A treatise on the disease in cattle, called red water, or moor-ill : comprehending the cause, symptoms, prevention, and cure : with remarks on darn, and inflammation of the kidneys, &c.; : and how to distinguish these from red water / by Alex. Watt.

A

TREATISE

ON THE

DISEASE IN CATTLE, CALLED

RED WATER, OR MOOR-ILL;

COMPREHENDING THE

CAUSE, SYMPTOMS, PREVENTION, AND CURE.

WITH REMARKS ON

Darn, and Inflammation of the Kidneys,

&c. &c.

AND HOW TO DISTINGUISH THESE FROM RED WATER.

BY ALEX. WATT, DRUGGIST,

KINTORE.

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TO

JAMES BLAIKIE, ESQ.

OF CRAIGIEBUCKLER,

THIS TREATISE

IS

RESPECTFULLY INSCRIBED,

BY

HIS OBLIGED HUMBLE SERVANT,

THE AUTHOR.

INTRODUCTION.

In the year 1830, the Author presented an Essay to the Highland Society of Scotland, on the disease in Cattle of Red Water, or Moor-ill, which Essay is published in one of the Society's Quarterly Journals of Agriculture, in 1831; but from the high price of these publications, and limited circulation of such works in this quarter, a number of people have requested and have prevailed on the Author to publish the following Treatise. This circumstance has caused him much anxiety, as it always was his intention to make and to communicate for the public benefit every information that lay in his power. The following Treatise on Red Water, &c. is the production of several years' particular inquiry into the morbid anatomy of the animal, and has been drawn exclusively from his own observation of dissections; and his motive for publishing it has arisen from the consideration that this disease has been hitherto neglected, or otherways been considered beneath the notice of Medical Practitioners, whose abilities certainly would qualify them to convey to the Public better information than that which the Author is able to do. The mode of treatment of this disease has been very defective, by people administering medicine without knowing its virtues or use, or having any knowledge of the disease, by dissection. It has been asserted by some, that it is a disease of the uterus, and by others that it is the bursting of blood vessels about the urinary bladder or kidneys, and that it is blood that colours the urine. It will be now clearly shown that it is from neither of these causes that the urine is discoloured. There has been a like difference of opinion as to the proper medicines; some giving extra doses of Epsom

and Glauber salts, castor oil, and strong purgative medicines; others giving medicine of a quite opposite nature; and some even affirm that an infusion of green tea will cure, when all other medicines fail. Let all these be well considered by the candid reader, who will judge for himself, and he will see that one case out of ten will not do well; either death, or the loss of hoofs or tail, will follow. It is particularly requested that the treatment laid down in the following treatise be strictly adhered to, and it will be found to have the desired effect; and let it always be kept in mind that the cow should get no turnips or straw during the time of the disease—the lintseed and the meal-seeds are quite sufficient. It is recommended to all persons living within reach of any distillery, to feed their cows, for three weeks or a month, partly with draff and burnt ale; and where these cannot be procured, application should be made to the lintseed infusion, largely, with salt or nitre.

The Author feels a sense of gratitude for the number of subscribers who have patronised the present work; and he trusts that his adding a Recipe for the Foul in the Foot, and another for Hoven or Blown Cattle, will prove a further source of satisfaction to a discerning public; it being his sole object and wish to communicate to the public those discoveries which have resulted from his experience and successful practice.

KINTORE, *May*, 1833.

TREATISE,

&c.

RED WATER, OR MOOR-ILL.

This disease appears at all times, and in all situations; it is difficult to trace its cause, which may arise from the nature of the food, or the state of the weather, or both combined. The cattle most liable to this disease, are cows after calving; and it is most frequently to be found among those that are fed off newly improved lands, and on turnips and straw that have grown on poor ground. Some people are of opinion that eating of herbs, of an acrid nature, is the cause of the disease, such as what is very common, the *Crowfoot*. Those most common on dry lands, are *Ranunculus Bulbosus*, and *Acris;* in wet and low lands, *R. Flammula* and *R. Sceleratus;* and in wood-land pasture, a plant, possessing similar properties, *Anemone Nemorosa*, is usually abundant, and vulgarly called *Darn Grass;* but these acrid plants are rather the immediate cause of the *Darn*, which disorder attacks young cattle during the summer season, whereas the *Red Water* is seldom to be seen but in autumn, winter, and spring. It must be observed that there are other diseases which, in their symptoms, bear some resemblance to the *Red Water*, viz. *Darn*, *Inflammation of the Kidneys*, and *Inflammation of the Mucous Membrane of the Bladder or Urethra*, which often happens to cows after calving. This dangerous and often fatal disease of *Red Water*, in recently calved cows, made

its first appearance in this district, along with the improvements of the country, and the introduction of turnips. How this can be accounted for we are yet to learn, but true it is that the disease is most prevalent in the spring months after the turnips begin to grow a second time, which ought to induce the farmer to pay strict attention to feeding his cows with fresh turnips, and free of second growth.

Symptoms.—*Urine*, frothy, *red* or *black*, according to the urgency of the disease, and time the cow is affected after calving; if within ten days after calving, always of a darker colour, sometimes nearly as black as ink: Contraction of the urinary passage, the parts below the tail not fuller than a speyed quey: Pulse from 60 to 70, the heart felt to beat more strongly: Urine discharged seldomer, and in less quantities: Coldness along the spine, from the fore-shoulders towards the kidneys, drawn together in the belly between the last ribs and the haunch bones, and commonly a purging. If relief is not afforded at the period when the urine changes colour, and the pulse sinks, the eyes appear of a yellow brown tint, the animal refuses to rise, the legs, tail, and horns, turn cold; and, to all appearance, the animal dies perfectly exhausted, without any manifest symptoms of acute pain, during the time of the disease.

Dissection.—In removing the skin of the animals which die of this disease, the adjacent parts have a peculiar yellow appearance, the abdominal fat has the same yellow colour, the first and second stomach are generally pretty full of food, the third stomach, or monyplies, is always found obstructed, its contents are so dry and hard as to crumble and break between the fingers; and the food that has been known to have been given to the cow, (such as corn

or bear) sometimes three weeks before, lying undigested; the fourth, or true stomach, is nearly empty, and somewhat inflamed, and its contents tinged with unhealthy bile. The small intestines show no particular marks of inflammation, but their mucous coat is likewise tinged with the same kind of bad bile, and of an unhealthy yellow colour. The liver is of a darker colour than natural, but shows little signs of inflammation, and does not appear to be deranged in structure. The gall-bladder, in all cases of this disease, is full of black thick bile, resembling thin tar, or train oil and lamp black mixed together. The *ductus communis choldochus* appears to be obstructed by the said thick bile; the pancreas likewise seems to be somewhat affected; the fat, surrounding the kidneys, has the dark yellow tint; the kidneys show no appearance of disease, and on being compressed, emit a few drops of urine, similar to that in the urinary bladder; the last-mentioned organ is full of dark coloured urine, mixed with the thinner parts of the contents of the gall-bladder, and is always very full of this unhealthy substance. The uterus has no particular appearance of disease, but what may be expected to be met with in recently calved cows. The urinary passage is contracted, and general spasm appears towards the neck of the bladder, which always shows by the animal's difficulty in making a proper quantity of urine. There are no other particular marks in dissection, but the whole cavity of the body tinged with a dark yellow colour.

From the above appearances, we see the whole secretions more or less affected, and we likewise see the whole apparatus of secretion diseased; and that, by the absorption of unhealthy inspissated bile into the blood and urine, which colours all the secretions, as jaundice does in the human subject. This is therefore the cause of *Red Water;* the bile, re-

gurgetated into the substance of the liver, is taken up by the absorbents, and passes into the blood, causing derangement of the functions of secretion, and giving a red appearance to the urine. Hence we must conclude that the disease proceeds from indigestion, with the obstruction of the biliary ducts. The stomach, and first intestines, unquestionably perform the most important offices in the animal frame, and may be called the grand sympathizers. Which, with all the local and constitutional derangements of the system, the cause arising from the enlarged and varied communications of that nervous apparatus, known by the name of the great sympathetics; these assimilating viscera carry with them, in their action, all the other organs of the economy, and summon to their aid the whole system of the vital powers. There is an immediate sympathy between the stomach and the centre of all nervous influence; there is an union between it and the brain by the cerebral nerves. In it the food they take is converted into a nutritive fluid, and soon actually becomes blood, the substance that gives life and energy to every part. It is the part to which the properties of life seem to adhere with the greatest tenacity, for, whatever is the kind of death the animal dies, this is the last organ in which the traces of life may be discovered. Moreover, it is the most irritable part of the animal body; and such are its connections and sympathies, that the morbid phenomena, resulting from irritation of its internal membrane, are infinitely more numerous and distressing than all the rest of the animal diseases put together.

Prevention.—The food should be by no means changed about the time of calving; and after calving the cow should be sparingly fed for some days; the turnips should be fresh and free of growth, no corn

or bear should be given, as is the practice immediately after calving. Boiled chaff, mixed with plenty of turnips, is considered very good food; cows fed with draff and burnt ale are seldom affected with this disease, nor those fed from old lands of a deep loamy soil. Common salt, and nitre, are good preventives; a handful of salt, mixed along with their food once a day, for two or three weeks after calving, or an ounce of pounded nitre given every second or third day, with full freedom of plenty of fresh water and wholesome food.

Cure.—The treatment of this disease, like that of others, must vary, in some measure, according to existing circumstances; the indications are 1st, to palliate urgent symptoms; 2d, to remove the cause and obstruction of the bile. Aperient, diuretic, and alterative medicines, form the best practice. Strong purgatives are very prejudicial, large doses of Glauber or Epsom salts seldom do well; but, if they are from necessity used, never more than 8 oz. should be given for a dose, and should always be combined with opium; I have found the annexed recipe to answer better than any yet tried. On the first appearance of discoloration of the urine, let the cow have

℞ Tinct. Opii. ℥i. or 1 oz.
Nitre Potass. ℥i. or 1 oz.
Tartar Potass. ℥iij. or 3 oz.
Warm Water 6 oz.—Mix.

Give this in a bottle of new milk, and repeat the dose at the end of every eight or ten hours until there be a change on the urine, which commonly takes place on the application of the second or third dose. Lintseed infusion should be given for a laxative, prepared in the following manner; take 4 lb. of Lintseed, (if pounded so much the better,) with 8 Scotch pints of water, boil it down to three parts

or one-half, give it to the cow three times a-day, two bottlefulls at the time, and let it be applied as soon as possible after giving the other medicines; she should get no meat for three hours after applying the medicines, but meal seeds mixed with plenty of water, thin enough that she may drink of them at pleasure. When there is any appearance of costiveness, apply injections of warm water, butter, and green oil; indeed nothing is better than an injection of the above prepared infusion of lintseed; it is the softest and best that can be given. It must be observed that there frequently happens a difficulty of passing the urine, as was before observed, from spasm in the passage and neck of the bladder, and want of tone in the organ itself; in this case, the parts behind should be fomented with warm water and soap, and rubbed with the hand for a considerable time until she make urine; should the suppression persist, the same treatment should be continued at short intervals; should this also fail, the hand must be passed up the rectum, and the bladder gently pressed, so as to bring off the urine mechanically; after which the animal will bring it off by her own exertion. It likewise must be particularly observed not to allow the animal to be longer than three or four hours without making water; if this treatment be not particularly attended to, the urinary bladder will lose its tone, and a complete suppression of urine take place, which soon destroys the animal. When there exists considerable irritation or uneasiness in the bowels, and it is not relieved by the foregoing treatment, the oil of Turpentine may be used with success, according to the following formula,

℞ Ol. Terebinthinæ, ℥i. or 1 oz.

given along with the lintseed infusion. The power of this oil in allaying irritation in the intestinal canal,

and promoting the comfort and restoration of the animal, is sometimes truly astonishing; during the time of this disease, the cow should get very little or any food but the lintseed and mealseeds, and, for at least a week after the disorder has left her, she should not get the full allowance of her usual meat. Loss of the hoofs, and part of the tail, very commonly follows this disease, but may be prevented by rubbing the back, legs, and tail, with salt brine twice a day for a week or ten days after the disorder has been subdued.

Darn is like the *Red Water*, in all its symptoms, and attacks cattle of every description, but especially young cattle, when removed from good pasture, to where the fore-mentioned acrid plants abound: the disease should be treated in the same method as the *Red Water*.

Inflammation of the Kidneys may be known from the *Red Water*, by a burning heat, attended with great pain in the region of the kidneys, or across the loins, and in general extending on the ureters to the bladder; the heat is very perceptible to the hand when applied on the part, and if pressed, the animal will instantly give way; the urine is of a high colour, not unlike the *Red Water*, but has not the same substance as in the last-mentioned disease; the urine is often discharged in small quantities, and with considerable pain and difficulty, a shivering or trembling of the whole body, cold and clammy sweats;—the extremities, as the ears, horns, and legs, for the most part are cold; sudden cessation

of the nephritic pains, and the urine drippling away, in small quantities, of a black and fœtid colour, are sure signs of mortification and death. Bleeding should never be neglected on the first appearance of this disorder, as there is reason to believe that, in common inflammation, a greater quantity of blood is impelled towards the inflamed part than in the natural state, and experience proves that nothing has a more powerful effect in checking the disorder than diminishing the determination of blood to the part; bleeding must therefore be a principal means of relieving inflammation; two quarts of blood should be taken on the first appearance of the disease—injections by the anus should be likewise immediately applied on the first appearance of any of the above symptoms, which will be found a very powerful means of abating internal inflammation, and its effect is very apparent in almost all inflammations of the urinary passage, bladder and intestines, or other viscera contained within the cavity of the abdomen. Purgatives should be given in this disorder, but must be used with discretion. There are none of them, in my opinion, antiphlogistic; they always produce more or less irritation, and are only suitable when the cause of the inflammation is in the intestinal canal, in the beginning of the complaint; we ought therefore, in general, to abstain from them, and confine ourselves to emollient clysters and laxatives.

Opium should be applied in this disease, as well as in the *Red Water*: its great property is, that it lessens the danger of inflammation, and allays pain, which is at once a principal symptom of the process, and a cause of its augmentation, as well as that of fever. Opium also quiets the inordinate action of the solids, and agitation or restlessness, so powerfully, that it may well deserve the name of

the grand antiphlogistic remedy. Care must be taken to give it always in sufficient doses, not less than 1 dram (the eighth part of an ounce) at a time, either in this disease or that of the *Red Water;* for, smaller doses to an animal of three or four hundred weight not only fail in fulfilling the object, but frequently produce quite an opposite effect. During its employment, the bowels should be kept open with mild aperients and clysters. The efficacy of opium chiefly manifests itself in the early stage of the disease ; for, as soon as the inflammatory fever has extended itself to the whole system, it loses its beneficial virtues.

FOUL IN THE FOOT.

Cattle of a gross habit of body suffer most from this disorder ; it makes its appearance between the claws or hoofs, in the form of a hard crack, attended with considerable inflammation, and in a short time will discharge a foul fœtid offensive matter, similar to that of the grease in a Horse's heels. The pain is often so considerable as to deprive the animal of its flesh, and reduce it to a mere skeleton. As soon as it is observable, either by lameness of the animal, or by the hair standing in a bristly state about the horn of the hoof, the beast should be taken and the foot properly cleaned with soap and warm water, which may be done by introducing a piece of rag or pack-sheet between the claws, to free them of all dirt and fœtid matter ; this may be done by drawing the rag up and down between the hoofs with the hand until it be quite clean, then take as much of the after-mentioned prepared red precipi-

tate ointment as will lie on your finger, and introduce it properly between the claws, put it close up into the sore, and dress it in the same way for two or three days: the washing may be omitted after the first time, unless it continue dirty. Care must be taken to keep the animal as clean and dry as possible during the time that it may be necessary to apply the ointment.

℞ Red Precipitate, ʒss. or ½ oz.
Corrosive Sublimate, gr. x. or 10 grains.
Hogs Lard, ʒi. or 1 oz.
Make it into an ointment.

The precipitate and sublimate must be properly ground in a mortar until the globes or stars disappear before it be mixed with the Lard. The above practice is the most safe, easy, and expeditious cure of the *Foul of the Foot* that has been yet tried.

HOVEN OR BLOWN CATTLE.

This disease, or rather accident, requires no description, as it is well known to all farmers and cattle-feeders. Cattle are liable to be hoven or blown, both on summer and winter keep; when fed on clover and different other kinds of succulent grasses, in summer, and when on turnips and potatoes, in winter; and it may proceed from a voracious and greedy disposition, or from a weakness or debility of the stomach. The complaint is generally occasioned by the animal feeding upon rich succulent food, so that the stomach becomes overcharged, and rendered incapable of expelling its contents; a fermentation then takes place, by which

a large quantity of confined air is found in the part, and for want of vent the animal swells even to a state of suffocation ; or perhaps a rupture of some part of the stomach or intestines ensues. Sudden death is the consequence thereof. Various expedients have been employed for the purpose of affording relief, both with medicines and by manual operation. There are several kinds of instruments recommended, (for which high premiums have been given,) and which are sometimes successful, but from the difficulty of using them they have never been generally introduced into the country ; therefore probing is the method commonly resorted to in all dangerous cases—which can be done by a neat hand, with little if any danger. To obviate all these inconveniences, if the following medicine be properly and timely applied, it will relieve the animal almost instantly :—

℞ Subcarbonate Potass, ℥iv. or 4 oz.
Carbon. Ammoniæ, ℥i. or 1 oz.

Dissolve these in a bottle of water and put it down the animal's throat, with as little delay as possible. Alkalies of all kinds allay fermentation, and, when given in proper quantities, never fail in accomplishing the desired effect ; when the above preparation cannot be had conveniently, any of the after-mentioned articles will answer : Hartshorn, Soda, Ashes, and Ammonia. When the first dose does not operate immediately, it may be repeated without danger to the animal, and with certain effect, unless the disorder proceed from an extra quantity of food on the stomach, in which case nothing will do but probing.

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