Nothing can be done in this case to remove the tumour, but I have often known bleeding and a couple of purges to check the progress of the growth so as to allow the animal to feed to some value; when, otherwise, he might have been worth nothing but the price of his skin.

I would particularly recommend the above means to be used whenever an animal is discovered to be diseased in the throat.

Hard tumours are often seated on the jaw bone, and if seen at their commencement, and means used, they may easily be eradicated; but if they are neglected they often extend to so great a degree as to render it impossible to remove them without endangering the life of the animal. I have frequently seen these kinds of growths extend from the animal's eye to his lips, and often enlarge the gums so as to prevent the grinders from meeting for masticating their food.

These hard swellings proceed more from blows and contusions on the jaw bone than from any other cause, and many scores of valuable cattle

have fallen victims to their effects. It often happens by throwing stones or weighty clubs at the beasts.

I cannot help remarking the vast number of accidents of broken legs, &c. which I have known to happen from the above causes since I have travelled in the northern districts of Scotland. I admit that no herd-boy could command a number of cattle without some instrument to keep them in subjection, but I am sure that a common strong whip is much better adapted for the purpose than clubs or stones, and much less dangerous.

In taking out cancers the operator should contrive to leave the outer skin, so as to meet equal, to cover the wound, and it is seldom that any other thing is necessary to be done.

In cases where the diseased parts cannot be cut clean away, a little oil of vitriol, butter of antimony, or red precipitate should be applied as a means of preventing the farther progress of the ulcer; but when the diseased parts are cut clean away, and the wound properly closed and sewed (as directed), it will heal quicker and much better without any other application.

SECTION XIII.

ANGLE-BERRIES.

THESE cutaneous tumours grow on every part of the body, but most frequently under the belly. They are quite simple and easy to be extirpated by any person who is willing to try it, and may be done in the following way :—I commonly take hold of the tumours with my right hand, and apply the fore finger and thumb of my left hand to the skin behind the tumour, and twist it out by the root. In cases when I cannot get them out in that way I cut them off with a knife and rub the parts (where the tumours are taken from) with a little common salt, which is all that is necessary to be done in such cases; but the growths should always be taken clean out, for if any part of them remain it will extend and grow larger than before. It is also advisable to get them removed as soon as they are discovered, for if they are allowed to remain they will spread and grow immensely large; and they often become very troublesome to cattle, and retard the progress of their thriving.

There can be no doubt but cancerous ulcers and growths of every description (contusions on the jawbone excepted), proceed from a diseased state of the blood; consequently, I would always recommend one or two doses of physic to be administered to the animal after the extirpation of

any tumour; and if a considerable quantity of blood be not lost by the operation, some should be taken from the neck previous to giving the purge.

SECTION XIV.

FOUL IN THE FOOT.

THIS disease more frequently proceeds from bad habit of body and impurities of blood, than from any other cause. It is much prevailing, and cattle are liable to it at all ages. It commences between the hoofs, and the sensitive part of the foot, becomes ulcerated, and discharges a fetid matter. Sometimes hard excrescences grow out from the ulcerated part. It is commonly attended with a considerable degree of inflammation, and is always very painful; and, if neglected, will reduce the animal much in condition.

As soon as it is discovered, the animal should be thrown down and the feet carefully examined; and if there be any hard substance, it should be cut out clean; or, if there be nothing that requires cutting, a piece of rough cloth should be drawn backwards and forwards between the hoofs to chafe the sensitive part till it bleeds; it should then be rubbed with a little salt or powdered saltpetre; and a little lint, dipped in Barbadoes tar, should then be applied between the hoofs and se-

cured round the pastern with more lint and tar, and tied on with tape; the tar should be carefully applied to the part affected, and smeared on the lint to keep it securely on, and to defend the sore from wet or dirt. The animal should be kept dry for three or four days, and the dressing should remain on till it falls off. It is seldom that more that one dressing is required to complete the cure, even in the worst of cases, if the animal be bled from the neck and get a couple of purges; for which I would recommend the following —

Glauber salts, twelve ounces.
Cream of tartar, four ounces.
Castile soap, one ounce.
Ginger, in powder, half an ounce.
(One dose.)

The above should be dissolved in a quart of boiling water, and given to the animal when milk warm; allow three days of an interval, and give a second dose. The above dose is calculated for a cow or a full-grown animal, and should be reduced according to circumstances.

SECTION XV.

REMARKS ON FEVERS.

MURRAIN, or the pestilential fever, is one of the most fatal diseases which black cattle are liable to (quarter-ill excepted). Its first attack is known

by the animal being seized with a shaking of the limbs, loss of appetite, a difficulty in swallowing, horns and head very hot, the mouth and throat much inflamed, and often affected with a considerable number of blisters. This disease is commonly attended with purging, and generally terminates in mortification of the bowels. The only chance of cure in these cases is to bleed the animal copiously at the commencement of the disease, and give one of the purges recommended for dysentery in page 118. The animal is scarcely able to eat anything when affected with this malady, consequently nature should be supported by giving linseed tea mixed with oatmeal gruel.

As soon as the purge has done operating, or within twenty hours after it is given, I would recommend the following mixture to be given:—

Alum, in powder, eight ounces.
Tincture of opium, three ounces.
Sweet spirit of nitre, three ounces.

The alum should be dissolved in two quarts of boiling water; the other ingredients should then be mixed in and corked up for use. A half pint of the mixture should be given twice a-day (for four successive days) in a little gruel, with three or four table spoonfuls of treacle in it.

The animal's mouth is often very sore with this complaint, and should be frequently washed with alum water. Dissolve three ounces of alum in a pint of water, and add two or three ounces of honey. A piece of rag or sponge should be tied

on the end of a bit of canewood, dipped in the mixture, and applied to the mouth and throat. In the space of three or four days after the animal is seized, a hard swelling commonly appears in some part of the body, more frequently on the loins than in any other part. As soon as the tumour is discovered (if in a part where it can be done,) a poultice should be applied; for the swelling often produces a collection of matter, and the sooner it is brought to suppuration the better, as it relieves the animal from the poisonous matter which would otherwise produce gangrene and mortification.

If the tumour happen to be in a place where a poultice cannot be applied, the part should be fomented often with warm water and well rubbed with hog's lard, and as soon as it becomes soft to the feel it should be opened to admit of the discharge, and afterwards kept clean with soap and water; and if the wound becomes much ulcerated, or proud flesh grows up, it should be dressed with the styptic mixture recommended in page 137.

This disease (murrain) is generally supposed to be infectious. I cannot, however, decide on that point; but I know that it is epidemic—that many are liable to be attacked by it at the same time; and in whatever district of country it commences it commonly spreads rapidly and proves fatal to vast numbers of cattle. It is somewhat similar to quarter-ill, but not so speedy in its termination; for the animal will sometimes live for seven or

eight days after being seized by it, and yet fall a victim to its effects.

The cure of this disease is alway doubtful, and often defies the power of medicine; but it is so far lucky for farmers that this pestilential disease seems to be on the decline, or less frequent in its attacks; for I do not recollect seeing a single instance of it for the last ten years. But, in case it should make its appearance, I would recommend that the first animal affected be separated from the others, and the means used which I have pointed out; and the other cattle (young and old) to be bled and a cooling purge given to each, for they are all liable to the fever; and although bleeding and purging medicine may not prevent its attacks in every case, yet I am confident that it will be the means of cooling and purifying the system, and of rendering them less liable to die in consequence, even were they to receive the infection.

SECTION XVI.

MILK FEVER.

THIS disease proceeds from gross humours and impurities of blood. It first begins with an inflammatory swelling in the udder, and, if neglected, the secretions become obstructed and an inflammatory fever soon pervades the whole system. It proves fatal in many instances, but its effects are

easily checked if proper means are used at the commencement; for which I would recommend that the animal be bled copiously, and the purge given which is recommended for cows after calving, in page 104, and the animal to be managed as there directed. And after the purge has done operating, two ounces of nitre dissolved in a little gruel should be given for four or five days in succession. The udder should be rubbed with marsh-mallow ointment, and a poultice of cow dung should be applied and supported on the part affected with a bandage round the back or loins.

Some people may laugh at my prescription for the poultice, but none can say that it is an expensive one; and I have often been much astonished at the good effects which it has produced even in one night's time when applied to an inflamed udder. I seldom or ever found the means which I have pointed out to fail in curing a milk fever and preserving the udder, and can confidently recommend it.

The term Milk Fever is derived from an idea that the disease proceeds from a redundancy or overflow of milk, as the animal is often seized two or three days previous to calving, sometimes it will happen a few days after; and when a cow is dissected that dies of the fever, the milk is commonly found to be much spread through the animal. But the leading cause which produces the above effects is inflammatory matter existing previously within the system which obstructs the secretions.

SECTION XVII.

THE DOWNFALL IN THE UDDER.

THIS disease is similar to what is termed milk fever. It proceeds from the same causes and requires the same treatment for the cure. It commences with an inflammatory swelling in the udder, and, if early means are not used, it will either spread through the system and produce symptomatic fever, or take its seat in the udder and produce large ulcerated tumours. The downfall in the udder is a term derived from that cause, viz. the acrimonious humours of the system falling down or taking a seat in the udder.

I have been extensively employed for this disease, and could note down a number of recipes for it, but think it unnecessary, as I have found those directed for a milk fever to prove most successful in both cases; and if applied exactly as directed on the commencement of the disease, or as soon as the udder becomes inflamed, it commonly disperses the swelling and preserves the part sound, when otherwise it would be liable to become ulcerated. In such a case, one quarter and sometimes even the whole udder will be totally destroyed.

In all cases when the udder is inflamed, either before or after calving, I would recommend that the animal be milked often and the udder frequently bathed or fomented with warm water; and

if any matter begins to form, which may be easily known by the feel, the part should be opened with a lancet, and ample room given to admit of the discharge. The wound should then be kept clean with soap and water, and dressed sometimes with a feather dipped in the styptic mixture, as recommended for wounds in page 137.

SECTION XVIII.

REMARKS ON INFLAMMATION OF THE LUNGS, LIVER, STOMACH, BOWELS, &c.

BLACK cattle are not so liable to these affections as horses, but when they are seized with either of them the symptoms are similar. They all proceed from the same or similar causes, and require nearly the same treatment, so that I think it unnecessary to give a long description of each, but shall treat of them under one section.

The general symptoms are—stiffness, difficulty of breathing, loss of appetite, irregular palpitation of the heart, the mouth hot and often blistered, legs and feet mostly cold.

If the liver be affected, the animal feels much pain by the pressure of the hand on the short ribs in the right side, and the eyes are unusually yellow. Copious bleeding and good purges are the only means that can be used with advantage for either of the above cases, and these should be

regulated by circumstances. If the animal be costive, the purge should be given at different intervals, and assisted by injections till it operates. The bleeding may also be repeated. Supposing five quarts to be taken at the first bleeding, and the animal not better within twelve hours, other two quarts may be taken; and one quart may be taken every twelve hours after, till the animal be recovered or the inflammation has subsided, which commonly takes place within forty-eight hours after the animal is seized, or otherwise it will terminate in death. After the inflammation subsides the animal remains in a weak debilitated state, and should be assisted by cordials and nourishing food. As food, I would recommend linseed tea, mixed with oatmeal gruel, to be given frequently, as it is well adapted for supporting the beast and keeping the bowels regularly open, which is a point that should be carefully attended to in all cases of fever and inflammation. As a cordial, take—

Caraway seeds, in powder, three ounces.
Ginger, in powder, one ounce.
Gentian root, in powder, half an ounce.
Treacle, two gills.
(One dose.)

The above should be given in a bottle of good ale or porter, and may be repeated for three or four successive days.

SECTION XIX.

VERTIGO STAGGERS, OR INFLAMMATION OF THE BRAIN.

THIS disease proceeds from various causes, but principally consists in a redundancy or an unusual accumulation of blood in the vessels of the brain. There are two kinds or stages of this disease.

The symptoms of the first stage are known by the animal becoming dull and stupid, with a staggering motion when walking, much inclined to sleep, and often resting its head on any convenient place. From these symptoms, it is called vertigo staggers, or swimming in the head. The second stage is indicated by the eyes becoming much inflamed, fierce, and prominent—the animal is restless and often seized with furious fits, almost to madness. At this stage of the disease it is termed inflammation of the brain.

As soon as the disease is discovered, if a full-grown animal, take four quarts of blood from the neck, and give the following purge :—

Glauber salts, twelve ounces.
Salt of tartar, two ounces.
Castile soap, two ounces.
Ginger, in powder, half an ounce.

The Castile soap should be sliced down and boiled in two quarts of water till it is quite dissolved, the other ingredients should then be added, di-

vide it into two parts, give one half immediately after bleeding and the other in four hours after that. When the purging subsides, give two ounces of nitre in a little gruel every day, for three or four successive days.

If the animal be not relieved in two days after the first bleeding, some more blood should be taken (a quart each time), which may be repeated four or five times, allowing twelve hours betwixt each bleeding.

If the animal shows any of the *last mentioned* symptoms, when first discovered, or at any stage of the disease, I would recommend a seton (charged with blistering ointment) to be put in on each side of the head, about two inches below the ears, and the other means to be used exactly as directed. The food given should be light and easy of digestion, while the animal is affected with this disease. On this account wheat bran is proper.

SECTION XX.

INFLAMMATION OF THE KIDNEYS.

THIS disease has proved fatal to vast numbers of cattle, and is produced by a variety of causes; such as strains, which may happen by playful gambols in jumping or riding upon each other, or from an inflamed state of the system, which may take a seat about the kidneys and urinary

passages; but it most frequently proceeds from an obstruction in the urinary tube, occasioned by gravel or stone. This complaint is mostly confined to male cattle, and will be treated of in the next section.

The symptoms are—a frequent desire to make water, but without effect, or in very small quantities, attended with much difficulty and pain to the animal. The urine is dark coloured, and often mixed with blood. If the disease proceeds from the first mentioned cause, the animal will feel much pain by pressing with the hand on the loins.

This disease is often very improperly treated and mismanaged by the inexperienced, from the supposition that strong diuretic medicine should be administered when they perceive that the complaint proceeds from a suppression of urine. This idea is plausible. At the same time, I would wish it to be considered by those who have the management of such cases, that, from whatever cause it may proceed, if an animal be pained by obstruction of urine, the kidneys, which are the organs of secretion, and which separate the urine from the blood, and also the tubes which convey the urine from the kidneys to the bladder (termed ureters), become so much inflamed as entirely to intercept the passage of the urine; consequently, if strong diuretic doses are administered to the animal while in such a state, it is more likely to aggravate or augment the disease than otherwise, unless some

means be previously used to cool the system and check the inflammation. I would therefore particularly recommend the following rules to be attended to :—As soon as the disease is discovered let the animal be bled copiously, according to age and strength, and give the following medicine :—

Castor oil, ten ounces.
Rhubarb, in powder, two ounces.
Jalap, two ounces.
Salt of tartar, two ounces.
Ginger, in powder, half an ounce.

The medicine should be mixed with thin gruel and divided into three parts. Give one immediately after bleeding, and the second part in three hours after; allow other four hours, and give the third part. By dividing the purge and giving it at different times, as directed, it operates with less irritation and pain to the animal.

As soon as the medicine operates freely, diuretic medicine should be given frequently, but in small quantities; for which take—

Castile soap, three ounces.
Sweet spirit of nitre, two ounces.
Tincture of opium, one ounce.

The soap should be sliced down and dissolved in three pints of boiling water; then add the other ingredients, and give half a pint of the mixture in a little gruel every four hours till it is done. A little treacle should be mixed with it.

The rules I have pointed out, seldom fail to relieve the animal, unless the passage be obstructed by a stone. Observe that the medicine is calculated for a full-grown animal, and should be reduced according to circumstances.

SECTION XXI.

STONY GRAVEL.

MANY hundreds of cattle have died of this complaint, before the cause was discovered. The stone often lodges in the urinary tube, and obstructs the passage of the water, so that it comes off in small quantities, or in a very small stream, attended with considerable pain to the animal. In some cases the stone may be distinctly felt in the penis, as it often lodges in the space of from four to six or seven inches from the anus; in this case it may be easily extracted, but it requires a person of some experience to perform the operation. There are many who can extract the stone, and yet the animal often dies, or suffers long in consequence, which, I believe, is partly owing to not giving proper medicine to assist nature after the operation is performed.

I do not adduce the above remarks to discourage any one from trying to perform the operation, for unless the animal be relieved by extract-

ing the stone, death is inevitable; consequently, I would wish to communicate any discoveries I have made that may render the operation more safe and easy for the animal; and will endeavour to point out the means that I have used, which have hitherto proved uniformly successful; and I have operated in a considerable number of cases.

The animal should be thrown, and bound in such a position as may seem most convenient to the operator. The incision through the outer skin should be about two inches in length. There is an elastic membrane that covers the tube (penis), which should be cautiously cut through, so as not to mangle the tube; when this is done, the tube should be examined, as, in some cases, there are several stones, and in different places; the part slides very easily, from towards the anus, or from the point of the sheath, but should not be drawn longer than while it yields to a very slight pull, so as not to injure the part. The stone, or stones, are quite easily to be felt, and should be extracted by making a small incision, not larger than just to admit of taking them out. The wound should then be sewed quite close with a very small surgical needle and a single fold of clean white thread. A very small hold of the lips of the wound is sufficient. The outer skin should then be closed with one or (not exceeding) two stitches, as it is necessary to leave the outer wound sufficiently open to admit of the urine being discharged, as it commonly comes off from that part for several

days till the tube heals up; for if the wound closes on the outside too soon there is a danger of the urine penetrating betwixt the abdomen and the skin—thus lodging under the belly, and rotting away the part.

Male cattle are liable to this distemper at all ages, from one year old and upwards. Whenever it is discovered and the stone extracted, I would recommend (if a full-grown animal) two ounces of sweet spirit of nitre to be given in a little gruel immediately after the operation, and the bowels to be kept open for several days, by giving the following medicine:—

Glauber salts, three ounces.
Cream of tartar, three ounces.
Nitre, two ounces.

The above should be given in a little thin gruel adding a little treacle to it, and should be repeated every day for at least four days, which will have much better effect, in such cases, than giving a strong purge, as it is excellently adapted for keeping back inflammation and bringing the urine to its regular course.

Whenever an animal which has been affected with the gravel or stone has been relieved, I think it advisable to feed him off as soon as possible (if he be of an age fit for feeding,) for more stones are likely to be gendered and trouble him in the same manner. I have often extracted stones from young stots, from one to two years old, that throve and fed very well, and were never after

troubled with any; but, in such cases, I have always recommended diuretic medicine to be given frequently; such as nitre, of which the dose may be from one to three ounces.

SECTION XXII.

JAUNDICE AND TAIL-ILL.

THE jaundice prevails much amongst cattle, but is mostly confined to milch cows.

There are various opinions amongst cattle doctors regarding the cause of it. Some say, or suppose, that it proceeds from a deficiency in the secretions of bile.* Others that it proceeds from an increased action of the liver, which produces an unusual quantity of bilious matter that spreads through the system and produces the disease. Others, again, that it is produced by a gall stone obstructing the duct, or by a spasm of the same. Now, the fact is that it may be produced by all or any of these causes.

This disease is known by the following symptoms:—The animal becomes weak and debilitated, loses his appetite, whilst a yellow tinge is

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* Bile is a yellow liquid which is secreted by the liver into the gall bladder, and is essentially necessary to animal life, from its powers in promoting digestion; but when secreted in too great quantities it produces contrary effects.

observable over the whole body; but is most distinctly seen in the eyes, mouth, and tail.

As soon as the disease is discovered, take two or three quarts of blood from the neck, and give the following purge :—

Barbadoes aloes, in powder, one ounce.
Castile soap, two ounces.
Salt of tartar, two ounces.
Castor oil, six ounces.
Ginger, in powder, one ounce.

The above should be mixed and dissolved in three quarts of boiling gruel, and given milk warm, at three separate times, in equal parts, allowing four hours of an interval between each part. As soon as the purging subsides the animal should be assisted with strengthening cordial medicines, for which I would recommend the following:—

Peruvian bark, in powder, one ounce.
Oil of caraway, one drachm.
Treacle, two gills.

The above should be given in a bottle of good ale or porter, with a glass of good whiskey in it, and repeated every day for three or four days in succession. The medicine may be thought expensive, but the owner of the animal may afterwards be rewarded for using the means, as they are calculated to restore exhausted nature to its regular functions, and bring back the cow to her usual flow of milk. It is also necessary to keep the bowels gently open for a considerable time, for which purpose there is nothing better than linseed tea, which should be given frequently.

In jaundice I have often found the tail to be affected by a disease called the Tail-ill. The rump or small bones in the tail become wasted and dissolved. In some cases I have found the bones quite vanished from the end of the tail for ten or twelve inches upwards. This is a very singular disease, and I believe but little understood, nor do I pretend to know the exact causes of it, although I have had many such cases under my care. It is not always confined to cows that are affected with yellow jaundice; for cattle of both sexes and at all ages are liable to it, but yet it is *mostly* confined to cows, and the tail may be diseased when the animal shows no signs of jaundice. Whenever the tail is affected I always find the animal to be in a weak emaciated state, and I use the same means I have pointed out for jaundice, and which I have found to prove successful. There have been many instances of the tail rotting quite off in this disease, and sometimes death is the consequence. Whenever it is discovered (which may be done by feeling the lower part of the tail, which has become soft, so that the bones can scarcely be felt for a considerable length upwards,) an incision should be made lengthways, from near the point of the tail as far up as the bones are decayed. Some saltpetre, finely powdered, should then be put into the wound and bandaged up, so as to keep in the powder, but not so tight as to stop the circulation. It commonly bleeds copiously. This, however, should not be checked, and the bandage should re-

main on till it comes off of its own accord. The animal should be noticed to ascertain the quantity of blood that comes away, which ought to be about four quarts, or otherwise some should be taken from the neck, and the same medicine should be given exactly as recommended for the jaundice. The saltpetre checks the farther progress of the disease in the tail, and if the medicine be administered as directed there can be no doubt of its effecting a permanent cure.

SECTION XXIII.

COLIC AND GRIPES.

CATTLE are not so liable to these accidental cases as horses are. It will, however, sometimes happen from their eating wet grass or from drinking an unusual quantity of cold water. It may be known by the following symptoms:—The animal often lies down and suddenly rises again, and often strikes its belly with the horns or the hind foot. This disease may be removed by giving the following cordial drink:—Put two glasses of good whiskey into a quart of gruel, with an ounce of pulverised ginger or pepper and two or three table spoonfuls of treacle, and give it to the animal when milk warm. Sometimes this complaint proceeds from a deranged state of the digestive organs, which causes obstructions in the bowels, and, if not removed,

may cause inflammation in the stomach or bowels. In this kind of gripes the animal's breathing is hard, with a quick motion of the flanks and a considerable degree of fever. In such cases the animal should be bled copiously, and get a bottle of castor oil, divided into two equal parts; the one to be given immediately after bleeding, and the other in about four hours after. An injection also should be administered, and repeated every two hours till the medicine operates. Should it not do so in the course of fourteen or sixteen hours from the time of giving the first part, give as follows:—

Glauber salts, four ounces.
Cream of tartar, two ounces.
Ginger, in powder, two drachms.
Common salt, two table spoonfuls.

These should be mixed and given in a little gruel, and this dose repeated every three hours till it produces purging. Some cows are frequently attacked with this kind of gripes or obstructions in the bowels, which commonly puts a period to the animal's existence at some time or other. In such cases, or when the animal is subjected to frequent attacks, no time should be lost in trying to feed it off for the butcher, or otherwise a purge should be given frequently as a means of preventing it. I would, however recommend the former as the better plan.

SECTION XXIV.

FOG SICKNESS, HOVEN OR BLOWN.

THESE are synonymous terms; *i. e.* are different terms for the same accidental case, which is a fermentation in the stomach. Cattle are very liable to this complaint, and many have died in consequence; but, like many other accidents, might be mostly prevented by proper caution. It proceeds from an overcharged stomach with grass or potatoes, and often happens when cattle are changed or shifted to a fresh field of grass, particularly when the clover is rich and luxuriant. They eat so voraciously of the succulent herbage that the stomach becomes overcharged; fermentation ensues, and swells the animal to such a degree as in many cases to rupture or burst the stomach.

These cases most frequently happen when cattle are put on the second crop (commonly termed *foggage*), particularly in rainy or dewy weather. The young sprouts of clover imbibe so much of the moisture, and consequently yield so rich and tender a bite to the animals that they often overgorge themselves in a very short space of time; for under such circumstances they seldom allow themselves time to ruminate or chew the cud, unless they are restricted and taken from the grass (by those who have the management of them) to allow the necessary time for that purpose.

This caution should be particularly attended to —not to put cattle on wet foggage, or, if they are put on it, to remove them very soon after, that they may have time to chew the cud; for it should be observed that if the clover be wet and the animals can get a full bite of it, they will devour as much in half an hour as would serve them two hours to ruminate. If this caution be neglected the beast soon becomes hoven or swelled. There have been many experiments tried to relieve them in such distress; but, if the case be desperate, there has been no invention yet discovered (to my knowledge) equal to the common probe, which, I believe, most farmers keep for that purpose. The probang also has often been used with success.

As soon as the animal is discovered to be blown, he should be taken to a straw-yard and gently moved about, and, if the case be trifling, the swelling will soon begin to subside; but if, on the other hand, the swelling should increase and the animal be a full-grown one, give a mutchkin of train oil; or, should such not be at hand, give half a gill of the oil of turpentine, mixed in a little ale or gruel.

I have known either of the above prove successful in several cases; but, should this not have the desired effect and the swelling continue to increase, no time should be lost in using the probe, which I never yet knew to fail when introduced before the stomach or intestines had burst. I be-

lieve the part where the probe should be introduced is generally known—to wit, on the left side, betwixt the last rib and the haunch bone.

As it requires considerable force to introduce the instrument into the stomach, I think it advisable to make an incision through the skin with a penknife, and then put in the probe; or, should a probe not be at hand, there is no danger in cutting into the stomach with the knife, so as to relieve or give vent to the confined air.

I have known many instances of cattle gorging their stomachs to such a degree that nothing less than an incision large enough to allow the hand to be introduced to take out the grass, could have saved the animal's life. Many hundreds of cattle have been saved in this way.

From the foregoing remarks, owners of cattle may perceive that, when such accidents happen, and the case should prove desperate, there is no danger in making an incision into the stomach to relieve the animal. I have already recommended that when cattle are discovered to be swelled on grass, they should, if convenient, be put into a straw-yard, or otherwise some straw should be put under them, for if they lie down or fall on a hard place, while the stomach is so distended with air, a rupture is mostly sure to be the consequence.

In all cases where an animal swells so as to render it necessary to use the probe, or to extract the contents of the stomach, a cordial drink should be administered, for which take—

Caraway seeds, in powder, two ounces.
Ginger, in powder, one ounce.
Treacle, one gill.

Mix the above and give them in a bottle of good ale or porter, and the sooner the better after the operation, as it is calculated to check the fermentation and rouse the digestive organs.

The animal should be fed sparingly for several days, and a sticking plaister should be put over the wound, which soon heals if small or only made by the probe; but if so large as to admit of the hand being introduced, it commonly takes a long time to heal up, as part of the excrements will work through. However, nothing can be done for it beyond keeping the wound clean and putting a plaister on to defend it from rain or external air, when nature will complete the cure.

Cattle are very liable to swell in consequence of a piece of turnip lodged in the throat, which is easily forced into the stomach by the flexible leather rod commonly called choke-rope, but should the turnip be firmly fixed, there is a danger of bursting the œsophagus or gullet in forcing it down. In such a case, the turnip should be allowed to remain and the probe be introduced into the stomach, or a small opening may be made with a knife, which commonly prevents any farther danger to the animal till the turnip be dissolved and slides into the stomach, which generally takes place in the course of six hours, during which time the animal should fast. A table

spoonful of salt should be mixed with a gill of water and put down the throat, which will cause the turnip to dissolve in much less time.

In the preceding pages I have endeavoured, in the plainest manner I could, to inform those who have the management of cattle how they may trace effects to their causes; and I am confident, if they read with attention and adhere strictly to the advice I have given, that they may, in a great measure, prevent these inflammatory diseases which have so much prevailed for many years past, and also be able to render assistance in cases of necessity.

It is probable that some of my readers may say that I have given but a very limited number of recipes in proportion to the variety of diseases which I have treated of. Should any one think so, I would wish him to understand that my principal intention in writing this treatise was to instruct the inexperienced; and although I could have entered much farther into the materia medica, I thought it better not to puzzle any one's mind with a multiplicity of drugs, but to prescribe such medicines as are easily to be obtained; and have proportioned them in such quantities for each dose as I have been in the practice of administering with success. At the same time, it should be considered that, owing to the great variety in the size, strength, and constitution of cattle, from the small dwarf breeds of Shetland or Orkneys to the large Teeswater ox, it is scarcely possible for any

man to commit to paper any standard rule for the proportion of doses necessary to be administered to cattle from youth to age, without exceptions. It should, therefore, be observed, that the doses which I have marked down for different ages, are calculated for the middle size of cattle, or what is commonly termed the old Aberdeenshire breed.

I shall now conclude this treatise with the following

GENERAL REMARKS.

There is scarcely a disease incidental to black cattle in which the administering of a purge can do harm, but the principal or greatest error in that point, according to the information I get when travelling, is, in giving too little, or not a sufficient quantity to operate, and which only aggravates the disease and does more harm than good.

In all cases when purging is required, the state of the animal's bowels should be considered, and if middling open the full dose should be given, but if costive the dose should be divided and given at different times and assisted with injections till it operates; but in such cases an extra quantity of medicine is generally required before the desired effect can be obtained.

I have frequently been asked by my employers if I could account for or give any reason why

inflammatory diseases have been more prevalent of late years than in former times. I have already stated the pernicious effects of cold on the animal frame, and how liable cows and young calves are to be affected by it, particularly in the sudden changes from cold to heat; and, since the year 1826, the seasons have been very fluctuating and changeable from heat to cold to a great degree, and the transitions have also been very sudden and frequent. This is the principal or leading cause.

And the different mode of culture also may have a material effect on the animal constitution. I shall commence with the turnip crop, and I think I may safely say that, when I first came to Scotland, 1813, there was not, at an average, more than one acre of turnips for every three that are now cultivated.

I think the above statement pretty correct from the observations I have made while going my rounds. These have been mostly confined to the northern districts.

I do not mean to say that the increased cultivation of turnips can be in any way objected to; but, on the contrary, I consider it not among the least of the many improvements I have witnessed in agriculture. At the same time I know that they are often given injudiciously to cows and are very injurious to them, particularly when far advanced with calf (see page 103). They are also hurtful to young cattle when given in large

quantities, unless an adequate proportion of dry food be allowed with them.

Some seasons there is a plentiful crop of turnips, at the same time that fodder is scarce, consequently they are given very freely to cattle. In such cases, I would recommend salt to be given with them, which is excellent for preserving the animal's stomach from the ill effects of any cold watery food.

The next thing to be remarked is the high state of cultivation, or, in other words, how much crops are *forced* now to what they formerly were, with what unremitting care the farmer cleans and prepares his land for the seed, which is also assisted by the strongest manure that can be obtained, and the many thousand acres that have been taken in and brought under crop within the last twenty years.

I acknowledge these to be improvements of the greatest magnitude—of universal benefit, and which redound much to the praise of the agriculturist. At the same time I beg leave to state that, while these general improvements have been going on, cattle have been confined to less bounds of pasturage and have had less variety to choose from; if, on the other hand, they were allowed a great variety they would be led by instinct to eat of such herbage as is most congenial to their nature, and would, consequently, be less liable to disease.

I think the preceding remarks sufficient to show why diseases have prevailed so much of late

years. I acknowledge that some of the causes which I have stated are unavoidable, particularly the sudden transitions of weather, yet I am sure that cows and young cattle might be more sheltered and preserved from its effects than they are.

I have already treated on the management of breeding cows and young calves, at some considerable length; but as much depends on the farmer's attention in these points (I mean in procuring healthy stock,) I beg to make a few additional remarks on this head.

There is nothing, perhaps, more injurious to cows and young cattle than their being allowed to remain too long on wet grass in cold weather, as it renders them liable to various diseases. In spring and autumn the weather often sets in rainy and cold for several days with very little intermission. In such cases I have been grieved to see animals crouching about the fields, and have remonstrated with farmers on the impropriety of allowing their dairy stock to be exposed to the inclemency of such weather.

Some seasons when fodder is scarce, farmers are obliged to let their cattle shift the best way they can; but, on all such occasions, when farmers are in possession of dry food, I think it advisable that they should give it to their cows and young cattle in wet weather, and allow them to be less time on the grass. I think with proper management there are few seasons that would not admit or allow a farmer an opportunity of reserving a stack of

fodder to give his animals in such emergencies.

Some years ago I stopped a night with a gentleman* who is a very active and intelligent farmer. Hay happened to be very scarce that season, consequently he adopted a plan which I think would prove extremely useful to many. He had some old straw that was of no use but for litter, or bedding for his beasts; and to help to make up for the deficiency of his hay crop he mixed it with some foggage or second crop, which was salted and made into a stack. My horse was supped with this composition, and I never knew him eat more greedily of the finest hay I ever saw before him; for he did not leave a single straw from an ample allowance that was given him for supper. Thinking it might prove of immense consequence were the plan made public, I inquired particularly how it was managed, which was in the following way:—A layer of straw and a layer of foggage were alternately laid on till the stack was finished, throwing some salt over every third layer. The quantity of salt should be proportioned to the size of the stack, allowing two stones or thirty-two pounds of salt to every hundred stones of hay. The foggage should not be more than half dried, so as to allow of its sweating or heating a little in the stack, by which means the straw becomes impregated with the salt and the juice of the clover

* Mr Macconachie, Keithmore.

or herbage, and affords a palatable bite to the animal; and I have no doubt but it contains as much nutriment, and, perhaps, even more than badly-managed hay.

I think, that were this plan adopted by farmers, they would seldom be at a loss for provender for their dairy stock, and as salt is cheap and easily to be obtained, I do not know a better purpose that a part of the second crop or foggage could be applied to than what I have mentioned.

Some seasons the second crop is very abundant, and in some cases I have even seen it so plentiful that it could not be consumed by the animals, or in the way that it is generally disposed of, and, consequently, a great part of it wasted.

It should be observed that clover grass when it comes into flower or full bloom is then in its best state for use, for after that period the strength or principal substance of the grass gradually diminishes, and if left till the nights get frosty it becomes unpalatable and very unwholesome, particularly for horses; when, otherwise, if it were cut when in proper season (*i. e.* in full bloom,) mixed with straw, salted and made into a stack as directed, it would prove of double the value it could be of in any other way.

I would, therefore, particularly recommend farmers to make a fair trial of it, and I am fully persuaded that the benefit would amply repay the trouble. When rain and cold weather prevail, this composition would be found very useful for

cows and young cattle, and would be a means of preserving them from the bad effects of cold and wet grass, which have proved destructive to thousands.

It should also be considered that horses are very faint and weak in the autumnal season of the year; and under such circumstances I have frequently seen them fed with frosted foggage, much to the injury of their constitution; whereas, had the foggage been cut and prepared as directed, it would have been found very little inferior to hay, and, consequently, better calculated to support the animal's strength and spirit for their labour.

I have acknowledged the many improvements that have taken place in the system of farming but there is still room for amendment in the management of live stock; and I flatter myself that the advice I have given in the preceding pages (if duly attended to,) will contribute much to the farmer's interest on this important head.

Postscript.—I am aware that my theory of conception is somewhat at variance with the ideas entertained by some medical gentlemen on that subject; yet I beg leave to state, that what I have said on this head has been the result of many and careful experiments and dissections, performed under every state and condition of the uterus.

J. W.

ON THE

BREEDING AND MANAGEMENT

OF

SHEEP;

THEIR DISEASES AND METHOD OF TREATMENT.

MANAGEMENT OF THE FLOCK.

THE first point to which the sheep-master's attention should be directed, is the production of a healthy and profitable breed of sheep. In order to this, he must select from his lambs all those that offer inferiority of appearance, and prepare them for the butcher; reserving those which are faultless for stock. If this practice be uniformly observed, it cannot fail to issue in the production of a valuable breed, that will continue to inherit for a long period all the good qualities for which it was at first distinguished. In the course of time, however, the sheep will appear, without any visible cause, to decrease in size, and to become unable to bear the severity of the weather. These indications give the farmer warning that he has been breeding too long from close affinities, and that the introduction of *new blood* into the flock is necessary to arrest the degeneracy that is creeping

into the fold. A ram must be judiciously selected from another breed, one that has been accustomed to similar soil and food with his own, and this must supply the place of the latter for one year; the effect of this measure will be to renovate the tone and vigour of the flock, till a similar indication of falling off shall intimate a necessity for repeating the experiment. There are two great errors to be avoided in the breeding of sheep: the propagating over long from an unmixed breed; and the too frequently crossing the breed, without reference to the similarity of the animals brought together.

BREEDING EWES.

The ewe is at maturity for breeding at fifteen or eighteen months. The period of coupling her with the ram must be determined by circumstances. The period of yeaning for house lambs should commence in September or October, as they will then be ready for market in November or December. As a general rule, however, it is advisable that the lambs should not fall until the severity of the winter is past, and the pastures begin to offer food. Neither should the lambing season be too long protracted, as the ewe suffers as much from excessive heat as the lambs from cold. If the lamb falls late, there is a difficulty in preparing the ewe for the butcher and clearing the ground for a new stock.

A few weeks previous to putting the ewes to the ram, the former should be placed on a better pasture than usual; they should also be folded and examined, and if any are found decidedly inferior in appearance, these should be prepared as speedily as possible for the butcher, that the breed may not be deteriorated by their impregnation. Forty or fifty ewes may be allowed to the shearling ram, and seventy or eighty to older ones. If there be any appearance of incompetency in the ram, his place should be supplied by another so soon as the fact is ascertained, which may be done by observing whether the ewes continue in *blossom*, and follow the ram from place to place. The first ram should, in any event, be removed at the end of the third week, and another substituted. During their pregnancy the ewes should be gently driven to and from the fold, without a dog; they should also be kept separate from the rest of the flock, and provided with a sheltered and good pasture. They may be fed with turnips or mangel-wurzel, or other green food; but especial care must be taken that they do not gorge themselves, as there are so many causes of inflammation ready to act on the least excess in food. As the period of yeaning approaches, the ewes should be put on better pasture, to increase their strength, and to cause an adequate supply of milk for the lamb. The process of *clatting* should now commence, which is the cutting away the wool from under the tail of the ewe, and the inside of the thighs and round the udder.

ABORTION.

The ewe is not very subject to abortion, but there are occasional instances in which it occurs. The causes tending thereto may be starvation, especially when a cold winter succeeds to a wet summer and autumn;—irregular intercourse with the ram after impregnation;—incautious and hasty driving;—a leap over a ditch or gate;—or a fright from the sudden appearance of a dog amongst the flock. The symptoms of abortion do not appear till it is too late to counteract them. The consequence of abortion is uniformly the death of the lamb; in some cases it is born alive, yet dies in a few hours afterwards. After abortion it may be advisable to inject a solution of the chloride of lime into the uterus of the ewe; and a little gentian and ginger with small doses of Epsom salts may be administered. Care must be taken that the ewe do not eat to excess, nor of food too nutritive.

PREPARATIONS FOR LAMBING.

A small pound, or inclosure, in a sheltered corner of the lambing field, should be prepared, into which the ewes and lambs requiring assistance may be driven. A smaller field with better pasture must be in readiness for the ewes that bear twins. These preparations being made, there will be less confusion when the lambing commences.

The lamber should have with him his lamb-crook; a bottle of milk (ewe's milk if possible,) and carried in his bosom or in an inside pocket, that it may be kept warm; some cords to tie the legs of the ewes that require assistance or examination; a pot of tar, with two or three small marking irons, that he may place a different mark on each pair of twins, in order to recognize them afterwards; a small pot of grease or oil to lubricate his hand when necessary to introduce it into the womb; a sharp knife, rounded at the extremity, to remove the lamb piece-meal from the mother if occasion requires; a polished iron rod twelve inches in length, with a button hook at the end, to remove a dead or divided fœtus; a drenching horn; a bottle of cordial, consisting of equal parts of brandy and sweet spirit of nitre; and a strong infusion of ergot of rye.

LAMBING.

The lambing having commenced, the lamber is to redouble his attention, watching the motion of the ewes with the greatest care, but never interfering too prematurely, as nature, in the majority of cases, will accomplish the birth without any foreign assistance. The state of the weather will determine in a good degree the proper moment for rendering assistance to the ewe: if it be warm and moist, the lamber will need to interfere earlier than at other times. When the ewe is exhausted

with natural efforts to expel the lamb, she will frequently quietly suffer the lamber to give her aid. In this case he is to ascertain the nature of the presentation. "Is the lamb coming the right way, with its muzzle first, and a forefoot on each side of it?" Unless the tongue of the ewe is black, and protruding from her mouth, a table-spoonful of the cordial, with twice as much of the infusion, will probably recal the pains. If this fail of its effect, in another quarter of an hour another dose should be administered; after which, if nature does not rally, mechanical assistance must be given. Recourse has sometimes been had to the Cæsarian operation, but the results do not warrant the experiment unless in cases where the death of the ewe is otherwise inevitable. False presentations require all the lamber's care to accomplish the delivery; and when insuperable obstacles impede the birth and endanger the life of the ewe, or when the fœtus is misshapen, or lies dead in the womb, parturition must be effected by a prompt use of the knife and hook.

INVERSION OF THE WOMB.

Inversion of the womb will occasionally follow delivery; it may be gently returned and confined in its situation by a small iron ring passed through the lips of the external parts; or a strong ligature may be tied round the protruded parts, which will then slough off in a few days. Every ewe from

whom the uterus has protruded, should be prepared for the butcher so soon as she has reared her lamb. The ewe is also subject to inflammation of the womb both before and after lambing; for this disease there is no cure, but the substitution of dry food for the injudicious quantity of turnips frequently allowed, may prove a preventive. The inflammation after birth has in a few cases yielded to bleeding and purgatives.

MANAGEMENT OF THE LAMBS.

The care of the lambs after yeaning affords incessant occupation to the farmer and his attendants. The shepherd should first examine the newly dropped lambs, and if they are chilled, give them a little milk and place them in a warm shelter. The twin-field will demand his particular care. It will be a work of difficulty to keep the offspring and parent together, and to overcome the capricious neglect which sometimes occurs on the part both of the ewe and the lambs, the former repulsing the lambs, and the others obstinately refusing to seek the nourishment nature has provided. The shepherd must bring back the stragglers to the respective ewes, and assist the instincts of nature in both parties by assiduous attention. The ewe that has lost her lamb will require most frequently a substitute. This is to be selected of the same age as the one lost, for two reasons: first, that the ewe may be more readily induced to

adopt it, and, secondly, that her milk may be of suitable quality. A little art is used to deceive the ewe when the substitute is brought to her, the new lamb being wrapped in the skin of the dead one and smeared with its blood; but so soon as she has admitted it, the false clothing is to be removed. When the lambs begin to nibble the grass, which is usually in two or three weeks, and often considerably sooner, great care should be taken not to introduce them into too luxuriant a pasture, as nothing proves more fatal to the young flock than a sudden change to rich herbage. A lamb diseased from this cause is termed a *gall-lamb*, from the excess of gall or bile in its system; the remedial treatment should be immediate bleeding, and afterwards doses of Epsom salts, with a small portion of ginger.

CASTRATION.

Lambs that are not intended to be kept for breeding must be *castrated;* and considerable difference of opinion exists as to the time when this ought to be done. Some have cut the lambs on the very day they were born, others at periods varying from the third to the twenty-first day; the principal point to be attended to is that the weather be not unusually warm, and that the lambs are strong and healthy at the time of the operation. There are several methods in use, but the following seems to be most preferable. A waxed

cord is to be tied, as tightly as possible, round the scrotum above, and quite clear of the testicles, when, in the course of two or three days, both scrotum and testicles will drop off. This method has never failed except in cases of carelessness, where the ligature has been sufficiently tight to cause inflammation and excessive pain, but not to stop the circulation.

DOCKING.

The *docking* of lambs ought not to be done in very cold weather, as the tail affords a great deal of warmth to the animal. It is performed in the following manner:—An assistant holds the lamb with its head pressing against his belly, and thus presenting the haunches to the operator, who, with a knife, or a strong pair of scissors or forceps, cuts off the tail at the second or third joint from the rump. A few ashes or a little flour should then be sprinkled on the wound to stop the bleeding. Care must be taken that the incision be made exactly on the joint, otherwise the healing will be protracted till the mutilated joint has sloughed off.

GARGET.

The *garget*, or inflammation of the udder, is a disease to which ewes are liable during the period of suckling. Whenever the ewe repulses the lamb

on attempting to suck, the shepherd should examine her, and if he find redness, enlargement and tenderness in the teats, together with small kernels or tumours, he should instantly clear away the wool from the udder, and foment it with warm water, administering at the same time a dose of Epsom salts. If the disease do not give way to this treatment, the fomentation is to be renewed, and an ointment (composed of a drachm of camphor, rubbed down with a few drops of spirit of wine, a drachm of mercurial ointment, and an ounce of elder ointment, well incorporated together) must be rubbed into the affected part, or the whole of the udder, two or three times a-day. The bleeding and purgative should also be repeated. If notwithstanding these measures, the teats continue to enlarge, the knots becoming more numerous, some of them softening and evidently containing fluid, an incision must be made into the udder where the swellings are ripest, and the pus or other matter squeezed out, and the part must afterwards be fomented. The ulcer should be bathed three or four times a day with a weak solution of chloride of lime; and when the wound assumes a healthy appearance, friars' balsam may be substituted for the chloride of lime till the cure is completed.

SPAYING.

Spaying, or the extracting of the ovaries from

the ewe-lamb, is to be done at the end of the sixth week. The manner of performing the operation is as follows:—The lamb is laid on her right side, near the edge of a table, with her head hanging down by the side; an assistant stretches out the left hind leg of the animal, and holds it in that situation, with his left hand grasping the shank; and if another assistant be not at hand, he also holds the two fore-legs and the other hind-leg with his right hand; the operator tightens the skin of the part, and makes an incision an inch and a half long, midway between the top of the haunch and the navel, penetrating through the skin; a second incision through the abdominal muscles, and a third through the peritoneum. Introducing his fore-finger into the abdominal cavity, the operator draws out the ovaries, which he cuts off, returning the womb and its appendages into the abdomen. After securing the womb by two or three stitches through the skin, he rubs a little oil on the wound, and releases the lamb, which in ten or twelve days will have perfectly recovered.

WEANING.

The time of weaning must be determined by the locality and quality of the pastures. In mountain countries it must be done when the lamb is three months old; otherwise there will not be sufficient time to bring the ewes into good condition by the time of *blossoming*, or to prepare them for the

market. In a milder climate, and on better pasture, four months is the usual period. The first thing to be attended to is to remove the ewes and lambs so far from each other that they shall not hear each other's bleatings. The ewes should be milked two or three times after the separation, to prevent inflammation or garget. The lambs should be put on a better pasture than ordinary; and considerable judgment must be exercised on this point, as the lamb will suffer equally as much from being over-gorged as from insufficiency of nourishment.

DISEASES OF LAMBS.

Diarrhea is one of the most fatal diseases to which lambs are subject. It arises from variety of causes, such as cold, an ill quality of the milk, the first cropping of the pasture, &c. The symptoms to be watched by the shepherd are—heaviness of the eyes, indolent movement, and a bad appearance in the wool. The treatment should be, an aperient, composed of half an ounce of Epsom salts with half a drachm of ginger; to which should be added the *sheep's cordial*, and careful housing and nursing. The cordial alluded to is prepared thus:—Take of

Prepared chalk, one ounce,
Powdered catechu, half an ounce,
Powdered ginger, two drachms,
Powdered opium, half a drachm.

Mix them with half a pint of peppermint water. The dose is from one to two table spoonfuls morning and evening.

The Skit. This disease has been divided into the *white* and *green* skit. It results from an ill quality in the milk, or a derangement in the stomach of the lamb, in consequence of which a hard *curd* accumulates in the stomach, while the *whey* passes rapidly through the bowels. The symptoms of this complaint are a swelling of the belly, with entire costiveness, or a discharge of whitish whey-like fæces. Treatment: magnesia administered in thin gruel, or ammonia considerably diluted with water; combining these with Epsom salts and ginger. As the lamb recovers it should be removed with its mother to a less luxuriant pasture.

Costiveness. This disease usually results from a bare and dry pasture. Administer half an ounce of Epsom salts in solution every six hours till relief is obtained. Afterwards turn the lamb and mother into a more juicy pasture.

Fever. Fever and inflammation in lambs should be taken in time, when they will usually yield to blood-letting and a dose of Epsom salts.

Staggers. This disease is produced by overheating the animal, principally by hurried driving. The symptoms are sudden illness with a staggering walk, or a total inability to walk. Bleeding, purging, and comparative starvation are the only means of cure or prevention.

GENERAL DISEASES OF SHEEP.

Foot-rot. This disease is confined to the foot, and exhibits itself in an enlargement of the coronet and a slight separation of the hoof from it; portions of the horn are worn away, and ulcers form, discharging a thin fetid matter; these ulcers, if neglected, throw out fungous granulations, separating the hoof more and more from the parts beneath till it drops off. This disease is the consequence of soft and marshy pasturage. It should be taken at an early stage and treated with decision. Every portion of horn, in the slightest degree separated from the parts beneath, must be cut away. The fungous granulations must be removed with the knife or scissors, or, when very minute, destroyed with a caustic, viz. the muriate of antimony. The foot should be protected by a wrapping of clean tow, and ought to be carefully dressed and examined every day. So soon as possible, the bandage should be removed, and the sheep placed in a dry upland pasture.

The Scab. This well known and prevalent disease arises from various causes, such as bad keep, starvation, hasty driving, dogging, and subsequent exposure to cold and wet, by which the perspiration is stopped. It is, however, principally communicated by contagion. On examination, numerous pustules are discovered, which have broken and run together, forming a large scab. The cure of this disease is best effected by the appli-

cation of mercurial ointment, which should be made of two strengths. That for bad cases, should consist of trooper's ointment, rubbed down with three times its weight of lard. The one for ordinary cases should have five parts of lard to one of the ointment. The sheep should be well anointed with one or other of these, according to the nature of the case; and if necessary at the expiration of ten days after the first application, the sheep should be dressed again.

The *erysepalatous* scab is more rare and less virulent than the one before mentioned, and consists in an inflammation of the skin that raises it into blisters containing a thin, reddish, and watery fluid. The abstraction of a little blood, and a purge of Epsom salts, will usually effect a cure. If any local application be needed, it may simply be a little sweet oil or camphorated oil.

Lice and ticks.—Flies. Lice and ticks may be destroyed by the mercurial ointment, common turpentine, or even linseed oil. Flies will avoid the sheep that have been well rubbed with spirit of tar, or coarse whale oil; and when these insects have already produced a sore, this may be healed, and further attacks on that part prevented by the application of a plaister composed of a pound of pitch and two drachms of bees-wax.

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