INTRODUCTION

TO THE

DISEASES OF HORN-CATTLE, &c.

To a man sincerely interested in the spread of the veterinary science, it must be particularly agreeable to reflect, that by it horned-cattle, and other classes of inferior domestic animals, subject to disease, are relieved and preserved, no less than horses, and equally demand the attention of every writer on the subject; more especially when he considers the obsolete character of the old books on farriery, and the vague manner in which remedies are exhibited and applied to the various diseases of this species of animals: I therefore trust I shall be performing a task that may benefit a numerous class of the community, alleviate the sufferings of animated nature, and extend the influence of the veterinary art, by the following pages.

The observations now offered to the public, I hope, will be found to exhibit a short, easy, and systematic account of the anatomy,
and physiology, as well as the manner of curing the different diseases of the inferior classes of animals.

It may be remarked, that horned-cattle are not subject to such a variety of disorders as necessarily attend the superior luxury, and more frequent and severe labour of the horse. This circumstance may account, in some measure, for these animals not having shared as much of the attention of our modern veterinary writers, and their having been abandoned to the care of the torturing and illiterate class of men, called Horse Doctors and Cow Leaches.

In the ancient writers there is scarcely anything to be found applicable to modern times. The same may also be said of modern cow doctors, who are nothing more than imperfect copyists of the ancients. From such a source, therefore, we may venture to say, nothing could spring that would answer any beneficial purpose on the present subject.

One practice of these empirics must be particularly guarded against, which is, that as neat-cattle require a less quantity of medicine in a dose than horses, generally about one-third, all those quack drenches so commonly used must for ever be rejected, as of equivocal use, if not of bad and dangerous consequences.
INTRODUCTION.

In making the various and important alterations and additions in the present work, care has been taken, by abridging and compressing some parts, to give it, in every respect, a just claim to the general notice and approbation to which the present state of the veterinary science has right to enjoy. With this view, in the execution of my design, I have constantly endeavoured to preserve order and perspicuity: I have also, been particularly exact in omitting all those fabulous accounts of the imaginary effects of such and such drugs, employed for such and such diseases; which prescriptions, to the disgrace of the writers, both from their own nature, and concurring testimony of the most enlightened and best informed veterinary surgeons, have been now happily exploded.

Nevertheless, we presume not to be perfect in treating so delicate a subject; as no doubt some particulars may have escaped our notice. But if the general plan be good, the candour of the reader, we hope, will excuse those imperfections which are incident and almost unavoidable in works of this kind.
ANATOMY

OF SOME OF THE PRINCIPAL VISCERA OF RUMINATING CATTLE, SUCH AS COWS, SHEEP, &c.

Although I did not originally intend to give any anatomical descriptions in this volume, yet I thought it would be an acquisition to give the following short account of the internal viscera of horned cattle, in order to furnish the reader with a sufficient knowledge of the different parts which constitute the female organs of generation, as serving to cast a light on several functions of the animal economy, and likewise to be useful in case of abortion and false delivery, a matter of primary importance to farmers, breeders, farriers, and cow doctors.

The uterus, and the internal viscera of ruminating cattle, being the same in all, it will not require a separate description for each species; therefore we shall take the foetus in the uterus of cows, as being the largest of the kind, and better adapted to convey a knowledge of their internal structure.

The form of a cow’s uterus differs from the human, in having two large cornuae. This is
common to it with other animals, as the bitch, sow, and the mare. The vagina, and part of the uterus, lie between the rectum and the bladder, at the termination of the vagina is a small opening, the commencement of the os uteri. This orifice is always open in the unimpregnated state, but closes upon conception.

The semen is injected at once into the uterus. In the human subject there is only one cavity, which is called uterus; but in quadrupeds, as we have already observed, there are two tubes, which are called the horns of the uterus, but may be properly called uteri themselves. It has been said, that the reason of there being two cavities, was for the purpose of a more abundant conception; but why mares and cows have two uteri, this question is not yet determined. At the extremity of each horn is placed an ovarium. These organs are absolutely necessary, and intimately concerned in generation; they are connected to the horns by a ligament and the fallopian tubes, at the end of which are found the fimбриæ.

There seems to be no connection, or no direct communication, between the ovaria and the uterus: how, therefore, does the semen affect the ovarium? or, how is the young produced? However strange this may appear, it is known to be really the case; and the young, at a cer-
tain period, burst from the ovarium, and proceed through the fallopian tube into the uterus.

Sometimes the foetus is conveyed into the abdominal cavity, and grows there; but ultimately produces the death of the mother. When the young foetus is conveyed into the uterus, the os uteri becomes closed from a sympathetic power. The embryo adheres to the uterus by the coagulable lymph which is thrown out.

In women, it usually adheres to one, which is the superior part of the uterus; in sheep and cows, to several parts, called placentulae; but in the mare, to the whole of the uterus. At this period a quantity of water is discharged between the foetus and placenta; which water diminishes in its proportionate bulk, according to the age of the foetus. The uterus now becomes larger, not from extension, but by a growth which ensues from its being now much more vascular.

In impregnation the uterus becomes incapable of growth after a certain period: this circumstance is particularly uniform. At this period labour commences, from the foetus still increasing in bulk, and the uterus being deprived of its wonted power. The uterus contracts on the foetus, and, from the expansion of the os uteri, the former is at length dis-
charged. In quadrupeds, the placenta and other membranous parts accompany the foetus. The first of the proper involucra of the foetus is the chorion, a pretty strong firm membrane, on whose external surface are dispersed a great many red fleshy bodies, composed of vessels of the uterus, terminating here; they are of the same number, size, and structure, with the papillæ, with which they are mutually indented.

In an impregnated uterus, we can easily press out of them a chylous mucilaginous liquor: they are composed of a great many processes or digituli, and deep caverns, answering to as many caverns and processes of the placenta. Their resemblance has occasioned the name of papillæ to be given them; and hence it was, that Hypocrates was induced to believe that the foetus sucked in the utero. These papillæ are found in all the different stages of life, in the various stages of pregnancy; and likewise in an unimpregnated state. The chorion being mutually indented with the papilla, they are called cotyledones, or, more properly, placentulae, since they serve the same use as the placenta in women. The separation of these from the papillæ, without any laceration, and our not being able to inject coloured liquors from the vessels of the glands of the
uterus into the placentulae, seems to prove beyond a reply, that there can be here no anastomoses betwixt the vessels. On their coats run a great number of vessels, that are sent to the several placentulae, on the external side next to the uterus; whereas, in creatures that have but one placenta, as the human subject, cats, dogs, &c. the adhesion is somewhat firmer. The placenta is likewise joined to the papillae in the cornua uteri.

The allantois is a fine transparent membrane, contiguous to the former. It is not a general involucrum of the foetus in the mother; for it covers only a small part of the amnios. It is mostly lodged in the cornua uteri. In mares, bitches, and cats, it surrounds the amnios, being every where interposed betwixt it and the chorion. In sheep and goats it is the same as in cows; and in swine and rabbits it covers still less of the amnios. This sac seems to be formed by the dilatation of the uræchus, which is connected at its other end to the fundus of the bladder, through which it receives its contents; and a great quantity of urine is commonly found in it. The membrane is doubled at the extremity of the canal, to prevent the return of urine back into the bladder. Its vessels are so excessively fine and few, that we cannot force or inject liquor further than
the beginning of this coat. This membrane is so far analogous to the cuticula, as not to be liable to corruption, or easily irritated by acrid liquors. The existence of this membrane in women has been warmly disputed on both sides.

The third proper integument of the fetus is the amnios, it is thinner and firmer than the chorion; it has numerous ramifications of the umbilical vessels spread upon it, the lateral branches of which separate a liquor into its cavity. This is the proper liquor of the amnios; which at first is in a small quantity, afterwards increases for some months, then again decreases; and in a cow, near her time, the quantity of this liquor is not above three pints or two quarts. This membrane does not enter the cornua uteri in this creature, being confined to the body of the uterus; whereas the allantois occupies chiefly its cornua.

There are here, two vena umbilicales, and but one in the human subject; because the extreme branches coming from the several placentalæ could not unite so soon as they would have done had they come all from one cake as in the human. There is a small round fleshy body that swims in the urine of this creature, and mares, &c. which is the hippomanes of the ancients. Several idle opinions and whims
have been entertained as to its use: but that seems to be still unknown, or how it is generated or nourished, for it has no connection with the foetus or placentulae.

Having thus considered the several involucra of this animal in a foetal state, we shall now observe the specialities in its internal structure peculiar to a foetus. The umbilical vein joins the vena portarum in the capsulae glissoniana, without sending off any branches, as it does in the human subject. This vein soon after birth turns to a ligament; yet there are some instances where it has remained pervious for several years after birth, and occasioned hæmorrhage. We may next observe the duct, called canalis venossus, going straight from the capsula glissoniana to the vena cava. The umbilical arteries rise at acute angles from the internal iliacs, whatever some may say to the contrary; these also become impervious.

The pulmona artery coming from the right ventricle of the heart divides into two; the largest called canalis arteriosus, open into the descending aorta; the other divides into two, to serve the lungs on each side. The foramen ovale is placed in the partition betwixt the right and left auricles.

At the edge of the hole is fixed a membrane, which, when much stretched, will cover it all
over; but more easily yields to a force that acts from the right auricle to the left, than from the left to the right; by this mechanism, the blood being brought from the placenta of the mother, is thrown into the capsula glissoniana, where it is ultimately blended with the blood in the vena portarum; then part of this blood goes into the vena cava, by the ductus venosus; the rest passes through the liver. First, then, the whole is sent from the vena cava into the right auricle, from whence part of it is sent by the foramen ovale into the left auricle; the rest passes into the right ventricle, then into the pulmonary artery; then the greatest share it receives is sent immediately into the descending aorta by the canalis arteriosus; and the remainder circulates through the lungs, and is sent back by the pulmonary veins into the left auricle; which, with the blood brought there by the foramen ovale, is sent into the left ventricle, from whence it is driven by the aorta in every part of the body. The great design of this mechanism is, that the whole mass of blood might not pass through the collapsed lungs of the fetus; but that part of it might pass through the foramen ovale and canalis arteriosus, without circulating at all through the lungs.

The kidneys, in the fetus, are composed
of different lobes, which serve to give us an idea of the kidneys being a congeries of different glands; these lobes being kept contiguous, the external membrane are pressed by the other viscera, till at length they unite.

We come now to consider the creature as a ruminating animal. There are no dentes incisores in the upper jay, but the gums are pretty hard and the tongue rough. This roughness is occasioned by long sharp-pointed papillæ, with which the whole substance is covered. These papillæ are turned towards the throat, so that by their means the food, having once got into the mouth, is not easily pulled back. The animals, therefore, supply in some measure the defect of teeth, by wrapping their tongue round a tuft of grass, and so, by pressing it against the upper jaw, keep it stretched, and cut it with the teeth of the under jaw; then, without chewing, throw it down into the œsophagus, which in ruminating animals, consist of a double row of spiral fibres crossing one another. All animals which ruminate must have more ventricles than one; some have two, some have three; our present subject has no less than four. The food is carried directly into the first, which lies on the left side, and is the largest of all; it is what is called by the general name of paunch, by the vulgar.
There are no rugœ upon its internal surface: but, instead of these, there are a vast number of small blunt-pointed processes, by which the whole has a general roughness, and the surface is extended to several times the size of the paunch itself. The food, by the force of its muscular coat, and the liquors poured in here, is sufficiently macerated; after which it is forced up hence by the œsophagus into the mouth, and there it is made very small by mastication: this is, what is properly called, chewing the cud, or rumination; for which purpose the dentes molares are exceedingly well fitted: for, instead of being covered with a thin crust, the enamel of them consists of perpendicular plates, between which the bone is bare, and constantly wearing faster than the enamel, so that the tooth remains good to extreme old age; and by means of these teeth, the rumination is carried on for a long time, without any danger of spoiling them. After rumination, the food is sent down by the gullet into the second stomach, for the œsophagus opens indifferently into both. It ends exactly where the two stomachs meet; and there is a smooth gutter with rising edges, which leads into the second stomach, from thence to the third, and also to the fourth: however, the animal has a power to direct it into which it
will. Some suppose, that the drink goes into the second; but that might be easily determined by making them drink before slaughter. The second stomach, which is the anterior and smaller, consists of a great number of cells on its internal surface, of a regular pentagonal figure, like to a honeycomb. Here the food is further macerated; from which it is protruded into the third, generally called the manyplies; because the external surface rises up into a great many plicæ or folds according to the length of the stomach. Some of these plicæ are further produced into the stomach than other, first, two long ones on each side, and, within these, two shorter in the middle, &c. There are numberless glandular grains, like millet-seeds, dispersed on its plicæ, from which some authors call this stomach the millet: from this passes into the fourth, whose name is caillé, * or the red, because of its colour. This much resembles the human stomach, or that of a dog, only that the inner folds or plicæ are longer and looser; and it may also be observed, that in all animals there is one digestive stomach, and that has the same coagulating power in the foetus, as the fourth stomach in this animal, whence this might not improperly be called the only true stomach: it is this fourth stomach, with the milk curdled

* Caillé is a French word, signifying curdled.
in it, that is commonly taken for making run-
net; but after the bile and pancreatic juice
enter, this coagulation is not to be found,
which shews the use of these liquors. There
are other creatures which use the same food,
that have not such a mechanism in their diges-
tive organs. Horses, asses, &c. have but one
stomach, where grass and other food is mace-
rated and a liquor for their nourishment ex-
tracted, and the remainder sent out by the
anus, very little altered. From this different
structure of the stomach, ruminating animals
will be served with one-third less food than an-
other of equal bulk. Graziers are sufficiently
acquainted with this circumstance. The reason
is, that ruminating animals have many and
strong digestive organs; all their food is fully
prepared, and almost wholly converted into
chyle: but a horse's stomach is not adapted
for this, so that he requires a much greater
quantity of food to extract the same nourish-
ment.

The intestines of oxen, &c. are of a con-
siderable length, in proportion to the bulk of
the body.

The duodenum is formed here much the
same way as in a dog, and the general intention
kept in view, with regard to the mixture of the
bile and pancreatic juice.
The great guts here hardly deserve that name, their diameter differing very little from that of the small ones; but they are convoluted as the small guts are. The cæcum is very large and long, though the digestion of cows, &c. is accompanied with rumination; yet it is observed, that calves never ruminate so long as they are fed upon milk only; but the action takes place as soon as they begin to eat solid food. The reason of this is, that as long as calves feed only upon milk, the food descends immediately into the fourth stomach, which, as already observed, seems only capable of performing the operation of digestion without stopping in any of the first three. The oesophagus of all ruminating animals is extremely well and wisely constructed for this operation; having two sets of fibres, one set calculated for bringing up the food, and the other for taking it down.

The spleen differs not much either in figure or situation from that of carnivorous animals; but it appears a little more firmly fixed to the diaphragm, there not being here so much danger of this viscus being hurt in the flexions of the spine.

The liver is not split into so many lobes in cows, as it is either in man or dog; which I believe depends on the small motion this ani-
mal enjoys in its spine, which made such division needless. A horse has the liver divided into seven lobes.

The vesica, or urinaria, or bladder, is of a pyramidal shape. It is very large, and more or less membranaceous in different animals; for the urine of grannivorous not being so acrid as that of carnivorous animals, there is not so much occasion for expelling it so soon in one as in the other.

The situation of the heart is pretty much the same with that of other quadrupeds. In man, the heart bearing continually against the ribs, and both ventricles going equally far down to the constitution of the apex, it is very obtuse: but in cows the apex is made up only of the left ventricle, so it is more acute.

The æorta in this creature divides into two, the anterior and posterior.

The bull is provided with a loose pendulous scrotum and consequently with vesiculæ seminales.

The female organs differ from those of a bitch, mostly as to the form of the cornua uteri, which is here contorted in form of a snail: in cows and all uniparous animals, only part of the secundines is contained; but in bitches and other multiparous animals, they run straight up in the abdomen, and contain the foetus itself.
ANGLE-BERRIES.

Angle-berrYEs are excrescences or lumps that take their origin from a rupture of some cutaneous vessels, which give vent to matter or rather a fluid capable of forming those tumors, or wens, improperly called Angle-Berries.

The causes and treatment of these excrescences are fully described in the article Wens.

BOVINE AFFECTION.

Some ancient writers say that this disorder is caused by a worm lodged between the skin and the flesh, which perforates both, and that if it is not soon killed the consequences may be very injurious; others* say that it is produced by a fly, which lights on the backs of black cattle, and with a kind of sting growing to its hinder part, perforates the skin, and into each perforation introduces an egg, which first makes its appearance as a worm, and becomes a fly in due season like its parent; and that when this fly pierces the skin it causes severe pain in oxen: the worm however, which is deposited, say they, grows without any great injury to the health of the animal; and never moves.

* See a dissertation, De Boùm ÆStro, by Wallsinerius.
from its place, but that in the following spring it occasions a tumor, out of which it issues when summer approaches, in the shape of a fly.

I feel myself under the necessity of contradicting the above tale, probable, as it may appear in the opinion of some, because anatomical experience has proved that the disease now under consideration, proceeds from an obstruction of the perspirable matter, which concretes in the pores of the skin, and forms a sebaceous substance resembling a worm, with a black head, which may be squeezed out, and causes a small suppuration, and discharges itself with the matter. Whatever the cause of this disease may be, the cure is extremely simple and easy: it consists in applying a hot iron on every part where any of those worms are perceived, sufficiently deep to penetrate the skin, or deeper if the part will admit; this done, we must wait with patience until the scar sloughs off, and then dress the sore with spirits of turpentine and digestive ointment. Those that have an objection to the actual cautery, may apply a strong blister on every part where the worm is suspected, or perhaps spirits of turpentine alone might be found sufficient to kill this pretended worm.
CATARRH.

Catarrh, or cold, is a disease in which the head and wind-pipe are first affected: but in the progress of the disorder, if it is of an epidemic sort, as it sometimes happens, then the contagious matter received by respiration communicates its effects to the lungs, and if the vapours so received are not instantly fatal, they produce a fever; in the beginning of which strong symptoms of inflammation are evident, and which if not immediately removed by proper treatment, very soon change into extreme arterial debility. A cold, or catarrh is a very rare disease in horned cattle; they are most troubled with it after calving in the winter season; by a neglect at which periods I have seen cows taken with a lock-jaw, and other inflammatory and spasmodic complaints.

The Cure must be attempted first by bleeding pretty largely, which may be repeated if found necessary. Should any tumours take place on the surface of the body they must be blistered. The animal must have plenty of oats or barley water, made warm, to drink, with an ounce of nitre every twenty-four hours; taking care to keep the cow in a warm stable, if the
CHAFING.

weather be cold, and at the same time allowing a free circulation of air. If any further information is required, the reader will refer to the article Fever after Calving and Contagious Catarrh.

CHAFING.

Cows which are cat-hammed, that is, turn the toes of their hind feet outwards, are apt to chafe the udder and thighs, so as to become raw and even ulcerated in those parts, and emitting a very disagreeable stench. The cure of this is entirely local, and requires no internal remedy; therefore washing the part well with soap and water, and afterwards dress it with tincture of myrrh, and water, an equal quantity of each. In a few days may be added about a table spoonfull of extract of lead, or a little alum, in half a pint of the above mixture.

This chafing of the udder in cows is frequently owing to the bad practice of not milking the animal in time; which inhuman custom is resorted to when the people have in view the sale of the cow: for that purpose she is left several days unmilked, which neglect occasions a considerable swelling and inflammation of the udder and teats. This painful swelling and inflammation will be relieved by milking three
times a day, and bathing the parts thoroughly with a strong decoction of parsley or sage, thyme, and rosemary, with two or three ounces of camphorated spirits: or a decoction of camomile flowers, with camphorated spirits of wine; or camphor dissolved in sweet, or olive oil, and brandy, in the proportion of two or three ounces of the oil to half a pint of brandy.

CONTAGION,
OR FESTILENTIAL DISORDER OF COWS AND OXEN.

This dreadful distemper announces itself by considerable general inflammation, which is carried to such an excess, that on the first day of the attack, cows give nothing but a watery liquid instead of milk; and about the second and third day of the disorder, this watery liquid becomes completely bloody. This change in the lactiferous vessels shows the influence of the contagion in the system, and from this it would appear that the alimentary canal is affected; the eyes and tongue become considerably inflamed and swelled, attended with a bleeding at the nose, which continues until a mortification of the viscera of the chest and abdomen takes place, after which death soon ensues.
The fatal nature of this pestilential disorder amongst oxen and cows, is such that I have seen farmers lose forty-six out of fifty animals taken with the infection; and in some instances the whole herd have died in the course of a few days. I have witnessed this dreadful calamity three times in the course of fifteen years. It first began in French Flanders, soon after spreading its ravages along the coast of Holland and France, from Dunkirk, Berg, St. Omer, Gravelines, and all that vast country about Calais: and the death of the animals was so sudden as to allow no time for the administration of medicines: in short, it was so terrible a visitation, as to be accounted nothing less than a heavy judgment from Heaven, as it was followed by almost a famine in those countries. Neither meat nor milk could be got for money; and a cow worth ten pounds was sold for seventy or eighty sterling guineas, after the recovery of the infection, as it was observed that the disorder never attacked the same animal twice, but was perfectly free from any relapse.

From the fatality of this pestilential disorder it is necessary to observe that the person entrusted to superintend the animals, should not only be accurately nice in the discrimination of the contagion, but he must attend minutely to
circumstances, and endeavour to develop the mysterious indications of nature. To become the more adequate to this task, he should be anxiously careful to improve his judgment, and adapt the known qualities of medicines to the expectation of their effects. It will therefore prove highly necessary to attend particularly to the symptoms here described, and proceed accordingly. As soon as the first attack is perceived, proper methods should be instantly taken to relieve nature from the threatened oppression, by such evacuations as the predominate symptoms direct; such as bleeding very largely upon the first appearance of the disease, and this in a large quantity, repeated within the first twenty-four hours, if the urgency of the symptoms requires it. Rowels under the chest, and seton near the top of the head must be introduced; these local insertions will contribute to unload the neighbouring vessels from the morbid matter they contain; and should any swelling appear on any part of the body, they should be fixed there, and brought to suppuration as speedily as possible, by the application of mild and frequent blisters.

In the very beginning of the disorder, I have given, with appearance of success, Peruvian bark, or even oak bark, half an ounce; cam-
Cow-pox.

Phosphorus, two drachms; nitre, an ounce, opium, half a drachm, mixed carefully in a quart of gruel and a pint of Port wine, or in a strong decoction of rosemary, worm-wood, or in some other of the antiseptic plants; ale will answer equally as well; the same dose must be repeated every six or eight hours. The drink must be made warm and white with oatmeal or such like; if costiveness takes place we must inject clisters.

But as the fleam is the anchor of hope in every inflammatory disease, I recommend the greatest attention to be paid to this important remedy, particularly where there is difficulty of breathing. Warm clothing, if the weather be cold, with plenty of a diluent and nutritive diet, with the administration of the most powerful antiseptic medicines will be extremely beneficial to conquer one of the most alarming disorders incident to horned-cattle.

Cow-Pox

Is a disease affecting the teats of the cow, and contagious, as it is often propagated to other cows by the hands of the milkers. This disease, it is said, appears in the form of blue vesicles surrounded with inflammation. The animal is indisposed and the secretion of milk lessened, vesicles similar to those on the nip-
ples of the cow, but less blue, appear on the hands of the milkers, attended with febrile symptoms, and frequently with tumours of the axillæ. Vesication of the same kind may also take place in any other part in consequence of inoculation by the fingers of the patient impregnated with virus. These vesicles produced by the casual infection, whether in the human subject or the brute, often degenerate into troublesome ulcerations, unless proper applications be employed.

Morbid virus of various kinds is capable of exciting a disease, bearing a resemblance to that already described: but the diagnostics laid down by Dr. Jenner, are sufficiently clear to enable us to distinguish the maladies from each other. The genuine cow-pox consists of vesicles; the spurious, or postules, have neither the blueness nor the central depression which characterize the former, nor are they so infectious, nor so likely to be followed by obstinate ulcers, as the genuine kind. The spurious cow-pox originates from inflammation, whether it be occasioned by neglect of milking, luxuriant food, the sting of an insect, or any other cause. This affection is but rarely communicated to the hands of the milkers, and only deserves to be mentioned on account of the possibility of its being mistaken for the ge-
nuine species of the cow-pox. It is, indeed, so benign, that in many places where it is well known, no idea is entertained of its being contagious; and it may reasonably be doubted whether it really be so, till the matter which the pustules contain has undergone a decomposition.

It is represented by Dr. Sacco as consisting of little tumours, depressed in their centres, of a shining appearance and reddish brown colour, containing a thin inodorous fluid, which thickens and forms an incrustation. These incrustations become of a deep red, and the cow suffers great pain at the time of milking. This distemper, which is not commonly observed, is attended with diminution of appetite, a continual rumination without any material in the mouth, and a motion of the lips: the milk is lessened, the eyes downcast: there is a slight symptomatic fever: the pustules are seated on the nipples, and the lower part of the udder; sometimes, but very rarely, a few appear on the eye-lids and nostrils. This species of distemper, Dr. Sacco observes, is contagious to such a degree, that if one cow contracts it, in the course of a few days the whole herd will be infected. These are the accounts and opinions related by several writers concerning the origin of that wonderful discovery, the cow-pox.
I must now beg leave to make a few remarks on this important subject; as being a disease belonging to the veterinary department, I conceive myself entitled to venture an opinion, which I trust will not be misunderstood. I do not mean to say that there is no such disorder existing as the cow-pox, but only to communicate as briefly as possible what I have been able to discover on this subject, during the course of my life, and the many years I have practiced the veterinary art in the different parts of the world: and I must say, that although I have exercised my profession in so many different countries abroad, as well as at home, for upwards of thirty-six years, yet in vain have I laboured to find out the disorder, accompanied with such symptoms as represented by some writers on the subject, and at the same time, that is capable of affording a permanent security against the small pox in the human subject*, except they allude to that cutaneous eruption represented by Dr. Sacco, which sheep are also subject to, as well as cows;

* I sincerely confess, and uniformly observe, that the cow-pox, such as it is generally taken, affords very little hopes in preventing children from taking the small-pox a second time, until it has been introduced once or twice into human blood; after which the matter taken from such a source, will undoubtedly prevent catching the infection, and therefore render the cure perfectly safe and permanent.
COW-POX.

in the former, the disease goes under the name of scab, and forms a genus of disorder which seems to be of the same nature as the strangles in horses; I know also that the udder and teats of cows, particularly young ones, will crack in the winter season, and will produce sores very painful to the animal when milking, being attended with vesications on the udder and teats. These sores being produced simply by the rigidity of the atmosphere, and being only local, can never be of any security for inoculation against the small-pox; since it is allowed the animal must be attacked with a symptomatic fever, and the quantity of milk lessened to constitute the real disorder now under consideration.

Cows are subject to various sorts of scabby distempers on the udder and teats, capable of producing all the symptoms of the small-pox, when introduced into the human blood; and indeed I am rather inclined to think it has all the appearances these different diseases present to those authors that are not thoroughly acquainted with comparative anatomy and the physiology of neat cattle, who have led so many errors, by introducing a wrong sort of matter in the human blood by inoculation; and what is still worse, they have caused many children to take some other complaints to which cows are subject, in consequence of many practitioners not
being able to distinguish the one from the other; by which ignorance some other local distempers have been introduced into the system, instead of the real cow-pox; of this truth many persons are sensible; and therefore leaving the subject for other impartial men to investigate, I shall content myself by saying, that inoculation made with matter taken at random, as is too often the case, may communicate a similar complaint to the genuine cow-pox, but it never can afford any security against the small-pox in the human race.

We have said before that cows, oxen, sheep, and even dogs were subject to a kind of disorder which has a great deal of affinity to the strangles in horses; indeed the only difference in it is, that the disorder shows itself differently in different species of animals; that is to say, the swelling under the jaw, and the discharge which takes place at the nose in horses, also take place in horn-cattle, sheep, &c. but affect other parts of their body. In cows and sheep it appears in the form of inflamed pustules on the teats, udder, eye-lids, and nostrils*, containing at first a thin inodorous fluid, which thickens as they advance to maturity, or rather with the same progress,

* This is the species of disorder justly observed by Dr. Sacco.
and in the same manner as the pustules of the small-pox in the human subject.

In this kind of disorder, if the milker has any scratches about his hands, as many have, particularly in the winter season, he certainly will catch an increase of inflammation in his hands; and it is, I believe, this circumstance that has induced medical men to conjecture that matter of such a mild disorder introduced into the human blood, would probably be a preventive or an antidote against the small-pox in the human race. And this I believe is the only disease in cows capable of affording a permanent security against the small-pox. This opinion will appear still more probable by reflecting a little upon the following remark, which is, that if the matter of the strangles gets into the blood of a person that has never had the small-pox, it will produce a disease similar to that produced by the cow-pox, provided it has been taken from a sound and healthy colt, free from any hereditary, or other disorder; a circumstance which cannot be too much attended to, in case of inoculation, since it is proved by experience, that farcy, the glanders, and even the matter of any other acrid and virulent ulcers may be easily mistaken for the real strangles, and will evidently produce more or
less bad consequences when applied to the human frame.

An effect, which I have many times experienced upon myself, in opening or dressing horses affected with the above complaints. And indeed I recollect two cases of ignorant country farriers, one of whom was obliged to suffer the amputation of one of his fingers, and the other of one of his hands, in consequence of the introduction of a morbidic matter into the blood.

We shall now come to make a few remarks on those writers that have imagined the cow-pox to originate from the grease in horse's heels, and have called it the genuine; but all other pustules affecting the cow, whether arising from an over distension of the udder in consequence of a neglect of milking, or from the sting of an insect, or other cause, are termed spurious cow-pox; and it is farther advanced by those writers, that farriers and others who receive the infection from the heel of the horse, were partly or totally deprived of the susceptibility of the small-pox; and if they had that distemper it was in a milder manner than other people*; which they-

* This idea is literally false and appears too ridiculous to an experienced veterinary surgeon, to deserve any credit; therefore this me-
imagine to be owing to the different state the virus possesses when communicated to the farriers; and this variation in the effect produced by the virus of the grease of the horse has inclined some writers to believe that it was modified, and underwent some peculiar alteration in the teats of the cow; and, in short, they assert that a considerable advantage was derived by transferring the grease from the horse's heels to the udders of cows, whose teats furnish a more obvious and more abundant source of this inestimable fluid than would be had from the heels of the horse.

This theory has certainly a very plausible appearance upon paper, to those that are totally ignorant of the nature of the grease and cow-pox. But practice will soon defeat all those imaginary conjectures, and show that the cow-

chanical mode of introducing the cow-pox in human blood, ought to be totally disregarded, being incompatible with our present knowledge of philosophy. But the idea of introducing the matter taken from human small-pox in the udder of a cow would be infinitely preferable than the grease taken from the horse's heels, as the one would receive as much alteration and modification as the other; by which practice the same effect could be obtained, without the fear or danger of introducing a matter which would not prevent the small-pox taking place a second time. And at the same time it would be a perfect security against the danger of introducing some other virulent or infectious disorder in human blood, without affording any security against the small-pox.
pox and the grease have no resemblance with each other; the first being of an inflammatory kind, and the last entirely local. The real cow-pox never affects the animal more than once, but the grease will return frequently; indeed some horses are never without it; so that it becomes habitual, and the cure would be worse than the disease; yet they never get the strangles but once in their lives, which happens uniformly from the age of two to five or six. Young horses are never troubled with the grease until they become domesticated, and are exposed to sudden transitions from cold to heat, or too sudden a change of diet, or perhaps it may arise from a constitutional debility. The grease in horses consists of an oily matter that has a peculiar smell, owing to the secretion of the heels, being of a nature peculiar to them, and differing greatly from the pus of any other sores: this secretion is very mild in a state of health, but soon becomes corrupted in case of inflammation; from whence it follows that the matter of the grease, taken in its mild state, cannot be of any security against the small-pox; and the danger of introducing it into the human blood in its state of inflammation, renders the operation very hazardous and even dangerous, when performed by those practitioners who are not
thoroughly acquainted with the diseases of the brute creation. The objection may be the same in respect to the matter taken from the cow: but if trials or experiments were made to prevent or extirpate the small-pox in the human subject, my opinion is, that that matter ought to be chosen for inoculation which has more affinity with the small-pox than the grease, and which proceeds from those diseases which never affect the constitution but once during life; not trusting to those simple cracks, produced by neglect of milking, or by the sting of insects, or frivolous cases of the kind; as matter taken from such a source is quite inadequate to prevent or afford any security against the small-pox in the human subject: on the other hand, the danger of introducing some morbid or virulent matter into the human blood, ought to render the operator extremely circumspect in the choice of matter proper for inoculation.

I shall therefore strenuously recommend all possible care and attention to be paid to the species of disorder, and to the age and healthy appearance of the animal, before any attempt should be made to introduce matter from cows, or other animals into the human blood; and indeed the discrimination requisite in such
cases, can only be expected from a good veterinary surgeon, who has made a long and constant study of the different diseases incident to horn-cattle, as well as those that belong to horses and other animals. Such a man is the most likely person capable of appreciating and pronouncing with judgment on the healthy state of the animal, previous to any matter being introduced into the human race. But I am very sorry to observe that this essential point has to this day remained enveloped in obscurity and conjecture, and the want of knowledge of the physiology and pathology, or diseases of the brute creation, have been the cause of many mistakes and errors committed in the choice of matter fit for inoculation by medical men; by which means many other local distempers have followed, with other disorders troublesome to cure; in all which cases the operator wrongfully lays the fault on the constitution of his patient; while had he had skill to make a proper choice of matter, instead of the spurious cow-pox, such cases would not have occurred.

Treatment of the cow-pox.---After what we have said, we are not to consider the case as local, but constitutional; therefore, if the fever be great, and the quantity of milk much lessened, it will be necessary to take away a little
blood, according to the state of the disease; the animal also must be kept upon an emollient and cooling diet, composed and mixed with bran and water, with a little of boiled barley or oats, which must be given three times a day, with plenty of water made white with ground barley, or oats, &c, in which six drachms of nitre has been dissolved; if she refuses to take it, it must be given with the horn. The local treatment consists in bathing the parts with a strong decoction of Peruvian, or oak bark, two quarts; allum, an ounce; white vitriol, two drachms; tincture of myrrh, four ounces; this make an admirable application for the ulcerations, generally called the spurious, or bastard cow-pox, and many other distempers, whether local or constitutional.

DROPPING,
OR FEVER AFTER CALVING.

This is a name given by common farriers, in order to denominate that disorder which is analogous to the puerperal fever, which sometimes attacks women after lying-in. This fever in its simple state must be considered as a disease, originally of an inflammatory kind,
affecting one or more of the parts contained in the abdomen, extending its influence over the whole constitution, and speedily assuming a putrid form, with more or less virulence, according to its degree and treatment during its inflammatory state.

Therefore in this complaint the first care should be to keep the animal well clothed, and in a warm stable, on a large litter of fresh straw, and to give her the following drench, viz.

Take a strong infusion of camomile flour or mint, one gallon; cinnamon, two ounces; and one nutmeg, powdered; boil the whole together during two or three minutes, then let it stand for about twenty minutes, and strain it out; to this add a pint of wine, and two drachms of vitriolic ether: keep the whole well corked in bottles, as a valuable remedy in this case. But it will be necessary to add the other the last of all, to prevent its evaporating. If the strength of the patient should sink, give a quart of that drench every hour. If the animal becomes costive, or is already so, give her a clyster composed of a decoction of linseeds, or marsh-mallows, every six or eight hours.
FOUL IN THE FOOT,
OR FOOT-ROT OF COWS, OXEN, AND SHEEP.

This disease in cows, oxen, and sheep, &c. is exactly the same as running thrushes and canker in horses, and it is produced in both from the same cause, that is to say, by letting the hoofs grow too long.

In horn cattle, the hoof should be cut or rasped every five or six weeks, particularly those that are exposed to constant moisture in the fields, which makes their hoofs grow and increase in bulk and length very quickly, and gives the foot a shape that deprives the horny soles of sufficient pressure; by which neglect they become more or less inflamed, and rotten, and suppuration ensues, and in the further progress of the disease, a canker in the foot takes place, vulgarly called foot-rot. But in order to render this principle clear, that the sole of the foot of every animal cannot be kept in health unless it receives a constant pressure, I shall make the following remark, viz. Do we not see that the skin of the human feet and hands always grows in proportion to the quantity of pressure? Do we not see that the hands of labouring people are callous and insensitive to any hard substances? These parts
grow from within outward, and the blood vessels will be stimulated to secrete more or less horn, or more or less skin, as they receive pressure. The vessels of the skin of the hand, or of the sensible sole of oxen, sheep, &c. that have no pressure, will grow thin and diseased. The same is observed in the sole of the human foot, which is equally void of feeling with those persons who are accustomed to walk without shoes. These circumstances, which most men know to be true, will induce farmers and graziers, I hope, to take better care of the feet of horned cattle, to cut in time their frequently too long protracted growth of hoof, in order to let the sole, or bottom part of their feet, press to the ground, equally with the other parts of the foot: then if there be any disease, such as suppuration, or perhaps a canker, let it be dressed with tar and vitriolic acid, to the proportion of two ounces of the oil of vitriol to a pint of tar; the strength of this medicine may be increased by degrees, until it can be made half and half of each. If the bone of the foot is found carious, it will be necessary to apply the actual cauterity; then dress with the above dressing, with an addition of vinegar and honey, equal quantities of each, well boiled together, then mix with the same quantity of Venice turpentine; this well mixed with the tar and oil of vitriol, makes
an admirable application for the foot-rot in oxen, cows, sheep, and the canker in horses.

Garget.

GARGET,
OR CONTAGIOUS CATARRH.

This is a disorder in horned cattle that may be considered epidemic, as it affects almost every animal exposed to its contact, and the progress, malignity, and fatal termination of this distemper is so rapid, that four out of eight will generally die with it in three or four days, if proper means are not quickly employed in its first attack.

When an ox or a cow is first affected with it, a swelling and inflammation of the head takes place, causing the eyes and lips to swell, sometimes very considerably, and as it advances, the inflammation extends to the gums and tongue, and organs of deglutition. This is not a common disorder, but when it does take place it is generally a dreadful calamity. I have witnessed and experienced its ravages several times in Holland and Flanders, in which countries horned cattle are more subject to contagious disorders than any other; I have known its effects often so furious as to be considered by all the inhabitants of the
country where it happened, as a punishment from heaven.

For the treatment of this inflammatory disorder we must begin by bleeding very largely, and that at the first appearance of the disease, and the operation must be repeated, if found necessary, until the inflammation shows some disposition to subside.

Our next attention, after the first bleeding, must be directed to the administration of internal medicines, which must be given according to the state of the animal, observing attentively if the secretion of dung, urine, &c. is regular, and how the distemper has already acted on the system or constitution of the ox or cow. If the case be taken in its recent state, and the strength not much diminished, we may give with success the following medicines, viz. calomel, one drachm, mixed in a quart of boiled gruel; give it with the horn, and twenty-four hours after work it off with two ounces of Epsom salts, dissolved in a decoction of peppermint. After which we must give, nitre dissolved in boiled gruel as above, then add camphorated spirits of wine or brandy, an ounce; and sweet spirits of nitre, half an ounce: give the half of this in the morning, and the remainder at night: the same drench may be repeated every other day if required: it will act
as a very good antiseptic remedy, and therefore greatly retard and prevent mortification, an object of the first importance during the treatment of this distemper; as death, if this is not prevented, generally ensues in three or four days, in consequence of the rapid progress of inflammation into mortification. If there should be any blisters or small ulcerations in the mouth and under the tongue, break them, and rub the tongue with a handful of common salt three or four times a day; or if you do not find the expense too great, take a strong decoction of Peruvian bark, or even oak bark will make a good substitute, and honey, and acidulate it with a little oil of vitriol, or vinegar. But we must hold in remembrance, that bleeding plentifully at the first appearance of the disease, is the only remedy to depend upon.

GARGLE.

This is a disease described by cow doctors as an external hard swelling in the dew-lap, which spreads afterwards to the breast and throat; but their ideas on the causes and remedies prescribed for this hard swelling, are too ridiculous to be noticed; therefore we shall content ourselves by saying, that the cause of gargoyle in horned cattle, as it is vulgarly
called, proceeds generally from bruises or contusions, which produce an enlargement, in consequence of the extravasated fluids being confined by the external integuments, or skin, which is extraordinarily thick in that place, and thereby prevents the confined fluid from escaping through the skin, as it would do in some other places of the body.

The Cure, is to be attempted by passing two seatons one on each side of the tumours, or two rowels, but seatons are preferable. A strong blister or two, will, in many instances, perform a radical cure without any further trouble; if the tumour come to suppuration, it must be lanced and a discharge be encouraged with a common digestive ointment.

GORGED, OR HOVEN,
OR, SWELLED WITH OVER-FEEDING.

In the article, loss of the cud, we shall give the anatomical structure of the organs of deglutition; by which it will be perceived that the first and second stomachs contain food roughly macerated only. In these two cavities a fermentation soon commences, which makes the grass and other food swell; so that if the animals fill themselves too full of grass, wet clover, or any other young vegetables, which are liable
to run into too great a state of fermentation, the stomachs become distended with air, and death frequently ensues, in consequence of the communication between the second and third stomach being extremely small, and fit for the passage of food in a natural state only, and not in a state of rarefaction.

The Cure.—If the animal seems greatly swelled, and in pain, with difficulty of breathing, we must take away five or six pints of blood, then give one of the following drenches as soon as possible, viz. take Epsom salts, two ounces, dissolved in half a pint of peppermint water; ginger, finely powdered, a drachm; brandy, or gin, two ounces, give the whole in a quart of water gruel: or, take a decoction of peppermint, a quart; and a quarter of a pint of sweet spirit of nitre, mix it well with a pint of water gruel, and give it with the horn; the same dose may be repeated an hour or two after if it is found necessary, but should the belly swell to such an excess as to endanger the animal's life, in such a case the air must be evacuated immediately, by making an incision with a sharp pointed knife, on the near side, through the flank, deep enough to enter the stomachs, which lies immediately under it; or it may be done between the ribs and the hip-bone, three inches below the bone of the loin.
In case of pregnancy, however, great care must be taken, and other means used. The wound, in case of paunching, may afterwards be healed with a common ointment. A lead tube made in the shape of a pipe, used for injecting wax, in making anatomical preparations, would be extremely useful, as it might be allowed to remain in the cut made by the knife, as long as it is necessary, without any inconvenience to the animal; such a machine would be extremely convenient to let out the imprisoned air. Dr. Munro, of Edinburgh, invented a flexible one, to be passed through the mouth into the stomach of either an ox, or sheep: This tube may be left in the stomach any length of time, being no hindrance to breathing, or any medicine may be injected through it. It is held to be a safer method than incision by Dr. Munro, and probably is less painful to the animal.

LOSS OF THE CUD.

Before we proceed to explain the cause of this defect, it will be necessary to give a description of the organs of deglutition of

* These used to be made by Macdougale, No. 15, Great Windmill Street, London.
ruminating animals; in the first place, we must observe that their first and second stomachs are a continuation of the same bag, and very large. After the grass has been chewed over again, it is reduced to a kind of mash, and under this form it is sent down to the third stomach, where it remains and digests for some time; but the digestion is not fully completed till it comes to the fourth stomach, from which it is thrown down to the guts. The contents of the first and second stomachs, are a collection of grass and other food roughly macerated; a fermentation however soon commences, which makes the grass swell. The communication between the second and third stomach is by an opening much smaller than the gullet, and sufficient for the passage of the food in this state. Whenever, then, the two first stomachs are distended with food, they begin to contract, or rather perform a kind of re-action: this re-action compresses the food, and makes it endeavour to get out; now the gullet being larger than the passage between the second and third stomachs, the pressure of the stomach necessarily forces it up the gullet. The action of ruminating, however, appears to be in a great measure voluntary; as animals of this kind have a power of increasing the re-action of their stomachs. After the food undergoes a second mastication, it is then re-
duced to a thin pulp, which easily passes from the second to the third stomach, where it is further macerated: from thence it passes to the fourth, where it is reduced to a perfect macilage, every way prepared for being taken up by the lacteals, and converted into nourishment.

By this anatomical description, we shall be able to account for the pretended disease, called by some cow-leach, and others loss of the cud.

This defect exists in the laxity and weakness of the contracting muscles, and their consequent inability to expel the food for the purpose of rumination: this weakness may arise from various causes; as, from offending substances or food taken into the stomach, or more frequently from inflammation, cold, or catarrh, &c.

The Cure of this disease must begin with warm mashes of bran and ground oats or barley, and sweet hay; then apply a strong blister under the jaw, just under the pharinx and a part of the oesophagus, and let this treatment be followed by a constitutional one; accordingly, give three drachms of aloes, with a drachm of calomel, and a tea-spoonful of oil of aniseeds, mixed up into a ball with a little treacle. If this dose is found too weak, it may be rendered more active, by adding a drachm or two of aloes, according to the size and strength of the animal.
RED WATER,
OR BLOODY URINE.

Cows are extremely subject to bloody urine, or foul water, as it is called. This disease
proceeds from an increased action, or a rupture
of some small arteries of the kidneys, intended
for the secretion of urine, which sends forth a
bloody discharge; or perhaps in consequence
of a general inflammation, which has previously
existed*, or from a violent blow or bruise on
the back, just opposite the region of the kid-
neys and bladder. This disease is never, or
very seldom, attended with bad consequences,
and is very easily alleviated by taking about four
or five pints of blood, keeping the cow in a
warm stable, upon a good and nutritive diet of
bran and ground oats, dissolved in as much
water as the animal can drink, two or three
times a day. This little attention is generally
found sufficient to remove the complaint: if
not, we may give the following, viz. opium.

* Besides bloody urine, cows, sheep, and horses are sometimes
affected with a disease called foul water, on account of its being
turbid, and having a fetid odour. This arises from an imperfect
action of the digestive organs, in consequence of which unassimila-
ted matter is taken up by the lacteals, and afterwards separated
from the blood, so as to impart these qualities to the urine.
a drachm; vitriolated iron, half a drachm; with or without, as the urgency of the disease may require, a drachm of bole armoniac and allum, make the whole into a small ball; or perhaps dissolved in warm ale may be preferable.

SCOURING

Is a very common disorder in oxen and cows; indeed it is almost natural to these kind of animals to void their dung in a liquid state, particularly at grass, or when they are fed with green forage, or in marshy pastures. But I have seen it continue so long, for want of due attention, that it has been attended with a general debility that has terminated in death. This obstinate purging may proceed from various causes, to wit, a change of green food, a solution of a cold, particularly after calving, a suppression of perspirable matter, or perhaps the symptoms of a diseased liver, threatening that formidable disorder the rot, either from bad keep, or from a morbid constitution.

The Cure.—If the diarrhæa proceed from bad keep, and be taken in time, it may be cured by a more generous diet of sweet hay and good oats or barley, and comfortable mashes made with the same, mixed in a large quantity of
water, so as to be of a soft consistency. But if
the scouring proceed from offending matter
lodged in the intestines, besides the nutritive
diet recommended above, it will be necessary
to give two ounces of Epsom salts in a pint of
warm porter or ale, to be repeated as often, or
as long, as necessity requires, keeping the ani-
mal warm and dry.

When this disease proceeds from calving in
cold or wet weather, lying out, attended with a
chronic cough, I particularly recommend an
early attention to the symptoms, as the success
of the cure depends entirely upon a timely ad-
ministration of proper medicines;--

Such as a strong decoction of Peruvian bark,
a pint; powdered ginger, two drachms; anni-
seeds and coriander seeds, two drachms; opium,
a drachm; mix it and give it warm, once or
twice a day, according to the urgency of the
symptoms.

Balls are given to horned cattle with the same
facility as to horses. So the above may be
made into a ball, with a little treacle or honey,
giving the bark in substance, to the dose of half
an ounce or more in each ball. Should any
astringent be required, the reader will refer to
the article flux, described in the diseases of
sheep.

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443
DISEASES OF CALVES.

Both calves and colts are very apt to refuse the teats, or any other nourishment after calving. I have known instances of these young animals dying, owing to this obstinate refusal, notwithstanding every endeavour had been made for several days. This aversion proceeds from a glutinous mucus, similar to the meconium, which gluten covers the tongue and prevents the natural sensation of taste. The remedy for this is to scrape the tongue with a blunt knife, and rub it well with a small handful of salt once or twice; after which the young animal will be found to suck with a very voracious appetite, or take any other food.

A second disease to which these young animals are extremely subject, is a disease of the intestines, produced by the meconium, which often remains in their bowels after the birth, and produces griping pains, convulsions, and sometimes death.

This may be removed by giving an ounce of cream of tartar, with a drachm or two
of rhubarb, mixed, and given in half a pint, or a pint, of the decoction of peppermint: or take magnesia, an ounce; rhubarb, two drachms; mix and give in the same way: these may be given occasionally one after another, so as to cause evacuation, and clear the intestines from the offending matter, which produces the disorder.

But we must observe that no medicine should be given, unless the diarrhoea be too violent, or continue too long, because a laxative state of the body in these young animals is very often extremely useful to them, as it clears the intestines from that which produced the disorder.

Clysters are sometimes the only remedies that can be applied with propriety in dysentery, and therefore we may give the following once or twice a day: take mutton suet boiled in a quart of milk, and an ounce of starch boiled in half a pint of water, then mix the whole together, with two drachms of laudanum; this clyster will be found very efficacious, as it will render the bowels insensible to the action of those acrid particles that corrode them while the starch is bland and nutritive.

If the diarrhoea be too violent and continue too long, the following drench may be given with the greatest advantage; viz. take Peruvian bark, half an ounce; bole armoniac, or dragon's
blood, two drachms; opium, half a drachm; cinnamon, two drachms, boiled in a pint of water, mix the whole with four ounces of Port wine. Let the same dose be repeated three times every twenty-four hours.

When a looseness has continued long, there will probably be a continual and ineffectual inclination to dung, which is properly called a tenesmus.

In a tenesmus the pain is limited to the rectum, or parts connected with it, and the evacuation is little else than mucus tinged with blood, if the disease has been a dysentery. This frequently happens towards the end of some inveterate looseness, and is caused by the acrid humour adhering to the coats of the rectum, and stimulating the sphincter of it to those very uneasy, troublesome, and vain motions.

The following medicine may be given with the horn as a drench, viz. take a strong solution of gum arabic, half a pint; isinglass, four or six drachms, dissolved in a pint of hot barley water; castor oil, an ounce or two, according to the size and strength of the young animal: mix for one dose, which may be repeated occasionally.

A tenesmus is sometimes attended with a prolapse of the anus, the rectum falling down so low as to require external assistance to re-
place it. When this is the case, if it be not soon reduced, the gut will inflame and speedily turn to mortification, if exposed to the air. It is subject also to relapse after reduction, when the animal strains, and it is difficult to keep up in case of diarrhoea; if the intestine be swelled, foment it with an ounce of bark infused in wine and water, half a pint of each; then let it be reduced with the fingers oiled for that purpose; and apply a compress to the part, dipped in a decoction of bark and a little allum, with a proper bandage. If the tenesmus remain obstinate, a proper truss may be contrived to prevent its falling down again.

The other disorder of the bowels in calves, is, costiveness; if this disease appear to be obstinate, and have any influence on the constitution of the animal, as it happens sometimes when the bile is defective, or any obstructions in the secretions takes place, or in the biliary passage, in this case, which is the only one to be noticed in respect to calves or colts, we may give the following medicines with the greatest success, viz. take calomel, half a drachm or more, mix it up with a little flour, and a sufficient quantity of honey to make a small pill, to be given in a horn full of milk, and twelve hours after work it off with two ounces of Epsom or
Glaubert's salts, dissolved in a pint of water gruel.

Should the costiveness be attended with any swelling, which often renders the animal more or less lame, let the tumour or enlargement be blistered, and well fomented the day after.

Vertigo is a rare disease in calves, and is what is called the gid in sheep. The diagnostic signs of the disorder are a wildness of the eyes, and a strong pulse according to the degree of obstructions, or inflammation of the dura, and pia mater,

In this disease it will be necessary to take away a little blood from the vein of the neck, then blister the top of the head, and give calomel as above directed, then let it be worked off, twelve hours after, with two ounces of Epsom salts, dissolved in a pint of water gruel.

When any tumour takes place upon the umbilicus, or navel of calves, let them be well blistered, which is the best and shortest method of all.
DISEASES OF SHEEP.

BURSTING,
OR THE BLAST,

Is a disease which attacks sheep when they over-gorge themselves upon wet grass; clover in particular will produce this disorder. In this case the animal swells exceedingly, and foams at the mouth, breathes very quick and short, then dies in a state of convulsion.

In this disorder, the progress of the disease is usually so rapid, that the only chance of saving life, is by stabbing the animal in the flank with a common throcar, the tube of which must be left in the hole, until the wind be completely discharged: or give a decoction of mint, one pint; vitriolic ether, half an ounce, or more: this will make an admirable remedy, if the disorder will allow time for its administration.

OESTRUS OVIS.

In the heat of the summer season, sheep are often infected with worms, which torment them
about the nose, called œstrus ovis, which
Reaumur assures us to be produced from the egg
of a large two-winged fly. The frontal sinuses
above the nose in sheep and other animals, says
he, are the places where these worms live and
attain their full growth. These sinuses are al-
ways full of a soft white matter, which furnish
these worms with proper nourishment, and
they are sufficiently large for their habitation:
when they have here acquired their destined
growth, in which they are fit to undergo their
change into the fly state, they leave their old
habitation, and falling to the earth, bury them-
selves: and when these are hatched into flies,
the female, when she has been impregnated by
the male, instinctively knows that the nose of a
sheep, or other animal, is the only place for her
to deposite her eggs, in order to their coming
to maturity.

The fly produced from this worm, during
its life is of a very lazy disposition, and does
not like to make any use either of its legs
or wings. Its head and corteles together are
about as long as its body, which is composed of
five rings streaked on the back; a pale yellow
and brown are there disposed in irregular spots;
the belly is of the same colour: but they are
more regularly disposed, for the brown here
makes three lines, one in the middle, and one
on each side, and all the intermediate spaces are yellow. The wings are nearly of the same length with the body, and are a little inclined in their position, so as to lie upon the body; they do not however cover it, but a naked space is left between them. The ailerons, or petty wings, are of a whitish colour, and perfectly cover the balancers, so that they are not to be seen without lifting up these.

The fly will live two months after it is first produced, but will take no nourishment of any kind, and possibly it may be of the same nature with the butterflies, which never take any food during the whole time of their living in that state, as Reaumur asserts.

When these worms are suspected to produce any derangement in the animal's thriving, or perhaps produce the gid, let their nostrils be injected with salt water and vinegar, or trepan the frontal sinus, and inject with the same.

Veterinary writers seem to have taken little notice concerning the diseases of the deer, &c. which share the fate of many animals of no estimation in the sight of man. Nevertheless, we are certain that a considerable number die occasionally of epidemic diseases. But these cases are fully described in the different disorders incident to horned cattle and sheep, to which they bear the same affinity, and therefore
require no other mode of treatment, than those
described for the diseases of cows and sheep,
with some modification in the doses, which will
be about the same as for sheep, or goats, to
which the reader may refer.

GID,
OR STURDY EVIL,

A DISEASE to which sheep, and many other ani-
mals are subject; for the causes, symptoms and
prognostics of which we refer the reader to the
article staggers. It is supposed by farmers that
the gid in sheep proceeds from too high feed-
ing; but that opinion is not altogether con-
sistent with the simplicity of their food. But
a more probable cause may be owing to the
increase of blood in the arteries of the dura and
pia matter of the brain, in consequence of the
heat of the summer season; or perhaps from
bruises or concussions, produced by knocking
their heads against one another in fighting *

THE CURE must be attempted by bleeding
at the jugular or temporal vein; but the tem-
poral artery will give the animal a more
speedy relief, taking the blood to the quantity

* We may venture to say that blows on the head are the most
predominant causes of this disease in sheep.
of half a pint, or perhaps more; then a strong blister applied over the brain, which may be repeated if it be requisite. If the animal be costive, give an ounce or two of Epsom salts every three or four days; and keep the sheep on dry litter.

THE FLUX

Is another disease to which sheep are extremely subject, and for the most part is taken very little or no notice of, until it is too late. The cause of this distemper is, either their feeding on wet lands, or on grass that becomes mossy, salt marshes, or on poor miserable commons, where the animals are kept night and day exposed to the influence of the atmosphere in a state of starvation. The proper treatment of flux in sheep is to house them immediately, or as soon as the distemper appears, and keep them very warm, and feed them on dry hay; giving them one or two clysters of a decoction of linseeds, or marshmallows, with the following drench, viz. take extract of oak bark, an ounce; opium, half a drachm, or more; give the whole in half a pint of water gruel. If the animals should be affected with spasm or twitching of the bowels, add to the above liquid laudanum, half an ounce. If it be inclined to
drink frequently, let it have as much as it likes of the above water gruel.

Should any powerful astringent be required, give the following, viz. take opium, half a drachm; extract of oak bark, one ounce; alum, in fine powder, half a drachm; ginger, half a drachm; mix the whole with a pint of water gruel, or a decoction of linseeds or marshmallows.

The reader will observe that these two last prescriptions are calculated to restrain some severe looseness that may arise from a diseased liver, or a depraved state of the stomach, or from debility, or weakness of digestion: for if the blood be impoverished, by a deficiency of its nutritious support of chyle through the lacteals, the bile of course becomes equally defective, in being deprived of its due proportion of stimulus, &c. consequently it becomes inadequate to perform its functions.

**RED WATER,**

A disease so called on account of its colour being a little red. It is most prevalent in cattle, particularly on wet ground, arising from similar causes to those that produce a dropsy in the human subject, that is to say, from a too great quantity of serum thrown out by the exhalant
arteries, or from an inability of the absorbents in taking up the extravasated fluid; sometimes however it may be occasioned by a too great evacuation of blood, or by acute diseases protracted beyond their usual period; and although this cause seems very different from a laxity of fibres, yet those different swellings seem to be produced in a similar manner by both; for the vital powers being debilitated by either of these causes, naturally brings on a certain debility and laxity of the solids; and, on the other hand, a debility of the solids always brings on a debility of the vital powers, and from this debility in both cases, it evidently happens that those humours which ought to be expelled from the body, are not, but accumulate by degrees in its cavities, and produce the dropsical disease under consideration, vulgarly called red water by shepherds and others. The cure must be attempted by the use of medicines that possess a tonic quality.

If these fail, let the animal be tapped in the usual manner as for a dropsy, under the flank, just below the wool, for which operation, see the article dropsy in the diseases of horses.
THE RICKETS.

This is a disorder in sheep which has a considerable resemblance to the staggers in horses, beginning in both with more or less inflammation of the dura and pia mater, and often the whole mass of brain is affected. The first symptoms observed is a kind of light headedness which makes the affected sheep appear wilder than usual when any person approaches him: he bounces up suddenly, and runs to a distance, as if he were pursued by dogs. In the second stage, the principal symptom is, the sheep's rubbing himself against trees, &c. with such fury as to pull off his wool and tear away his skin. This case evidently shows that the disorder is one of the most inflammatory kind, yet it never breaks out on the skin, nor does it ever show any disposition to come to any salutary critical discharge, for the want of which a considerable fever takes place, which continues till death.

On dissection, it is said that a maggot about a quarter of an inch long was found in the brain, or membranes adjoining.

It is probable however, that on minute inspection, it might have proved to be nothing
more than a piece of coagulated lymph, similar to those found in the heart after death, called polipus.

The Cure of this disease, or inflammation of the brain, must be attempted by large and repeated bleeding; if it is found necessary, to the quantity of a pint at a time, or perhaps more; but this is to be regulated at all times by considering attentively the size and strength of the animal; then let there be strong blisters applied over the brain, having previously clipped the wool over the head and first vertebra of the neck. If the affected sheep be costive, give him two ounces of Epsom salts, and repeat the same dose as often as necessity requires.

**ROT**

Is a very destructive and alarming disorder in sheep. The nature and causes of it is not yet fully ascertained; it becomes therefore requisite to make some remarks on the different opinions of the best and most judicious observers. The latest, and by far the most scientific writer on the subject, is Dr. Harrison.

When in warm, and sultry, and rainy weather, sheep that are grazing in low and moist lands, says he, feed rapidly, and some of
them die suddenly, there is reason to fear that they have contracted the rot. This suspicion will be further increased in a few weeks afterwards, if the sheep begin to shrink, and become flacid in their loins. By pressure about the hip at this time, a crackling is sometimes perceptible. Now, or soon afterwards, the countenance looks pale, and upon parting the fleece, the skin is found to have changed its vermillion tint for a pale red. As the disorder advances, the skin becomes dappled with yellow or black spots.

About this time, the eyes lose their lustre, and become white and pearly, from the red vessels of the tunica aduata and eye-lids being contracted, or entirely obliterated.

To this succeeds debility and emaciation, which increase continually till the sheep dies, or else ascites, and perhaps general dropsy, supervene before the fatal termination.

These symptoms are rendered more severe by an obstinate purging, which takes place at an uncertain period of the disorder. In the progress of the complaint, sheep become what the graziers call chockered, afflicted with a swelling under the chin, which proceeds from a fluid contained in the cellular membrane under the throat.

In five or six days after contracting the rot, the thin edge of the small lobe of the liver be
comes of a transparent white or bluish colour, and this spreads along the upper and lower sides, according to the severity of the complaint. Sometimes it does not extend more than an inch from the margin. In severe cases, the whole peritoneum, investing the liver is diseased, and then it commonly assumes an opaque colour interspersed with dark red lines. The upper part of the liver is sometimes speckled like the body of a toad, to which it is said to bear a striking resemblance. Round the ductus communis choledocus, and hepatic vessels, a jelly like matter is deposited, which varies according to the severity of the attack, from a table spoonful, or less, to five or six times that quantity. Upon boiling the liver it loses its firmness, and separates into small pieces in the water, or remains soft and flacid.

When the first stage is over, says the doctor, flukes begin in the porii biliarii, the ductus communis choledocus, and in the gall-bladder. At first the number of these creatures is small; but as the disease advances, they increase, and before death they are often very numerous. In the last stage of the complaint, they are sometimes to be found in the stomach, as well as in the intestines and liver. This, like visceral disorders of the human body, may terminate in resolution, effusion, suppuration, or schirrus.

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In this opinion I must beg leave to differ a little from the doctor, because I am strongly inclined to believe that although a considerable inflammation may end in resolution, yet it generally leaves behind it some remains, which may be discovered by an experienced anatomist. When the vessels are thrown into inflammatory action for a few days only, it produces a change in the sanguinary system which often continues through life, and lays the foundations of many chronic and incurable disorders. Sheep that have been recovered from the rot exhibit very different appearances after death, according to the severity of the attack, but the taint is seldom, or never removed.

When sheep die suddenly in the first stage of the disorder, an effusion of serum, or of wheyish coloured fluid may be commonly discovered in the cavity of the abdomen, and the peritoneum surrounding the liver, is generally covered with a membrane or coat of coagulated lymph. This form of the rot has been frequently confounded with the resp, or red water, though it differs from the latter disorder in the colour of the effused liquor, in being much less disposed to putrefaction, and in several other particulars.

Abscesses in the liver exhibit another termination of this malady; they are seldom con-
siderable enough to kill immediately; but in consequence of the absorption of purulent matter from them, the sheep frequently waste away, and die hectical or dropsical. When the collections are small, sheep will recover sufficiently to bear lambs, for three or four seasons, and afterward become tolerable mutton.

But the most common termination of this disorder is in schiri, or what the shepherds call knots in the liver. The whole substance of this important viscus has been found so full of small roundish lumps, or schirrous bodies, that it was difficult to find any sound part in it. The first attack is unfortunately so tedious, that the disorder is scarcely observable, before the animal begins to waste and lose flesh; in this advanced state it is said to labour under the rot, or pourriture, from overlooking the commencement of the disorder.

Hydatids are observed to affect shirrous and purulent livers more frequently than others. When livers are much diseased, the butchers carefully conceal them from the public eye. Dr. Harrison concludes by expressing his firm persuasion, that the uniform mortality amongst these animals, proceeds rather from ignorance, or erroneous treatment, than from the inevitable tendency of their disorders.
We shall now proceed to explain the author's opinion concerning the causes of this inveterate malady, which is attributed,

First, To a vitiated dew.

Second, To a crust which adheres to the grass after wet weather, or the overflowing of running water.

Third, To the luxuriant and quick growth of plants in hot moist seasons.

Fourth, To grazing upon certain herbs.

Fifth, To fasciolar hepaticae, or their ova being introduced into the stomach of animals, by feeding on swampy and low grounds in moist weather.

Sixth, it is ascribed, by Daubenton, to poor diet, and drinking too much water.

To each of these Dr. Harrison opposes such reasoning as he thinks sufficient to demonstrate their fallacy; and concludes by saying, that it seems to be occasioned by poisonous effluvia, which, under certain circumstances, are emitted from marshy soils.

We must, of necessity, confine ourselves to the latter; in support of which the ingenious author offers the following strong opinion, that the rot in sheep and other animals, such as pigs, cows, asses, horses, poultry, and rabbits, is produced in consequence of feeding in the roads and ditch bottoms, or places which are
frequently overflowed by rivers, &c. and is called paludal effluvia; but with respect to the nature of this effluvia, he acknowledges it is very difficult to form any rational opinion, as it has hitherto eluded the most subtle and delicate enquiries.

I perfectly agree with Dr. Harrison's opinion concerning the description and causes of this fatal disorder among sheep.

But is it not surprising, that in all my travels in the northern part of France, Flanders, Holland, &c. which countries are known to be infinitely lower and swampy than any part of England, I never saw, nor is any such disorder known in any part of those countries. The north of France, from Calais, Gravelines, Dunkirk, Bruges, Brussels, St. Omer, Berg, &c. and all that part of the world in particular, ought to be acquainted with the rot if the distemper arise from feeding on ditch bottoms, or places which are frequently overflowed by rivers. But further if we allow this to be the cause, how are we to account for this distemper not being so prevalent in those low, marshy, and swampy foreign countries, as well as in England? since it is well known that they lie under water for the most part of winter, and often at other seasons of the year. I resided twenty-four years about Calais, Gravelines,
Dunkirk, Berg, and other places in which sheep are fed in very great numbers, yet I never saw nor heard of any such disorder as sheep rot.

My opinion on the subject, therefore, is simply this, viz. that the distemper is prevented by their manner of feeding and treating their cattle in the winter season. From the middle of November to the middle of the month of March, they are generally kept in the stables, except for a few hours in the middle of the day, when the weather is dry. On their return to the stables, the racks are filled with straw or hay, or perhaps both mixed together. This method of keeping sheep is not altogether adopted for preventing the rot, but for keeping them out of the way of the wolves, which are in those countries very numerous, and very troublesome to farmers; and at the same time, no doubt, to keep them from the rainy and snowy weather, and other severities of the atmosphere by which sheep are susceptible of injury, particularly in long winter nights. They are not indeed so soon wet as others that have less covering; but when the rain has once penetrated through their wool, it can not easily be dried, and keeping them in a constant state of shivering, generates many disorders, such as cold and cough, &c. which are generally attended with more or less of inflammation. It is
true that these cases may terminate by resolution, yet they are apt to leave behind some chronic affections in the internal viscera, which may give birth to the disease under consideration. Particularly phthisis pulmonis, hepatitis, and other disorders of the skin similar to scurvy in the human subject, or the farcy in horses.

Another cause besides the severity of the atmosphere, capable of producing the rot, is the feeding them constantly upon low swampy land, or places that are occasionally covered with water, without giving them food of a substantial and tonic quality, such as hay, or good wheat straw.

The propriety of tonic food, as well as keeping them under cover in wet weather, is sufficiently proved by those that have adopted the method, as their flocks has never been visited by such a disorder as the rot. This clearly proves that the distemper is produced by feeding sheep too long upon food of a relaxing quality, during the time they are exposed to cold wet weather, and the severities of a long winter season.

In dissecting sheep that die of this disorder flukes* are sometimes found in the liver, and are said to be the cause or the effect of the rot;

* These insects much resemble the flat fish, (called plaice) they
but whether is not determined yet, nor is it easy to explain how they originate in the liver.

The opinion of some is, that they are swallowed by the sheep along with their food while in the egg state; the eggs being deposited in the tender germ, are conveyed with the food into the stomach and intestines of the animal, whence they are received into the lacteal vessels, and carried off in the chyle, and pass into the blood, and not meeting with any obstruction until they arrive at the capillary vessels of the liver: but here, as the blood filtrates through the extreme branches, answering to those of the vena portæ in the human subject, the secreting vessels are too minute to admit the impregnated ova, which, adhering to the membrane, produce those animalculæ that feed upon the liver and destroy the sheep.

This opinion may appear probable; yet without indulging myself in animadverting upon the opinions of others, I shall endeavour to prove, by innumerable facts, that these insects called flukes have their origin from a different source, infinitely shorter.* They, in my opinion, im-

are of different sizes, and are found both in the liver, and in the gull-duct, which conveys the bile from the liver into the duodenum, or lower intestines.

* It is probable that flukes take place in the biliary ducts and
mediately arise from a too dilute state of the bile, or a state of imperfection of this fluid, in consequence of some derangement in the glandular substance of the liver; by which mechanism they immediately migrate into the biliary ducts, and produce ulcers in the liver, attended with coughs, phthisis pulmonalis, hectic fever, and appearance of scurvy, which symptoms commonly characterise the rot. In support of this opinion it must be recollected that flukes are never found in the livers of sheep, except after the disorder has spread itself on the constitution, which is in more or less time, according to the violence of the disorder and the cause that has given rise to it; which cause is beyond doubt frequently noxious and improper food, or a deficiency of sustenance, from the pastures being too poor. The most obvious cause of the rot however is exposure to cold and wet weather during the long winter nights, and feeding at the same time upon grass of a bad quality, instead of indulging the animals with food of a substantial and tonic qua-

liver of sheep, by a process similar to maggots, in some ill-conditioned ulcers that sometimes take place in different parts of living animals. I have seen myself, and taken more than once, a large quantity of these maggots out of the sensible frog and sole of horses that had been for a long time troubled and neglected with running thrushes, or canker in the foot.
Rot.

This opinion is sufficiently established by the flocks of those that feed their sheep at home with good hay and dry lodging never being visited with this disease; and any one that will try this mode of treatment, will soon find it to be the best means of curing, as well as preventing, this dreadful distemper in sheep.

The Cure of the rot can be expected only from the administration of such medicines as are evidently calculated to reach the very remote seat of the disease; if arising from the causes above mentioned, and attended to in its infancy, it will yield to the following treatment, viz.:

Take a table spoonful of common salt, and half a drachm of aloes, dissolved in half a pint of a strong decoction of worm-wood; and give to each sheep the dose every day, or every other day, until it begins to purge, which will be very gently. Or,

Take a strong decoction of parsley, sage, rue, and savin; to this add yeast, and afterwards a table spoonful of salt to every pint of the decoction. Give half a pint of this to each sheep every other day, or oftener, if necessity requires. Or, take a strong decoction of chimney soot in milk, or if milk is found too expensive, in a decoction of worm-wood. Or,
THE SCAB IN SHEEP

give six or seven table spoonfuls of sea water once or twice a week.

Should the disorder have rendered the animal feeble and languid, it must be supported with food of easy digestion, such as a mixture of bran, oats, and beans, equal quantities of each (finely ground), and common drink of water gruel may be given as occasion requires.

To conclude, I strongly recommend to feed sheep at night in cold and rainy weather under a shed, cover, or a stable, with hashed fodder straw, made as comfortable as possible; it will greatly contribute to the recovery of the diseased ones, and to the preservation of those in health.

THE SCAB IN SHEEP

Is a cutaneous disorder similar to the mange in horses, and as in them owing to an impurity of the blood: it is most prevalent in wet lands, or in rainy seasons of the year. This disorder is also extremely common in those countries where they are obliged to house them both summer and winter to save them from the wolves and other carnivorous animals.* Professor Vibourg,

* For further information respecting the causes of this disease, the reader will refer to the article Mange.
of the veterinary college of Copenhagen, has described this cutaneous eruption as the sheep-pox, and to be the cause of the rot. But this opinion deserves no credit, modern investigations convincing us of the contrary. The case being absolutely local, will always subside, and be permanently cured by external application only; for which purpose a strong infusion of tobacco in vinegar, with an addition of half a pound of sal ammoniac to every gallon of the infusion, or an ointment composed of mercurial ointment, tar, venice, oil of turpentine, and hog's lard may be applied. With either of these applications the blotches will dry up in a few days, the itching will cease, and the animal be completely cured.

THE HIPPOBOSCA OVINA,
COMMONLY CALLED SHEEP-FAG.

This is a disease in sheep which I believe to be entirely imaginary, although some writers have ventured to say, it is well known to all shepherds. Not a word however is mentioned in their works of what kind of animal or insect it is which torments the sheep, nor yet have they said any thing concerning its origin nor what time of the year the hippobosca ovina is produced, which is supposed to live among the
wool, and which prevents the thriving of sheep, by the pain its bite occasions, the blood it sucks, &c.

For my own part I sincerely declare, that after a vast number of years of practice and observation, and every information I have endeavoured to get from other experienced men on the subject, I have never been able to discover the existence of such a disease described to be produced by the bite of an animal residing in the wool of sheep, unless it be from that insect called the fly struck, the symptoms of which are as follow: as in the summer season, bees, wasps, or other insects, often introduce themselves into the wool of sheep, in which they are apt to produce a considerable uneasiness to the animal, by shortly after their introduction into the wool producing wounds in the skin, which is certainly very painful, and no doubt prevents the thriving of the sheep, if proper relief is not immediately given to the animal. This I believe is the animal represented under the name of hippobosca ovina, which is nothing more than a disease produced by the sting of insects.

But allowing the existence of both cases, their difference, in regard to their causes and mode of treatment will be found of little or no consequence, since I am certain that both will be cured by the same means, viz.: take bruised
cantharides, an ounce; sublimate corrosive, two drachms; sal-ammoniac, two ounces; and proof spirit, a quart; digest the whole for eight days. Or, take tar, two quarts; spirits of turpentine, a pint; tincture of cantharides, two ounces; let the whole be well mixed together, and it will make an admirable good remedy to kill all vermin wherever it goes.

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**DOGS,**

**AND THEIR DISEASES.**

This animal being acknowledged to be of great value to man, by contributing to his amusement, his convenience, and his personal security, it becomes, therefore, a worthy object of veterinary investigation. We shall therefore endeavour to point out the symptoms of the diseases incident to this useful animal, and the best modes of treatment to be adapted for their cure.

As the most common of diseases and accidents of dogs we shall first notice Bites and Stings. In the summer season dogs are frequently bitten by venomous creatures, such as vipers, snakes, wasps, bees, &c.; these bites, or stings, are so painful to the animal, that he runs, screeches, rolls himself on the ground, and tries to tear off
the bitter places with his teeth. A case of this kind has been often mistaken for hydrophobia, or madness, as the dog foams at the mouth, and has almost every symptoms of madness. The cure should be attempted by squeezing out the blood, and washing the place with salt of tartar and water, then laying an ointment to it, made of Venice turpentine and honey, and a little olive or sweet oil. If the dog has been stung by wasps or bees, apply either the oil or the honey alone, which will be an effectual remedy.

Veterinary writers seem to have taken but little notice concerning the diseases of the deer, &c. consequently these share the fate of many animals of no reputation in the sight of man. Nevertheless, we are certain that a considerable number die occasionally of epidemic diseases. But these cases we have fully described when treating of the different disorders incident to horned cattle and sheep, to which they bear a strong affinity, and therefore require no other mode of treatment than those described for the diseases of cows, and sheep, except some modification in the doses, which should be about the same as for sheep or goats, which the reader may refer to.
CHANCRE.

It may appear something astonishing to those persons who are not acquainted with the diseases of quadrupeds, to find that dogs are subject to venereal disorders as well as the human subject; the fact, however, is too well ascertained to be doubted. But in order to render this circumstance obvious, I shall give the following anatomical description, viz.: Upon the penis of dogs there are two protuberant bulbous fleshy substances, resembling the glans penis in man; at the back of which are two veins, which, by the erectores penis and other parts, are compressed in the time of coition, and the circulation being stopped, the blood distends the large cavernous bodies. After the penis is thus swelled, the vagina, by its contraction, and swelling of its corpus cavernosum, which is considerably greater than in other animals, gripes it closely, and so the male is kept in action some time contrary to his will, till time be given for bringing a quantity of seed sufficient to impregnate the female.

This short description of the part of generation of dogs will serve to give a better idea of the possibility of these animals being af-
fected with venereal complaints, in consequence of their being a long time in the act of coition. To these circumstances we may add the impurity of their food, which is generally confined to rough, and the most part, of diseased carrion, or other impure food of the same nature. These circumstances considered, we cannot be surprised to see carnivorous animals troubled with the disorder under consideration.

Chancro is generally seated on the glans penis, or on the fleshy substances above mentioned, and frequently all over the parts of generation. They appear at first like little erysipelatus inflammation, with itching; this is followed by small pustules, filled with a transparent fluid, which becomes sometimes white; these break, and a small but spreading ulcer is formed, which is inflamed and painful, and unequal at the bottom, often with hard protuberant ash-coloured edges, covered with whitish sloughs. The surrounding callosity about the edges of these ulcers distinguishes them from all others. In order to cure the chancro in dogs, the venereal infection (which is the only cause) must be destroyed: they may be dressed with the strong unguentum hydrargyri, spread on lint, once in twenty-four hours; by which means they are sometimes easily re-
moved. The internal use of mercury must never be omitted, even in the slightest chancre. Or when the ulcer is not very inflamed, let it be dressed with any digestive ointment, sprinkled well with verdigrase finely levigated; this will make a very good application, that will heal the ulcer in a very short time in the recent state of the disease.

COUGHS AND COLDS.

Dogs are also extremely subject to colds and coughs, particularly those that are kept in warm stables along with horses, and deprived of a free circulation of air, and have not sufficient exercise. Indeed confinement is in general the source of the above disorders in dogs, as well as many other animals adapted for active life. If the cough proceeds from a cold, let the animal be bled at the auxiliary vein that runs along the inside of his fore leg. Then give the following pill every evening, viz.: take sulphur and spermaceti, two ounces of each; nitre, an ounce and half; honey, sufficient quantity to mix the mass, to be divided into eight doses; give him one dose every day, with one or two ounces of milk or gruel, sweetened with honey, and a few drops of paregoric elixir, and let him have a comfortable place, and plenty of straw to lie on.
CONSUMPTION.

A disease so called by reason of the dog’s leanness and pining away without any apparent cause; this disease is chronic, but it always arises from some inflammatory complaints which have previously existed. For the cure of consumptive dogs we may give with success the following pills, viz.: blue vitriol and tartar emetic, of each half a grain; myrrh, twenty grains; alum, a drachm; honey, sufficient quantity to mix the whole for two doses, which may be given every evening, increasing or diminishing the dose according to the strength, age, and constitution of the animal. Gentle exercise in a good open air will be extremely beneficial also.

CONTAGION.

By contagion we mean disorders that are propagated by an immediate contact or touch; as the madness of a dog, which is communicated by biting; the venom of a viper and other reptiles: of this nature also is the mange, farcy, and the glanders in horses.

There are also some contagious or pestilential distempers incident to horned cattle only,
which seem to arise, in consequence of some particular effluvia, which is generally floating in the atmosphere, but not observed to act, except when a healthy animal approaches the sources from whence they arise. The idea of contagion properly implies a matter arising from a body under disease; and that of miasma, a matter arising from other substances, as from putrifying vegetables, and other causes, in which we know little of their variety, or of their several effects.

The miasma, so universally the cause of contagious disorders among horned-cattle, is that which arises from marshes, or moist ground acted upon by heat. So many observations have now been made with respect to this, in different regions of the earth, that there is no doubt of its being in general the cause of those dreadful pestilential disorders among oxen and cows, which stripped the north of France, Flanders, and a great part of Holland, of their horned cattle.

The similarity of the climate, season, and soil, and the similarity of the contagion, concur in proving that it proceeds from one and the same cause, and that is the marsh-

* Signifying those small particles which are continually flying off from bodies.
miasma. What is the peculiar nature of this miasma we know not; nor do we certainly know whether or not it differs in kind: but it is probable that it does not, and that it differs only in the degree of its power, or perhaps in its quality, in a given space.

It may further be added that both contagion and miasma are of a debilitative or sedative quality: they arise from a putrescent matter. Their production is favoured and their power increased by circumstances which favour putrefaction; and they often prove putrefactive ferments with respect to the animal fluid.

DISTEMPER.

Young dogs are as much subject to this disorder as colts are to the strangles, and the human subject to the small-pox, and indeed they are diseases of the same nature; but manifesting itself in different ways, although not being accompanied with anycretical discharge in dogs, as in other animals, or in the human subject.

The real seat of distemper in dogs is but very obscurely understood; some have placed it in the brain, others in the stomach, and some others again, in the bowels, &c. But without descending to the minutiae of those different opinions, we shall confine ourselves to the follow-
ing one, which is, that the disorder takes its origin from the brain; and that by the medium of the right pairs of nerves, called also pair vagum, because they are dispersed almost into all parts of the body; such as the neck, shoulders, head, chest, heart, and stomach, which last viscus is supplied with innumerable branches of nerves that come immediately out of the brain, which accounts for the convulsive motions, and the many painful symptoms which affect the stomach, as well as the head, and almost the whole intestinal canals.

This circumstance shows the necessity of attacking the disorder by vomit, and purging physic, repeated alternately one after another, at least three or four times each; after which the following alterative pills may be given with great advantage, viz. take extract of cicutæ, a drachm; Peruvian bark, an ounce and a half; calomel, twelve grains; let the whole be mixed with honey and a little oil of rosemary, sufficient to form six pills: give one every day.

Let meat broth, or milk broth warmed, be the principal part of his diet.
EPILEPSY.
OR FALLING MADNESS

For the description of this disease in dogs the reader will refer to the article epilepsy in the diseases of horses, as this complaint evidently takes its rise in the vessels of the brain, which makes the dog reel as he goes and fall down with every epileptic symptom.

For the cure—Let the animal be bled in the two veins that are going up his shoulder, or at the temporal artery perhaps will be better. Afterwards give him two or three aloeic and calomel purges, and apply a blister on the top of the head, having previously shaved the hair if it be too long. If the animal is costive, let a clyster or two be injected, and keep him upon an emollient and nourishing diet of gruel, or milk and water, so often recommended for the diseases of dogs.

GONORRHŒÆ.

A gonorrhœæ is not so common a disease in dogs as the chancre: but when it takes place the cure should be attempted by destroying the venereal virus, defending the parts from its acri-
mony, and lastly, to abating the irritation which it occasions.

To answer these ends, oleous and mucilaginous injections are well adapted, particularly if they have opium, and the mildest mercurial preparations combined with them.

Milk, broth, and milk and water is the only diet required.

MADNESS,
OR HYDROPHOBIA,

A disease, the very name of which is terrible, on account of its consequences to mankind. In this disease the animal is of so little value, that his life is no longer worth preserving; therefore to dwell upon this subject would be answering no purpose whatever. To describe the causes and symptoms would perhaps be proper, but to attempt the curing a mad dog would be considered as an act of folly, considering the danger attending it, which certainly does not balance the benefit resulting from such an enterprise. For the causes and symptoms of madness we refer the reader to the article hydrophobia.

As to the treatment, if a person wish to undertake to cure this dreadful disorder, I recommend to give the animal six or seven grains
of vitriolated quicksilver, which may be increased by degrees to eighteen or twenty grains a day, or every other day, leaving off now and then, and repeating again two or three days after.

This medicine has been found one of the most effectual remedies against the hydrophobia; and we have several examples of its having prevented madness in dogs which had been bitten; and some instances are known of its having performed a cure after the madness was begun; but the bitten parts must be cut away with the knife, and the actual cautery applied to it as soon as possible after the accident has happened.

**MANGE.**

**Dogs** are extremely subject to the mange, from being fed either too high or too low, and allowed no exercise, or an opportunity of refreshing themselves with dog-grass, an herb which greatly contributes to keep these animals in health. But the most common cause of the mange in dogs is produced by starvation, which miserable state creates many disorders, not only in those animals, but in every other species also, which can hardly be credited by those who are unacquainted with the animal economy; nevertheless it is a fact, that star-
vation or improper food, such as rough carrion, or even the human excrement, or want of water, and cleanliness in the kennel. In all these cases the blood acquires malignity and produces a severe and constant irritation, or itching, called the mange.

The Cure may be properly attempted by first washing the animal thoroughly clean in a tub of water and soap, afterwards give him six or seven grains of calomel, mixed in a pill, with a little flour of sulphur, and treacle or honey sufficient quantity to give a proper consistence. If the calomel does operate or purge sufficiently, you may give a little more. The same dose must be repeated two or three times, leaving five or six days interval between each dose. At the same time apply the following ointment, viz.

Take flour of sulphur, four ounces; hog's lard, six ounces; oil of vitriol, an ounce, or perhaps more; mix it and anoint the dog with it every day, or every other day: or, mix an ounce of blister with the same quantity of the above ointment, let the mangy parts be well rubbed with it; and let the animal be well washed with water and soap two or three days after. Before and after using any of the above ointment, some people may perhaps give the preference to mercurial ointment, with the ad-
dition of a few drops of oil of vitriol, which dressing makes certainly an admirable remedy for the mange.

POISON.

Young dogs are apt to play with feathers or corks, and often swallow those things which are really poison to them. In this case a vomit should be given, composed of three grains of tartar emetic, dissolved in three ounces of water; give the animal a table spoonful or two every quarter of an hour until it operates; or salt and water given in a large quantity, will also operate as a vomit and a purgative; and when the stomach is cleared from the particles of feathers or cork, give boiled milk or broth.

But there are other things that are more usually employed to poison dogs; the most common of which is nux vomica, which soon manifests its effects, by causing dreadful fits, and almost instant death. The most effectual remedy of this, is, to give a vomit, as directed above, and then give an ounce or two of castor oil every hour, until it purges; then stop, and let him have plenty of warm milk for his drink, or good broth would be preferable, in order to support his strength, and prevent him from expiring through faintness.
QUINSY,
COMMONLY CALLED DUMB MADNESS.

This is a disease in which the dog holds his mouth always wide open, frequently putting his feet to it as if he had a bone in his throat; and the animal likewise does not feed; therefore this disease being produced by inflammation and irritation about the parts of deglutition, it will be necessary to bleed on the inside of the leg, as near the shoulders as possible, then apply a blister under the pharynx and larynx, or throat, giving two or three aloetic purges as the inflammatory symptoms subside; during which the animal must be kept on milk and water, or other emolient diet, till he is recovered.

RHEUMATIC,
OR SLAVERING MADNESS.

This disorder announces itself by a great swelling at the head, the eyes looking yellow, and the animal always slavering and drivelin at the mouth, in consequence of the salivary glands being affected and inflamed. This is a case in which bleeding largely is absolutely necessary,
and afterwards a gentle emetic, composed of half a grain or a grain of tartar emetic and ten grains of ipecachuanæ; the day after, the following alterative pills will be found extremely useful, viz. antimony, powdered, half a grain; calomel, a grain: mixed with a little flour of sulphur and honey to form a pill. The dose of this alterative medicine must be increased or diminished according to its effect.

**STRAINS, BRUISES, OR SMALL WOUNDS.**

It frequently happens that dogs get lamed in consequence of forcing through hedges, and get thorns or splints in their feet or legs, which accidents will render them more or less lame. As soon as it is discovered, the limb must be carefully examined, and if any thorn or other substance is found, they must be extracted without loss of time; then apply a fomentation of warm water and a plaister of common basilicon or marshmallows ointment. When the legs have been strained, bathe the part with salt-water and vinegar, and apply a little poultice of boiled turnips or other of the same emollient qualities. If the dog gets lame without any apparent cause, and this takes
place after a day of severe hunting; in such case wash his feet with warm water, and when dry, bathe them well with vinegar; this will take off the soreness.

SLEEPING DISORDER.

A disease so called from the great drowsiness and almost continual inclination to sleep. Some people have attributed this disorder to little worms that breed and accumulate in great numbers in the mouth of the stomach; but I am pretty sure, by anatomical observations, that this disease proceeds from a different cause, viz.: from a stagnation of blood in the vessels of the brain, by which the nerves are affected, particularly the par-vagum, which gives off branches in the neck, tongue, larynx, and thyroid gland, and then descends into the cavity of the thorax, where it gives off several branches to the heart and lungs; having passed the diaphragm, they expand over the stomach, and also send some branches to unite with the great intercostal, and concurs in forming the hepatic, splenic, and renal plexus.

It will therefore be easily perceived, that when interception, or a partial obstruction, of animal fluid through the nerves takes place, it
WORMS.

will produce the sleeping affection now under consideration, and that it does not proceed from little worms bred in the mouth of the stomach, as represented by some writers, but from a disease of the brain and nerves, which sympathize with all the parts above mentioned as well as the stomach.

The disease being produced from plethora, and of an inflammatory nature, the animal requires to be bled, and treated with antiseptic and emollient remedies, such as milk and water, or gruel and milk, &c.; after which we may give a decoction of worm-wood, savin, and a little wine. A blister applied over the head will be of great service also; and after the animal is perfectly recovered, give him one or two gentle doses of physic.

WORMS.

Young dogs are so subject to worms, that there is scarcely one without them, and they are often the fundamental cause of that disorder called the Distemper. When a dog is suspected to have worms, give him three or four grains of calomel, mixed with a little flour and water; then give him a small piece of meat. The next morning give him four or five Scotch pills; but the number of these pills depends on
the size and strength of the animal, for a small dog, three or four will be enough. This treatment will in a very short time eradicate all those insects, and will prevent the many diseases that might originate in them from taking place.

The following will be found extremely useful also, not only to kill the worms, but to prevent their future generation, which is a point that we must always have in view, viz. take powder of tin, an ounce; dry savin, and wormwood, forty grains of each; mixed up with a little butter and flour, in several pills, for one dose, to give with a table spoon and milk.

Before I dismiss the subject of the diseases of dogs, it will be necessary to make a few observations on the means of keeping those animals in health. This very much depends on their diet and lodging; frequent cleaning their kennels, and giving them fresh straw to lie on, is also necessary; and they should be washed, or made to swim, in clean water, or washed with soap and water, and brushed and combed at least twice a-week; this attention will certainly prevent the mange. A dog should never be without clean water before him, that he may drink when he is thirsty. We have said before that rough carrion is by no means a proper food for dogs: barley-meal, the dross of wheat flour, or both mixed together, with broth or skimmed milk is a very good diet. For
change, sheep's feet well boiled, with a little flour, will be proper also. When dogs are indulged with flesh, it should always be boiled. In the season of hunting it is proper to feed them upon a little oatmeal porridge with skimmed milk. If you stop for your own refreshment in the day, you should also refresh your dogs with a little bread and milk. These animals, being of a hot constitution, eat, what is of the greatest relief to them in summer, an herb, which is commonly known by the name twitch, or dog-grass. The efficacy of this herb, in respect to dogs, as a preventive to many disorders, is such, that it should be encouraged to grow in some proper place, where they may be turned to feed freely on it; by which practice they would be kept in health, and many dreadful distempers avoided.

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DISEASES OF PIGS.

The hog is, without doubt, the most impure and filthy of all quadrupeds; he generally devours what is the refuse of all others; he does not only contribute to remove what would be a nuisance to the human race, but he converts the most nauseous offals into the richest nutriment; for this reason his stomach is capacious, and his gluttony excessive; not that his palate
is insensible to the difference of eatables, for where he finds variety he will reject the worst with as distinguished a taste as other quadrupeds. This voraciousness seems to proceed from the perpetual cravings of his stomach, which is of an immoderate size; and the grossness of his appetite, it is probable, arises from the bluntness of his senses of taste and feeling.

With all these imperfections, he is nevertheless not so subject to disorders as almost any other brute animal, the chief of which may be considered in the following order.

**CARBUNCLE**

Is a disease of pigs which takes place under the jaw just opposite the parotid or maxillary glands, in the shape of a black hard tumor, generally appearing suddenly and unexpectedly, in an hour or two, and attended with inflammation, which proceeds so rapidly to mortification and gangrene, that if the disorder is not noticed, or a proper treatment adopted, the animal will die in thirty-six hours from the first attack.*

This disorder in pigs seems to proceed from high feeding, and so close confinement, as to prevent a free circulation of air, which produces a putrescent state of the system.

* The French call this disorder Le Feu, on account of its destroying the animal almost instantly.
SCROFULA.

The Cure may be radically effected, by cutting away in proper time the black lump that produces the mischief, and applying the actual cauterY very lightly to the wound; afterwards the sore must be dressed with spirits, and Venice turpentine and honey, mixed together, equal quantity of each. No internal medicines are required, but the animal must be kept clean, and in an open air.

SCROFULA.

This most extraordinary disorder in swine* seems to have escaped the notice of every veterinary writer, the moderns as well as the ancients. This is probably owing to the thickness of the skin under which the disorder lies concealed, or to the very few diseases to which this animal is liable to.

The symptoms consist of hard indolent tumours, situated in every part of the body, of a schirrous nature, when the animal is alive, and almost impossible to be discovered, except by those practitioners that are perfectly acquainted with the nature of the distemper. The method of discovering whether a hog is disordered with the scrofula or not, is to throw him down on one side, then getting hold of his tongue with a clean rag, and pulling it out of

* The French call this disorder Le Ladre, and the English Measly.
his mouth as far as possible, wiping it clean, and pressing it from the root to its other extremity. If he is affected with the disease, you will perceive a number of small hard scirrous substances, similar to round peas, or rather like lead shot of different sizes; if these are not perceptible the animal is sound.

When a pig is found to have this disorder, he ought to be rejected the same as a glandered horse when sold with that infection, as being unfit, and even dangerous to be made use of for human food. And indeed in some places there is a penalty against those who are found guilty of selling, or attempting to sell, a hog of this kind; and in order to prevent any mistake or fraud, there is men in every fair or market in the kingdom, to inspect them before they are delivered up to the buyer: these men are paid so much for every hog that goes under examination,

When a pig is killed with this distemper, a great number of small abscesses of different sizes are found in various parts of the body, particularly in the fatty part of the back, ribs, belly, &c. containing white matter, resembling the pus of a common sore. But it is worthy of remark, that these are visible after the meat has been boiled only, and hardly perceptible when in the butcher's shop, except by those that are perfectly acquainted with the disorder.
SCROFULA.

It is therefore evident that such a disorder in the flesh of an animal, which is looked upon as very substantial and agreeable food, should render the public extremely cautious in purchasing or eating pork or bacon, &c.* The causes that produce this disorder in pigs is not easily ascertained; but we have every reason to suspect that it originates from an impurity of the blood, in consequence of having been kept too long a time in a state of starvation, and allowing them to eat food of an impure quality, such as putrified carrion and even human excrements, and such like; which food will cause the blood to degenerate into an acrid serum, that acquires malignity, particularly in the lymphatic system.

The blood also stagnates in the cellular membrane, and the interstices of the muscles; in which situation it becomes incapable of penetrating through the skin, in order to show itself on the surface of the body; in this concealed state it produces the disorder under consideration. If pigs are allowed to breed in this morbid state, (as is too often the case, on account of the animal shewing every appearance of health in every other respects, feeding and

* It is not at all unlikely that the eating of such meat has often been the cause and real source of many disorders in the human subject; such as fevers, diarrhoe, and even bloody flux; and the true causes in large towns and cities never truly known or even suspected.
getting as fat as any sound one) the young of such parents, will certainly be affected with the same distemper.

The Cure of this measly distemper must be attempted by keeping the animal as clean as possible, with a constant supply of fresh straw and wholesome food, composed of oats, barley, and beans, well ground, and mixed with a large quantity of warm water, taking care to mix carefully three or four grains of sublimate corrosive, in the above mess of barley and beans: and the same dose of the sublimate may be repeated twice a day. This will be found an efficacious remedy when given in a decoction of oak bark, or a quart of strong ale, with the above food, instead of water.

But I must say, that nothing but a large and valuable pig should induce me to the trouble and expence; for swine labouring under disorders are hardly worth curing: but those practitioners that wish to pursue the means, without regard to the expences, will find that the above treatment, and food of a tonic quality, with every attendance in respect to cleanliness, are the most essential objects to be considered in order to obtain the desirable effect.

THE END.