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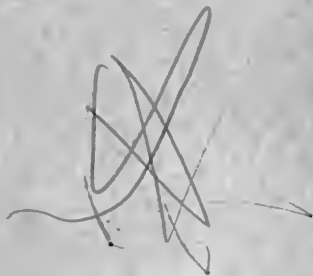
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THE BOVINE PRESCRIBER.



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# THE BOVINE PRESCRIBER

FOR THE USE OF

**Veterinary Practitioners and Students**

BY

**JAMES B. AND ALBERT GRESSWELL**

AUTHORS OF A MANUAL OF THE THEORY AND PRACTICE OF EQUINE  
MEDICINE; DISEASES AND DISORDERS OF THE HORSE; THE  
EQUINE HOSPITAL PRESCRIBER, ETC.

*THIRD EDITION*

ENLARGED AND REVISED BY

**GEORGE GRESSWELL, M.A., OXON.**

L.R.C.P. & S.E., L.F.P.S.G.

AUTHOR OF THE VETERINARY PHARMACOPEIA; DISEASES AND DIS-  
ORDERS OF THE OX, ETC.



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To

PROFESSOR W. ROBERTSON, F.R.C.V.S.,

PRINCIPAL OF THE ROYAL VETERINARY COLLEGE, LONDON,

THIS CONTRIBUTION TO BOVINE MEDICINE

IS

Very Respectfully Inscribed

IN GRATEFUL RECOGNITION OF MANY KINDNESSES AND IN

ADMIRATION OF THE PROMINENT PART PLAYED

BY HIM IN THE ADVANCEMENT OF

VETERINARY SCIENCE.

BY

THE AUTHORS.



## PREFACE TO THE SECOND EDITION.

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CONSIDERABLE enlargement, as well as some alteration, make this production almost a new work. An effort has been made to apply the latest results of scientific research to the treatment of the maladies of oxen. If the immense importance of these animals, as at once the sources of our milk-supply, and of much of the meat which we consume, be considered, it will be obvious how very important a knowledge of the best remedies for the various diseases to which they are liable to be subjected must be.

One of the chief points of peculiarity in regard to the action of medicines on Ruminants (to which group of animals, as everyone knows, the ox and the sheep belong) arises from the complexity of their digestive system. That portion of the alimentary canal, to which the name of stomach is given, is in these creatures divided into no less than four distinct compartments, called respectively the Rumen, Reticulum, Omasum, Abomasum or Manyplies. These four parts are, moreover, extensively lined with a cuticular mucous membrane, and the first three cavities are less vascular than the last, and they have, in fact, rather a mechanical than a digestive function. Again, the first and the last, *i.e.*, the rumen and the manyplies, are never empty, but always contain food—

often in large amount. It is in the fourth stomach that true digestion takes place. Hence it comes about that cattle require large doses of nearly all medicines. For instance, whereas a drachm of Epsom salts will suffice for a man, an ox will require about sixteen ounces, *i.e.*, 128 times as much. The intestinal tract of an ox is, so to speak, protected at the outset, and is not so easily acted upon, as is that of other animals, and, since all medicines given by the mouth pass through that conduit to some extent at least, the same result follows in regard to other remedies also.

The prescriptions given are made up—except when otherwise stated—for adult oxen. Sheep are acted upon in a very similar manner, provided that about one-fifth or one-sixth of the dose be given. In order to give medicine to a sheep, the animal should be backed into a corner and the head be held firmly between the knees, whilst the medicine is carefully administered. Special care is necessary, lest they choke, and this caution is also applicable in the case of oxen, and indeed of all animals.

Should it be desired to prescribe for sheep, some hints may be gathered from this book. Although the formulæ are made for oxen, it is to be remembered that an adult sheep will generally take about one-fifth of the dose necessary for an ox, and that lambs will, of course, require very much less than this. Judgment is requisite in apportioning the quantities of medicines, and when one is in doubt, it is always best to err on the safe side, and be content with giving a small rather than a large amount. When more than one prescription is mentioned under the same disease, the different draughts are to be considered alternative, and the reader should, after careful perusal, decide which mode of treatment he thinks most

suitable in any given case. When two or more different remedies are required, this is specially stated. This little book does not pretend to give full information of the various diseases and disorders to which cattle are liable. For more complete knowledge the authors would respectfully refer the reader to a work entitled 'The Diseases and Disorders of the Ox,' by George Gresswell, published by Wm. H. Allen and Co.

The letters 'V.P.' refer to 'The Veterinary Pharmacopœia' (by the same author, and published by Baillière and Co.). This is of some importance in certain cases. For instance, the tincture of aconite mentioned in that work is the same as that of the British Pharmacopœia, and very different from that known as Fleming's tincture, which, being about five times as strong, must therefore be used with the greatest possible caution. It is always advisable, especially in the case of the more potent drugs, to use the milder preparations.

For the benefit of those who are not thoroughly conversant with the technical names of preparations, a Pharmacopœia (either the B.P. or the V.P.) should always be at hand whilst one is mixing medicines, for the sake of reference, if required. Otherwise very serious mistakes may arise, such as, for example, the use of chloroform, instead of spirit of chloroform, and similar errors of a disastrous nature may assail the beginner, and probably lead to very bad results. There is indeed no science which requires greater judgment, care, and accuracy than that of prescribing for the numerous maladies to which animals are liable, except, indeed, that of human medicine, which is, of course, still more difficult.

To lovers of strict compatibility in prescriptions, we

would beg to point out that in cases where the absence of this characteristic may be found, the want of this quality is no bar to their efficacy, since the combinations formed are those really wished for.

Finally, the only statement remaining is that, whilst thanking our reviewers and readers for past favours, we hope to meet with a continuance of that kind consideration which has always been accorded to our efforts by the press, the profession, and the public.

GEORGE GRESSWELL.

KELSEY HOUSE, LOUTH, LINCOLNSHIRE,  
*December 21, 1893.*



## PREFACE TO THE FIRST EDITION

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IT is sincerely hoped by the authors that 'The Bovine Prescriber' may prove no less useful to practitioners and students of veterinary medicine than 'The Equine Hospital Prescriber,' a work recently published for us by Messrs. Baillière, Tindall and Cox, and written upon the same plan as this our latest production in the field of Veterinary Science. We may even be excused for supposing that it will be received with still greater favour by those to whom it appeals for support, inasmuch as the need for careful and scientific work is far greater in bovine than in equine practice. Indeed, it is scarcely too much to say that the science of therapeutics as applicable to cattle is as yet in its infancy. Many causes conduce to this backwardness in cattle practice, the chief of which is, perhaps, the smaller value of oxen than of horses. Yet, as time goes on, our methods of prevention and cure will become greater, in due proportion to the advance which is in these days being made so rapidly and surely in all departments of inquiry, and the veterinary surgeon who really takes in hand to learn thoroughly all that can be acquired in the field of bovine medicine and surgery, a field as yet

almost untrodden except by the few, may feel assured of a rich reward.

The farmer, too, will become more and more convinced as years go on that many cases which are now summarily consigned into the butcher's hands would be more profitably given over to the care of the cultured and careful scientist, who will be able to tell him almost at a glance what are the relative advantages and disadvantages of treatment as opposed to slaughtering; and when he would be well advised to avoid the risk of a lingering illness or a possible fatal termination, whereby the loss would be made twofold. In short, the two classes will find their mutual benefits enhanced in proportion as bovine medical science advances in accuracy and precision. More than that, the great work of Science as a whole will be advanced by those who study specially the diseases and disorders of cattle, and the means by which they may be prevented or remedied. It is not too much to say that Bovine Medicine takes a rank second to no other veterinary branch in regard to its influence on medicine at large. If, owing to a long experience of nearly fifty years of ourselves and the late Mr. D. Gresswell, we have been enabled to help this science onwards in any degree, we shall be thankful.

In prescribing aconite we have discarded the use of Fleming's Tincture, not because we have any fault whatever to find with it, but because mistakes are apt to arise from want of uniformity. We have, therefore, always referred in this work to the Tincture of the British Pharmacopœia. Also in the case of acetate of ammonium, we have invariably recommended the preparation known in the B.P. as the *Liquor Ammonii Acetatis*. If the stronger solution, which is five times

as strong, is used, a proportionately small dose must of course be given. It seems preferable, as a rule, to use the more highly diluted preparations.

We have to acknowledge the very kind help and valuable suggestions of Mr. George Gresswell, author of 'The Veterinary Pharmacopœia,' etc., who has revised and corrected the whole work where it was necessary, and has added portions here and there.

ALBERT GRESSWELL,

KELSEY HOUSE, LOUTH, LINCOLNSHIRE.

JAMES BRODIE GRESSWELL,

VETERINARY INSTITUTE, LOUTH, LINCOLNSHIRE.

*September 23, 1886.*



# THE BOVINE PRESCRIBER.

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## **Abdomen, Dropsy of the.**

(a) Spirit of nitrous ether, two fluid ounces.

Water, six fluid ounces.

(b) Paracentesis abdominis in suitable cases.

The puncture is made with a small trocar and canula midway between the umbilicus and the symphysis pubis. It is not often the case that this treatment is required.

(c) Salts of iron, given alternately with vegetable tonics or digitalis.

## **Absorbent Ointment for Drying Cows' Udders.**

White lead, two and a half pounds.

Acetate of lead, ten ounces.

Alum, ten ounces.

Palm-oil, seven pounds or a sufficient quantity.

Colour with rose-pink.

## **Acarus Scabiei (causing Mange).**

First wash the skin thoroughly with soft soap and warm water. Tar or infusions of stavesacre or of tobacco may be used. The best remedy is sulphur ointment, made as follows :

Sublimed sulphur, one part }  
Benzoated lard, four parts } Mix well.

This ointment should be well applied, if possible, every other day, or twice or thrice weekly, for a long period,

over the whole of the affected parts and neighbouring regions. Mange cannot be cured except by frequent applications continued over a long space of time.

Another preparation is as follows :

Sulphur, one ounce (or eight parts).

Oil of stavesacre, one fluid drachm (or one part).

Lard, two ounces (or sixteen parts).

Another is as follows :

Oil of tar

Oil of turpentine } Equal parts. Mix well.

Linseed-oil

Wash the skin thoroughly every day with carbolic soap and warm water, and then rub the preparation into the skin with a brush (*Dobson*).

### **Aconite Poisoning.**

Spiritus ammoniaë aromaticus, two fluid ounces.

Brandy, four fluid ounces.

Give in a pint of gruel, and repeat at intervals of two hours, or more frequently.

### **Actinomycosis.**

This disease is caused by a fungus of the genus *Actinomyces*, and it has been found in man, pig, and ox. The tumours are generally found near the mucous or cutaneous surfaces, and especially occur in the bones of the jaw, tongue, pharynx, larynx, gullet, teats, lungs, skin, soft parts of face and neck, and in the tissue round the pharynx.

(a) Local treatment :

#### *Mixture.*

Iodine, one part.

Carbolic acid, four fluid parts.

Glycerine four fluid parts.

The affected part (*e.g.*, of the tongue) may be, when advisable, carefully incised, and the above mixture is then to be applied by means of a brush to the sides of the hardened tumours. Sometimes, instead of tumours, however, cold abscesses may form, and these should, where practicable, be first thoroughly opened and the pus removed.

In the place of the above mixture, simple tincture of iodine may be used, or it may be diluted with an equal portion of methylated spirit.

#### *Gargle.*

Acid solution of nitrate of mercury, eight minims.

Water, one fluid ounce.

This gargle may be applied to the diseased tongue after the tumours have been incised.

(*b*) Internal treatment :

Tonics or suitable germicidal agents.

#### **Adynamia Nervosa Generalis, or Pre-Parturient Adynamia.**

This name is given to that nervous debility which affects some cows at the latter period of pregnancy. There is loss of power to rise, the skin is cold, the pulse weak, and the bowels may be constipated. It may be due to pressure of the uterus on the posterior aorta, interfering with the blood-supply to the hind-legs.

#### *Draught.*

Solution of hydrochlorate of strychnine, two fluid drachms.

Tincture of perchloride of iron, half a fluid ounce.

Water up to eight fluid ounces.

This draught may be given twice daily. The treat-

ment should begin with a good cathartic dose (*vide Cathartics*).

### **After-Pains.**

These pains may, if severe, indicate the retention of foetal membranes, injury of the uterus, or even a stoppage in the bowels. If they are due to retention, ergot should be given ; if to slight injury, cleanliness and rest will be best treatment, coupled with the draught given below ; whilst if the pains are caused by constipation, a cathartic should be administered.

#### *Draught.*

Tincture of opium, one fluid ounce.

Spirit of chloroform, one fluid ounce.

Water to make one pint.

Give twice daily for a day or two, as may be necessary.

### **Agalactia, or Non-Secretion of Milk.**

#### *Draught.*

Powdered aniseeds, two ounces.

Powdered gentian, two ounces.

Mix in a pint of warm water or beer, and give twice or thrice daily. If the cow be healthy in other respects, the diet should be full and nutritious. However, a cessation of the secretion is frequently one of the symptoms of some general disease ; whilst if, on the other hand, the mammary gland be greatly wasted, treatment is not likely to be of much value.

### **Albuminuria.**

#### *Draught.*

Sulphate of sodium, sixteen ounces.

Powdered caraway seeds, half an ounce.

Give the above in a pint of warm water or gruel ; and



on the following day vegetable tonics should be commenced, and administered twice or thrice daily.

### **Alopecia, or Falling-off of the Hair.**

This condition may sometimes be cured by cleanliness coupled with repeated mild stimulation, such as by tincture of cantharides, and attention to the general health, food-supply, and the action of the bowels should not be overlooked. Moreover, there may be some primary cause, which should be discovered and attended to. For instance, some parasitic or other kind of skin disease may be at the root of the mischief.

### **Amaurosis (Paralysis of the Retina).**

This condition of deficient vision is not frequent in the ox. When it results from anæmia or general debility, attention should be given to the food-supply, and any of the draughts mentioned under **Anæmia** may be tried.

### **Anæmia.**

#### *Draughts.*

- (i.) Powdered gentian, an ounce and a half.  
Powdered ginger, half an ounce.  
Granulated sulphate of iron, two drachms.  
Powdered nux vomica, thirty grains.  
Powdered capsicum, half a drachm.

The above may be given twice daily in a pint of warm water, gruel, or ale. If the bowels should be constipated, a laxative will be requisite.

- (ii.) Powdered gentian, one ounce.  
Powdered ginger, half an ounce.  
Carbonate of ammonium, half an ounce.  
Carbonate of iron, two drachms.
- W. H. W.*

Administer twice daily in a pint of warm water, gruel, or ale.

(iii.) Solution of hydrochlorate of strychnine, two fluid drachms.

Tincture of capsicum, four fluid drachms.

Tincture of perchloride of iron, one fluid ounce.

This should be given only once daily, in a pint of warm water or gruel.

### **Anæsthetics.**

(a) General :

*Inhalation* of chloroform.

From three to six fluid ounces, or even more, are generally requisite in order to produce total anæsthesia in cattle. This is not often necessary in the case of oxen.

(b) Local :

*Application* of hydrochlorate of cocaine.

(i.) In the case of an operation on the eye.

Hydrochlorate of cocaine, two to four parts.

Water, one hundred fluid parts.

(ii.) In the case of an operation on any part other than the eye.

Hydrochlorate of cocaine, four to twenty parts.

Water, one hundred fluid parts.

### **Angleberries.**

These tumours may be removed by means of the clam and actual cautery. The clam is fixed round the base of the tumour, which is then burnt off with the cautery. Any bland or soothing ointment or black-oil is useful as an after-dressing.

**Anthrax.**

This is one of the most important of the germ diseases which affect cattle. It is communicable to other animals and also to human beings, and is a very deadly disorder; it is due to the presence of the *Bacillus anthracis* in the blood, wherein it multiplies rapidly, and may cause death in a few hours or days. These bacilli have been found in the soil of meadows well known for their liability to produce this malady. They are, when injected into the blood, productive of the disease. As a rule, they probably enter the blood through slight wounds in the mouth produced by the food.

*Draught* (antiseptic and antipyretic).

Sulphite of sodium, three drachms.

Salicylate of sodium, three drachms.

Tincture of aconite (B.P.), forty minims.

Water, q.s.

Administer every four hours.

*Draught* (antiseptic).

Liquefied carbolic acid, thirty minims.

Gentian, two ounces.

Aniseeds, two ounces.

This draught may be given every four hours, mixed in a pint of water.

N.B.—It is to be observed, however, that in cases of an outbreak of this disease, the only admissible course to be taken, having regard to the immense danger of a spread not only to other animals, but even to mankind, is that the animals should be immediately shot, and buried, with antiseptic precautions, at a good depth. Great care, too, should be exercised in handling the

carcasses, and it should be remembered that the blood of such animals is exceedingly liable to convey the infection. There would be great danger of being attacked by the disease if any risk be run, and although we have inserted two draughts above, we must reiterate that in all cases of undoubted anthrax no treatment should on any account be carried out, but the animals should be at once shot to obviate a spread of this dreadful malady.

### **Antiseptics.**

(a) Internal :

#### *Antiseptic Powders.*

- (i.) Sulphur, one pound.  
Sulphite of sodium, one pound.  
Milk of sulphur, one pound.  
Fenugreek, one pound.  
Aniseeds, one pound.

Two tablespoonfuls to be given thrice daily in the food or water.

- (ii.) Sulphur four pounds.  
Sulphite of sodium, four pounds.  
Carbonate of sodium, one and a half pounds.  
Carbonate of iron, a quarter of a pound.  
Tonics, three pounds.

One tablespoonful to be given twice or thrice daily in the food.

#### *Draughts.*

- (i.) Sulphite of sodium, three drachms.  
Salicylate of sodium, three drachms.  
Water, a sufficient quantity.
- (ii.) Salicylate of sodium, two drachms.  
Brandy, eight fluid ounces.  
Water, a sufficient quantity.

(iii.) Carbolic acid, thirty minims.

Brandy, one pint.

May be given twice daily, if necessary

(iv.) Carbolic acid, thirty minims.

Glycerine, half a fluid ounce.

Mucilage of acacia, ten fluid ounces.

(b) Local :

#### *Lotions.*

(i.) Carbolic acid, one fluid part.

Glycerine, one fluid part.

Water, twenty to thirty fluid parts.

(ii.) Boric acid, one part.

Hot water, twenty fluid parts.

(iii.) Perchloride of mercury, one part.

Water, from five hundred to eight hundred fluid parts.

This last lotion is of great value for foul sores and ulcers. It is also destructive of lice, and of the scab *acarus*, and of the fungus of ringworm. This solution is very poisonous, and hence great care is necessary, and it should not be left about, for fear of mistakes arising. It should be labelled 'Poison.'

(iv.) Sulphite of sodium, half a fluid ounce.

Carbolic acid, one fluid drachm.

Rectified spirit, one fluid ounce.

Water to make one pint.

#### *Ointments.*

(i.) Boric acid, one part.

Vaseline, three parts.

Lard, three parts.

- ii.) Iodoform, twenty grains.  
Oil of eucalyptus, twenty minims.  
Carbolic acid, twenty minims.  
Lard or vaseline, one ounce and a half.
- (iii.) Carbolic acid, one part.  
Lard or vaseline, thirty parts.

### Antipyretics.

#### *Draughts.*

- (i.) Salicylate of sodium, four drachms.  
Tincture of aconite (B.P.), thirty minims.  
Spirit of nitrous ether, one fluid ounce.  
Water, twelve ounces.

This draught may be repeated at intervals of four hours if the temperature be still elevated.

- (ii.) Salicylic acid, three drachms.  
Tincture of aconite (B.P.), forty minims.  
Spirit of nitrous ether, one fluid ounce.  
Water, twelve ounces.

This draught may be repeated at intervals of four hours if necessary.

### Antispasmodics.

#### *Draughts.*

- (i.) Oil of turpentine, one fluid ounce.  
Tincture of opium, one fluid ounce.  
Spirit of chloroform, half a fluid ounce.  
Water, to make one pint.

This draught may be given in half a pint of thin gruel instead of the water, and it may be repeated at intervals of three or four hours, if the pain still continues.

- (ii.) Ether, two fluid ounces.  
Spirit of chloroform, one fluid ounce.  
Tincture of pimento, two fluid ounces.

Administer in a pint of thin gruel, and repeat at intervals of three or four hours, if need be.

N.B.—It is not wise to give ether to cattle, when it may ultimately be desired to use the meat for food.

### **Aperients.**

- (i.) Sulphate of magnesium, twelve to sixteen ounces.  
Powdered ginger, half an ounce.

This mixture may be given in a pint of warm water (best).

- (ii.) Sulphate of sodium, sixteen ounces.  
Powdered caraway seeds, half an ounce.

Give in a pint of warm water. (Not quite so reliable.)

- (iii.) Castor oil, two pints.

### **Aphtha.**

(a) Internal treatment :

#### *Draughts.*

- (i.) Chlorate of potassium, four drachms.  
Water, eight fluid ounces.

This draught may be given three or four times daily. It is best to begin treatment with a good dose of aperient medicine, as (i.) under **Aperients**.

- (ii.) Tincture of perchloride of iron, one fluid ounce.  
Diluted hydrochloric acid, two fluid ounces.  
Glycerine, half a fluid ounce.  
Water, to make ten fluid ounces.

Thrice daily, if required.

(b) Local treatment :

*Gargles* (all of which may be used several times daily).

(i.) Boric acid, one part.

Glycerine, five fluid parts.

Water, eleven fluid parts.

(ii.) Acid solution of nitrate of mercury, eight minims.

Water, one pint.

(iii.) Permanganate of potassium, eight grains.

Water, one pint.

### **Aphtha Epizoötica.**

(a) Internal treatment :

*Draughts.*

(i.) Salicylate of sodium, three drachms.

Spirit of nitrous ether, one fluid ounce.

Water, four fluid ounces.

Twice daily.

(ii.) Sulphite of sodium, three drachms.

Water to make eight fluid ounces.

Twice or thrice daily.

*Powder.*

Sulphite of sodium, three drachms.

Aniseeds, one ounce.

Fenugreek, one ounce.

This powder may be mixed in the food twice or thrice daily, and it is rather preferable to the administration of draughts.

(b) Local treatment :

*Gargles.*—See **Aphth**

*Ointment.*

For the affected feet and teats, either the ointment of boric acid or that of carbolic acid, or, better still, that



of iodoform, eucalyptus, and carbolic acid, may be used. Ointment of salicylic acid is also excellent, but sometimes a little too irritating when applied to very tender parts.

### **Aphtha Epizoötica affecting Sucking Calves.**

#### *Draught.*

Sulphate of sodium, two drachms.

Salicylic acid, two drachms.

Water, eight fluid ounces.

Give one tablespoonful twice or thrice daily.

### **Apoplexy.**

In cases of this disease, as a rule, the prognosis is so unfavourable that it is wisest to advise slaughter. If, however, the animal be seen in the first stage of dulness, and treatment be decided upon, the best is to try a very strong cathartic, coupled with free bleeding, and the application of a powerful embrocation to the loins and spine.

### **Apoplexy, Parturient** (Parturient Apoplexy, or Milk-Fever).

In the first instance it is best to administer a cathartic; for example, a

#### *Mixture.*

Sulphate of sodium, sixteen ounces.

Solution of aloes, eight fluid ounces.

Mix in a pint of gruel, and give whilst warm. This should be followed by the administration of a pint of brandy and seven pounds of treacle. It is also of the highest importance that the urine should be drawn off

with a catheter. In addition, one of the following should be given :

*Draughts.*

(i.) Carbonate of ammonium, one drachm.

Powdered ergot, one ounce.

This draught should be given, together with six fluid ounces of brandy or whisky, in a pint of warm water every four hours.

(ii.) Carbonate of ammonium, three ounces.

Gentian, three ounces.

Ginger, three ounces.

Aniseeds, twelve ounces.

Oil of turpentine, three ounces.

Mix the above ingredients, and divide into six drenches, and give one every three hours mixed in a pint of warm gruel.

(iii.) Oil of turpentine, half a fluid ounce.

Aromatic spirit of ammonia, two fluid ounces.

Oil of lavender, three minims.

Water to make one pint.

Give every three hours.

*Hypodermic Injection.*

Injectio ergotini hypodermica (B.P.), fifty to sixty minims.

The above hypodermic injection of ergotin, of which the dose mentioned is equivalent to about twenty-eight grains of ergot, may be employed when ergot is not given with the stimulating draught above prescribed. It is to be remembered that the hypodermic injection of ergotin is the most rapid and effectual method of introducing ergot into the system.

*Liniment.*

Liniment of ammonia, one fluid part.

Compound liniment of camphor, one fluid part.

This liniment may be rubbed on the spine frequently ; but it is to be remembered that liniment of belladonna should *not* be used, because of its absorbent effect on the mammary and other glands.

*Wet Pack.*

The wet pack, carefully applied, acts as an efficient sudorific, and the temperature may also be much reduced by this agent. It is a very valuable adjunct to the internal treatment, and should not be omitted.

**Apoplexy, Splenic** (Splenic Apoplexy).

This disease is the same as **Anthrax**. See page 7.

**Arsenical Poisoning.**

When acute, the condition may be treated as follows :

*Draught.*

Hydrated sesquioxide of iron, four to six drachms.

Water, q.s.

This draught may be repeated at intervals of three or four hours, until about four or five doses have been taken. The hydrated sesquioxide of iron must be used freshly prepared.

**Arthritis.**

Salicylate of sodium, or acetate of ammonium, or both these salts in suitable doses, and in conjunction with bicarbonate of potassium, may be tried. Flannel ban-

dages may be wrapped round the swollen joints. Should the swellings become chronic, preparations of iodine (the tincture or the compound ointment of iodine) or ointment of cantharides may be applied.

### **Arthritis, Scrofulous.**

#### *Draught.*

Granulated sulphate of iron, two drachms.

Phosphate of calcium, four drachms.

This remedy may be given in a pint of water twice or thrice daily.

#### *Liniment.*

Oil of turpentine, eight fluid ounces.

Strong solution of ammonia, three fluid ounces.

Soft soap, four ounces.

Digest, and then shake at intervals, and add water to make two quarts of liniment. The embrocation may be applied to the affected joints once or twice daily.

### **Ascites, or Dropsy of the Abdomen.**

This is a condition of an animal in which fluid is present in the abdominal cavity. The disease is the consequence of general debility, or of some mechanical impediment to the return of venous blood to the heart, caused, perhaps, by diseases of that organ or of the liver, or by the pressure of a tumour upon the vena portæ. The abdomen is distended, and if one hand be placed upon the body, whilst the opposite side is percussed, a wave of fluid may be detected.

The strength should be maintained with stimulant tonics. Salts of iron, given alternately with vegetable

tonics or digitalis, may be tried, and in certain cases paracentesis abdominis may be carried out, the puncture being made with a small trocar and canula midway between the umbilicus and the symphysis pubis.

**Astringents.**—See also **Diarrhœa.**

(a) Internal treatment :

*Mixtures* (for adult animals).

- (i.) Pulv. opii, ʒii.  
 Pulv. catechu, ʒii.  
 Pulv. galls, ʒiii.  
 Sulphate of iron, ʒii.  
 Prepared chalk, ʒi.  
 Ginger, ʒ ss.  
 Gentian, ʒi.

Add sufficient water, mixed with four ounces of starch dissolved in it to make one pint in all, and administer when the mixture is cool.

- (ii.) Pulv. opii, ʒii.  
 Bismuthi subnit., ʒiv.  
 Powdered starch, ʒiv.

Add boiling water to make two pints.

*Mixture* (for calves).—See ‘Calf and Foal Cordial’ in ‘The Equine Prescriber.’

(b) External treatment :

*Lotion.*

Sulphate of copper, five drachms and twenty grains.  
 Water, eight fluid ounces.

This lotion may be applied to discharging sores.

*Ointment.*

Oxide of zinc, one drachm.  
 Lard, one ounce.

Application for ulcers.

**Bezoars, or Calculi.**

These may be present in the abomasum of sheep. In past times it was believed that they were produced by magic, and persons were actually sent to the galleys because they were supposed to be at the root of the mischief. They were also supposed to possess wonderful virtues in regard to the cure of human ills. For instance, they were thought to be effective against the poison of the viper and scorpion, against vertigo, epilepsy, dysentery, pneumonia, malignant fever, the plague, and leprosy. These bezoars may be found in every species of deer and antelope, in the elephant, rhinoceros, and porcupine. Some from the elephant and porcupine have been sold for the extravagant sum of £800. They are not very harmful. There may be one, or as many even as sixteen. They are most usually found in September and October, this being the time of moulting in the sheep. The skin feeling irritable, the sheep lick and gnaw themselves at this period, and thus swallow a great deal of wool. These bezoars are never discharged by the intestines. They will burn, and are soluble in boiling water.

**Bites and Stings (of Bees, Wasps, Scorpions, etc.).***Lotion.*

Carbolic acid, one fluid part.

Glycerine, one fluid part.

This lotion may be used as it is, or diluted with water, and it may be very beneficial in causing subsidence of the swelling and irritation caused by the wound. Of course, great care will be necessary on the part of the attendant, in applying the above strong preparation, not to let it come into contact with his own flesh. The

liquefied carbolic acid of the V.P. may be used in its undiluted form. Likewise, solution of ammonia, and also iodoform in powder, or a very strong solution of permanganate of potassium, are very useful. If the animal by whom the bite has been inflicted be really rabid, strict isolation and slaughter of both animals ought to be carried out, so that that dreadful disease, rabies, may not be propagated.

#### **Black Hellebore, Poisoning by.**

The black hellebore is sometimes used as a counter-irritant dressing for setons inserted in the dew-lap. This practice is a very bad one. In a case of extreme inflammation set up by this means, the swelling should be fomented, and a full purgative dose given.

#### **Black Leg, or Black Quarter.**

This is a germ-disease of an anthracoid character—*i.e.*, allied to anthrax, probably, or at any rate of like type.

##### *Draught.*

Sulphite of sodium, one drachm.

Salicylate of sodium, one drachm.

Water, q.s.

This draught may be given every six hours.

##### *Preventive Treatment.*

Setoning is frequently carried out. It may be the case that the germs of the above disease gain entrance into the system by the medium of the air, so that, if this explanation be correct, setoning is in reality tantamount to a mild or attenuated inoculation. Possibly it may not be the actual virus of black quarter which thus enters, but rather some germ which acts as a protective

agent, just as vaccination has an antagonistic power against small-pox. The setons should be dressed with black-oil.

### **Bladder, Inflammation of the (Cystitis).**

#### *Draught.*

Bicarbonate of potassium, one ounce.

Tincture of opium, one fluid ounce.

Tincture of aconite (B.P.), forty minims.

Water, q.s.

This draught may be given thrice daily. The bowels must also be attended to, and fomentations may be tried. Buchu is also a useful remedy.

**Blain.**—See **Glossanthrax.**

### **Bleeding, or Hæmorrhage.**

#### *Draughts.*

(i.) Tincture of perchloride of iron, one fluid ounce.

Diluted hydrochloric acid, four fluid drachms.

Glycerine, two fluid ounces.

Water, q.s.

(ii.) Powdered ergot, one ounce.

Powdered galls, two ounces.

These two powders should be well mixed, and then given in a pint of warm water. The dose may be repeated at intervals if necessary.

(iii.) Oil of turpentine, one fluid ounce.

Fluid extract of ergot, half a fluid ounce.

Linseed-oil, four and a half fluid ounces.

This draught may be given twice daily, and afterwards followed up with sulphate of iron and tonics. The value of turpentine and ergot in cases of bleeding has been proved by much experience.



**Bleeding, Post-partum.**

(a) Internal treatment :

*Draught.*

Powdered ergot, one to two ounces.

This powder may be given in a pint of warm water, and repeated every one or two hours.

*Hypodermic Injection.*

Injectio ergotini hypodermica, one fluid drachm.

This may be injected at intervals of one to two hours. (Gresswell's V.P., p. 209.)

(b) Local treatment :

Application of cloths soaked either in very hot water or in cold water and well wrung out. These should be stuffed in as a plug. On the whole, we prefer that the cloths should be soaked in very hot water. An intra-uterine injection of hot water is also often efficacious.

**Blisters.**

(i.) *Blistering Liniment.*

Powdered cantharides, one ounce.

Olive-oil, eight fluid ounces.

Digest over a hot bath.

(ii.) *Absorbent Blistering Liniment.*

Iodine, one ounce and a quarter.

Iodide of potassium, half an ounce.

Camphor, two drachms.

Methylated spirit, half a pint.

This liniment is to be applied by means of a brush.

(iii.) *Mustard Liniment.*

Mustard, four ounces.

Oil of turpentine, five fluid ounces.

Digest these two ingredients together for ten days, and then add a sufficient quantity of linseed-oil.

(iv.) *Blistering Ointments.*

(1) Bromide of mercury, one pound.

Olive-oil, one pint.

Mix well, and add seven pounds of melted lard.

(2) Lard, four pounds.

Resin, four pounds.

Powdered cantharides, one pound.

Mix thoroughly.

(3) Powdered cantharides, one part.

Venice turpentine, one part.

Resin, one part.

Palm-oil or lard, four parts.

Mix well.

**Blood-poisoning.**

All decomposing material must be removed from the wound, and the utmost cleanliness enjoined and practised. Locally, a solution of permanganate of potassium of about five grains to the ounce of water should be applied; whilst internally one should give salicylate of sodium, coupled with other germicidal agents, such as sulphite of sodium, or with antifebrin, if the temperature be much elevated. Stimulants, such as brandy or whisky, should also be given.

**Bloody Flux, or Dysentery.**

This is a disease in which there is inflammation of the lining membrane of the bowels, and also ulceration, and it may follow upon chronic diarrhoea. It may also arise from coarse provender, especially if coupled with undue

exposure to cold; or it may be, perhaps, the result of blood diseases or poisonous agents.

*Draught.*

Ipecacuanha, half an ounce.

Powdered opium, two drachms.

Chalk, two ounces.

Powdered galls, two ounces.

This mixture may be given in a pint of warm water thrice daily.

**Blown.**—See **Tympanites**.

**Bowels, Inflammation of the.**—See **Enteritis**.

If the patient be full-blooded, bleeding should be carried out, and repeated in six hours' time if requisite. As much as a gallon of blood may in severe cases be abstracted. The belly should be stimulated by the application of rugs wrung out from hot water and sprinkled with strong liniment or with turpentine. Thin, warm gruel containing a little linseed-oil may be given. Careful nursing is necessary. The impacted fæces may be removed from the rectum manually, or by other means, and anodyne and mucilaginous enemata may be advantageous.

*Draught.*

Tincture of opium, two fluid ounces.

Tincture of aconite (V.P.), forty minims.

This draught may be repeated at intervals of three or four hours.

**Brain, Inflammation of the.**

In severe cases the best course will be immediate

slaughter; but if it be decided to try treatment, first give a powerful cathartic, and then—

*Draught.*

Hydrate of chloral, three drachms.

Bromide of potassium, three drachms.

Water, q.s.

Give thrice daily.

*Blister.*

Ointment of cantharides. See **Counter-irritants**.

This ointment is to be applied to the poll.

**Braxy.**—See **Anthrax**.

**Bronchitis.**

1. ACUTE.

(a) In early stage: The first thing to give is a cathartic, and then—

*Draught.*

Extract of belladonna, two drachms.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give thrice daily.

(b) In later stage:

*Draught.*

Carbonate of ammonium, three drachms.

Solution of hydrochlorate of strychnine, two fluid drachms.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

Give twice daily.

*Counter-irritants* or *blisters* may be applied locally.  
See **Counter-irritants**.

## 2. CHRONIC.

### *Draught.*

Carbonate of ammonium, three drachms.

Solution of hydrochlorate of strychnine, two fluid drachms.

Spirit of chloroform, half a fluid ounce.

Water, q.s.

Give twice daily.

### **Bronchitis, Verminous ; or Husk or Hoose.**

The draughts under **Anæmia** may be given. The cattle should be removed to fresh pastures, and the food should be good and plentiful. Contaminated fields should be avoided, especially about July, August, and September, in which months the disease is acquired ; and affected animals should be separated from healthy ones. Rock-salt should be provided.

The following plan may be tried in the case of sheep : A small shed may be filled with the fumes arising from burning sulphur, and the affected sheep made to pass through, one after the other. Thus, for the few moments occupied in walking in and out, the sheep will breathe this potent gas, which will thus come into contact with the worms contained in the bronchial tubes. They must not be allowed to remain in for longer than a few moments, lest they should be choked. It would be always best to try how the plan answers with about half a dozen sheep before extending it to the whole flock or herd. If it seems to have been productive of good results, the treatment may be repeated after a few days.

*Draught.*

Oil of turpentine, one fluid ounce.

Linseed-oil, nine fluid ounces.

Give once or twice daily.

*Intra-tracheal Injection.*

Oil of turpentine, two fluid drachms.

Carbolic acid, twenty minims.

Tincture of opium, one fluid drachm.

Instead of the tincture of opium, half a drachm of chloroform may be used (*Penhale*).

*Fumigations.*

1. The fumes of burning sulphur (dioxide of sulphur, or anhydrous sulphurous acid).
2. The fumes of burning iodine.
3. Chlorine gas, generated by the action of sulphuric acid on salt mixed with a little manganese dioxide.
4. Nascent hydrochloric acid, generated by the action of sulphuric acid on salt or on chloride of calcium.
5. Carbolic acid in the form of vapour or spray.

**Broncho-Pneumonia, Lobular or Catarrhal Inflammation of the Lungs, or Capillary Bronchitis.**

This malady results from an extension of bronchitis into the pulmonary vesicles, and a serous effusion into the interlobular tissue occurs, so that the lungs in an acute case have a sodden look.

(a) In early stage :

*Draught.*

Extract of belladonna, two drachms.

Carbonate of ammonium, three drachms.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give thrice daily.

(b) In later stage :

*Draught.*

Carbonate of ammonium, three drachms.

Solution of hydrochlorate of strychnine, two fluid drachms.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

Give twice daily.

*Counter-irritants.*

**Burns.**

*Local Application.*

Solution of lime, one fluid part.

Olive-oil, one fluid part.

**Bursal Enlargements.**

*Ointment.*

Biniiodide of mercury, one pound.

Olive-oil, one pint.

Mix well, and add seven pounds of melted lard.

**Cachexia Ossifraga Malacia, or Cripple.**

This disease, like fragilitas ossium, depends on malnutrition of the bones. It may be due to a diminution of animal constituents or to an excessive earthy deposit. It is enzoötic in certain districts, and affects milch-cows more particularly, owing, no doubt, to the excessive removal of phosphates by the milk. A deficiency of

phosphates in the soil may occasion it, and this state of things may be brought about by overstocking the land.

In this disease, then, the obvious indication is to supply the animal with good and nutritious food, and to give some such medicine as this :

*Draught.*

Phosphate of lime, four drachms.

Sulphate of iron, two drachms.

Powdered gentian or calumba, sufficient to make three ounces.

Give in a pint of water twice daily.

**Carbuncle.**

*Draught.*

Powdered nux vomica, thirty grains.

Carbonate of ammonium, two drachms.

Carbonate of iron, two drachms.

Gentian, one ounce.

Give twice daily in a pint of warm water, gruel, or beer.

*Local Application.*—See **Antiseptics.**

**Carditis, or Inflammation of the Muscular Tissue of the Heart.**

This affection may accompany endocarditis or pericarditis. The muscular substance of the heart may also be inflamed in the neighbourhood of a deposit of new tissue or a seat of injury.

**Catarrh (Flux from the Nostrils).**

This condition is due to congestion, or more generally to inflammation, of the Schneiderian membrane of the nostrils, and as a rule the mucous membrane of the



nasal sinuses, pharynx and larynx, is also sooner or later involved. It is more frequent in young beasts, and in the spring, and sometimes it assumes an epizootic form, and may then be called influenza. If not checked, the complaint may lead to more serious complications, or rather extensions, such as bronchitis, broncho-pneumonia, etc.

*Draught.*

Solution of acetate of ammonium, four fluid ounces.

Bicarbonate of potassium, one ounce.

Spirit of chloroform, half a fluid ounce.

Water, q.s.

Give twice or thrice daily.

**Catarrh, Malignant.**

This is a specific febrile disorder, but does not seem to be in a marked degree contagious. The visible mucous membranes are purple and dry, and in later stages ulcerate. The eyelids are swollen, there is a painful cough, and profuse discharge from nose, eyes and mouth, which afterwards becomes purulent. There is extreme prostration, and the animal dies asphyxiated, if a fatal issue supervenes.

*Draught.*

Tincture of perchloride of iron, one fluid ounce.

Salicine, one drachm.

Simple syrup, four fluid ounces.

Water, q.s.

Give thrice daily.

*Gargles.*

(i.) Acid solution of nitrate of mercury, thirty-six minims.

Water, six fluid ounces.

- (ii.) Permanganate of potassium, twenty-four grains.  
Water, six fluid ounces.

### Cathartics.

In all animals the value of aperient medicines is very great indeed. It may be said to be the most essential of all medicinal measures to ensure that the bowels are open. Especially in the case of oxen is this primary fact never to be lost sight of, for it is of the very utmost importance. In the case of all inflammations, except that of the bowels themselves, a full cathartic dose should be given.

(a) Mild :

- (i.) Sulphate of magnesium, twelve to sixteen ounces.  
Powdered ginger, half an ounce.

Give mixed in a pint of warm water.

- (ii.) Sulphate of sodium, sixteen ounces.  
Powdered caraway seeds, half an ounce.

Mix with a pint of warm water.

- (iii.) Castor-oil, two pints.

(b) Strong :

- (i.) Sulphate of magnesium, sixteen ounces.  
Powdered aloes, eight drachms.  
Powdered ginger, half an ounce.

Mix and give with a pint of warm water or gruel.

- (ii.) Castor-oil, two pints.  
Croton-oil, half a fluid drachm.

- (iii.) Gamboge, half an ounce.  
Aloes, half an ounce.  
Ginger, half an ounce.  
Powdered croton bean, one drachm.

Mix, and give in a pint of warm water.

(c) Very strong :

- Intravenous injection of sulphate of eserine.

This powerful drug, in a dose of from one grain to one grain and a half, dissolved in water, may be injected intravenously in cases of very protracted constipation. It is necessary to employ this remedy, only in extreme constipation, with the utmost caution, and if the animal should die, the flesh is not fit for human food. This, then, is of itself a great obstacle to its use in cattle practice.

### **Cattle Plague.**

In the case of this virulent and most infectious disease, which, fortunately, but very seldom makes its appearance in the British Islands, owing to the preventive and precautionary measures adopted by the Governments of our own and foreign countries, treatment is not carried out. As in the case of epizootic pleuro-pneumonia and anthrax, the affected animals are killed and buried with rigid antiseptic precautions, in accordance with the law. Should this dreadful scourge again at any time break out in England, it would be necessary to stamp it out at once with a firm hand, so as to prevent it making any headway.

### **Charbon.**—See **Anthrax.**

This disease should also be stamped out at once by slaughter of all affected animals, and immediate burial of the carcasses at a good depth and with rigid antiseptic precautions.

### **Chine-Felon, or Lumbago.**

#### *Draught.*

Carbonate of ammonium, two drachms.

Bicarbonate of potassium, one ounce.

Gentian and ginger, one ounce of each.

These drugs may be mixed with a pint of warm water and given twice daily.

*Liniment.*

Liniment of belladonna  
Compound liniment of ammonia } equal parts.

This liniment is to be well rubbed on the spine, especially in the region of the kidneys.

**Chronic Tympanites.**

After a moderate purgative has been given, vegetable tonics should be administered twice daily, *e.g.*,

Carbonate of ammonium, half an ounce.

Gentian, two ounces.

Nux vomica, one drachm.

Ginger, one ounce.

These drugs may be given, mixed with three gills of warm water or ale, twice daily for several days.

**Cleansing Medicine.**

*Draughts.*

(i.) Sulphate of magnesium, sixteen ounces.

Powdered ergot, one ounce.

Carbonate of ammonium, four drachms.

This draught may be given in two pints of warm water, and repeated on the following day, if deemed necessary.

(ii.) Solution of ammonia, four fluid ounces.

Spirit of turpentine, one fluid ounce.

Solution of aloes, to make eight fluid ounces.

Water, q.s.

**Colchicum Poisoning.***Draught.*

Solution of ammonia, two fluid ounces.

Brandy or whisky, four fluid ounces.

Water, q.s.

This draught may be given at intervals of four hours for three or four times in a pint of gruel or mucilage of linseed.

**Colic.**

(a) Flatulent :

A cathartic should first be given, and this should be followed by—

*Draughts.*

(i.) Solution of ammonia, one fluid ounce.

Spirit of chloroform, one fluid ounce.

Water, q.s.

Give at intervals of four hours.

(ii.) Hyposulphite of sodium, four drachms.

Water, q.s.

Give every four hours; but with the first dose add sixteen ounces of sulphate of magnesium.

(b) Simple :

*Draught.*

Oil of turpentine, half a fluid ounce.

Tincture of opium, one fluid ounce and a half.

Spirit of nitrous ether, two fluid ounces.

Give every three or four hours.

If the bowels be constipated, treatment should be commenced with a cathartic dose. In certain cases bicarbonate of potassium is a useful adjunct to the above draught.

**Collapse.***Draught.*

Whisky, six fluid ounces.

Solution of ammonia, one fluid ounce.

Give in a pint of warm gruel or water.

**Condition Powder.**

Fenugreek, seven parts.

Aniseeds, three parts.

Cumin-seeds, three parts.

Ginger, one part.

Carbonate of iron, one part.

Milk of sulphur, one part.

The dose of this mixture is from two to four ounces.

**Congestion of the Kidneys.**

This condition—precursory to nephritis as it often is—results from some interference with the action of the heart or the pulmonary circulation. It derives importance in so far as it signifies these conditions; and hence it is necessary to give attention to it.

**Congestion of the Liver.***Draughts.*

(i.) Sulphate of sodium, sixteen ounces.

Aloes, four drachms.

This draught should be mixed with a pint of warm water and given, and it should be followed by the administration twice daily of the following:

(ii.) Chloride of ammonium, four drachms.

Spirit of nitrous ether, two fluid ounces.

This draught should be mixed in a pint of thin gruel, and given twice daily.

**Congestion of the Lungs.**

This condition precedes pneumonia, and is but seldom recognised before the latter disease is established.

**Conjunctivitis.**

*Lotion to be applied to parts around the eye.*

Boric acid, three grains.

Tincture of opium, ten minims.

Water, one fluid ounce.

*Lotion to be applied to the eyeball itself.*

Sulphate of atropine, twelve grains.

Water, six fluid ounces.

**Constipation.**—See **Cathartics.**

**Cooling Lotions.**

(i.) Solution of subacetate of lead, one fluid part.

Tincture of arnica, one fluid part.

Water, eight fluid parts.

(ii.) Chloride of ammonium, two ounces.

Nitrate of potassium, two ounces.

Water, sixteen fluid ounces.

**Cornea, Inflammation of the.**

*Lotion.*

Sulphate of atropine, twenty-four grains.

Water, six fluid ounces.

A few drops of this lotion should be placed in the corner of the eye.

**Cornea, Opacity of the.**

This condition may be caused by pressure, occasioned

by the contents of the globe of the eye, or by injuries, or by ophthalmia, or by defective nutrition. A *nebula* is a slight bluish imperfect opacity; but if the opacity be more perfect and defined, it is termed *albugo*. These conditions may be alleviated by means of the application of caustic agents, such as nitrate of silver or mitigated caustic.

### Cough.

#### *Draught.*

Powdered digitalis, thirty grains.

Solution of acetate of ammonium, four fluid ounces.

Spirit of nitrous ether, two fluid ounces.

Extract of belladonna, two drachms.

Water, q.s.

Give twice daily.

### Counter-irritants.

These are very useful to arrest or allay the process of inflammation, and the stronger kinds may in some degree even cause absorption of the products of previous inflammatory processes.

#### *White Liniments.*

(i.) Oil of turpentine, eight fluid ounces.

Strong solution of ammonia, three fluid ounces.

Soft soap, four ounces.

Shake these well together, and then add, shaking at intervals, water to make two quarts of liniment.

(ii.) Proof spirit, two pints.

Strong solution of ammonia, half a pint.

Soft soap, four ounces.

Camphor, one ounce.

The spirit will help one to powder and dissolve the camphor.



*Acetic White Liniment.*

Eggs, four.

Acetic acid, four fluid ounces.

Solution of acetate of lead, four fluid ounces.

Oil of rosemary, half a fluid ounce.

Oil of turpentine, eight fluid ounces.

Water, to make two quarts in all.

*Absorbent Liniment.*

Acetic white liniment, eight fluid ounces.

Solution of iodide of potassium, two fluid ounces.

*Compound Camphor Liniment.*

Camphor, five ounces.

Oil of lavender, two fluid drachms.

Strong solution of ammonia, ten fluid ounces.

Methylated spirit, thirty fluid ounces.

Dissolve the oil and the camphor in the spirit, and then add the ammonia gradually.

*Mercurial Liniment (for enlarged glands).*

Ointment of mercury, two ounces.

Camphor, one drachm.

Oil of tar, four fluid ounces.

Linseed-oil, four fluid ounces.

*Blistering Liniment.*

Powdered cantharides, one ounce.

Olive-oil, eight fluid ounces.

Digest these two ingredients over a hot bath.

*Absorbent Blistering Liniment.*

Iodine, one ounce and two drachms.

Iodide of potassium, four drachms.

Camphor, two drachms.

Methylated spirit, ten fluid ounces.

Paint the part with this liniment by means of a brush.

*Mustard Liniment.*

Mustard, four ounces.

Oil of turpentine, five fluid ounces.

Digest for ten days, and then add a sufficiency of linseed-oil.

*Blistering Ointments.*

(i.) Biniodide of mercury, one pound.

Olive-oil, one pint.

Mix thoroughly, and then add seven pounds of melted lard.

(ii.) Lard, four pounds.

Resin, four pounds.

Powdered cantharides, one pound.

(iii.) Powdered cantharides, one pound.

Venice turpentine, one pound.

Resin, one pound.

Palm oil or lard, four pounds.

**Cow-pox.**

This disease generally lasts about seventeen and a half days, but it may be protracted for about five weeks. For vaccination purposes the vaccine is generally collected at about the fifth day after the first appearance of the pustule. The disease is not dangerous as a rule—at least, in Western countries. The milk should not be used for human food, so long as the cow is suffering from the malady. Perfect cleanliness in all points, care in milking, and suitable treatment of any local affection, must be well seen to.

**Cripple, or Fragility of the Bones.**

This is a condition of bones in which they are liable to break easily, and it results from a diminution of animal constituents, or from an excess of the earthy material, which last in either case preponderates so much as to render the bones brittle. The disease is due to atrophy of the osseous substance, the animal constituents being, relatively to the inorganic constituents, very largely increased. The disorder affects oxen, and especially milch-cows, in certain localities.

*Treatment.*—The animal should be removed to a different soil, and water should be used which contains earthy salts in fair quantity. Good nutritious food is essential, and that containing phosphates is especially valuable. The salts of iron are valuable as tonics. The sulphate or carbonate of iron is useful, but the citrate of iron and ammonium is even better. The latter may be given in two-drachm doses twice daily. Vegetable tonics and the phosphate of calcium are also valuable. Soft water seems bad for cows, especially milch-cows.

**Cyanosis, or Blue Disease.**

This malady is due to imperfect closure of the foramen ovale. Moderate exertion may cause death, and animals affected with the disease generally die young, or are killed.

**Cystitis, or Inflammation of the Bladder.**

The urine should be drawn off with a catheter, and the warm sedative solutions, such as infusion of poppies, may be injected into the bladder. Treatment should be carried out with very great discretion, and should vary, according as the inflammation be acute or chronic, and as the animal be a male or a female. Warm or hot water

should be applied to the abdomen. A great quantity of simple watery gruel should be given, and nothing else.

### **Delayed Parturition.**

*Draught.*

Ergot, one ounce (or one fluid ounce of the liquid extract of ergot).

Tonics, q.s.

Administer in a quart of warm beer.

### **Delirium.**

It is often the best course, in order to ensure the safety of human beings, to summarily shoot an ox suffering from delirium, before serious damage be done.

### **Depraved Appetite.**

This condition may result from chronic indigestion, and therefore needs the same treatment.

### **Derbyshire Neck or Goitre.**

This disease consists of an enlargement of the thyroid gland, and the tendency to overgrowth of this structure may be inherited. The treatment consists in taking the animals from the district in which they have contracted the disease, or by supplying rain-water, or water acted upon by carbonate of sodium, which precipitates the magnesium salt. The malady attacks both men and animals in districts where the water-supply is obtained from the magnesian limestone.

### **Diabetes Mellitus.**

The food should be altered. Give sixteen ounces of Glauber's salts dissolved in three gills of warm water,

and take care that the bowels continue fairly active. Codeia or morphia is most efficacious in this disease.

### Diabetes Insipidus.

The same draughts should be given as those which are prescribed for anæmia. However, it is to be remembered that this disease is not often met with in the bovine species. The diet should be nutritious, and liberal in amount, and in the first instance laxatives should be administered.

### Diaphoretics.

#### *Draught.*

Solution of acetate of ammonium, four fluid ounces.

Camphor, two drachms.

Spirit of nitrous ether, one fluid ounce.

Give in a pint of warm gruel.

#### *Wet Pack.*

This is a very efficient sudorific agent.

### Diarrhœa.

(a) In adult cattle :

#### *Draughts.*

(i.) Powdered opium, two drachms.

Catechu, two drachms.

Galls, two drachms.

Prepared chalk, one ounce.

Give in a pint of warm water twice daily.

(ii.) Catechu, two drachms.

Camphor, two drachms.

Powdered bael-fruit, two ounces.

Powdered opium, two drachms.

Mucilage of starch, one pint.

Give twice daily.

(b) In calves :

*Draughts.*

(i.) Pepsine, twenty grains.

Diluted hydrochloric acid, thirty minims.

Sulphate of cinchonine, seven and a half grains.

Water, q.s.

Give twice or thrice daily in water or mucilage of starch.

(ii.) Diluted sulphuric acid, thirty minims.

Tincture of catechu, two fluid drachms.

Spirit of chloroform, thirty minims.

Water, q.s.

This draught may be given thrice or four times daily, in water or mucilage of starch. Salicylate of bismuth in doses of two drachms is an excellent remedy, and so is also salicylate of iron.

**Diphtheria.**

Very careful nursing is necessary, and liquid food. The air-passages should be steamed with an antiseptic inhalation, made by adding about a teaspoonful of oil of eucalyptus to about a gallon of boiling water. A free supply of water with chlorate of potassium added to it (about a drachm to each half-bucketful), and a plentiful supply of air, should also be available. Salicylic acid is valuable, and the dose is about one drachm. Sulphite of sodium is also of great value in doses of one drachm given rather frequently. If there be danger of suffocation, tracheotomy must be performed. Vegetable tonics, and, according to some persons, coffee, are to be used. The sloughs in the mouth should be removed, and the places left bare should be acted upon with the tincture or the solution of perchloride of iron, or with some

caustic, or with a weak solution of perchloride of mercury carefully applied. The attendants should be disinfected.

### Disinfectants.

Those most usually employed are carbolic acid, iodine, chloride of lime, chlorine gas, and sulphurous anhydride. From a very long personal experience, we can recommend the last as being at once so easy to use and so efficacious, that it is difficult to find any more serviceable. All that is necessary is to leave a tray containing burning coals in the room, and place sulphur on the top. The one who carries this out should take care not to inhale too large a quantity of the gas. The efficacy of sulphur dioxide is well known in human medicine, and we would especially mention swine fever of pigs, anthrax, small-pox, scarlet-fever, diphtheria, and tuberculosis as being maladies in which its good effects might be more extensively used.

**Downfall of the Udder.**—See **Garget**, p. 52.

**Dropping the Cud, or Simple Indigestion.**—See **Indigestion**, p. 61.

**Dropsy, or Ascites.**—See p. 16.

#### *Draught.*

Nitrate of potassium, two drachms.

Bicarbonate of potassium, four drachms.

Oil of juniper, one fluid drachm.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

The drenches under **Anæmia** are also good.

**Dysentery.***Draught.*

Ipecacuanha, three drachms.

Powdered opium, two drachms.

Chalk, two ounces.

Galls, two ounces.

Mix well, and give with a pint of warm water or gruel thrice daily.

**Dysuria.***Draught.*

Nitrate of potassium, one ounce.

Bicarbonate of potassium, one ounce.

Water, q.s.

Give twice daily.

**Ecbolics.**

(i.) Powdered ergot, one ounce.

Give in warm water.

(ii.) Tincture of ergot, one fluid ounce.

(iii.) Liquid extract of ergot, one fluid ounce.

**Eczema.**

A number of vesicles appear on the skin in certain parts, and the hair is denuded. Laxative medicine should be employed, and the parts may be dressed with suitable preparations containing lead and morphia. Good food should be given, and strict cleanliness enjoined.

**Eczema Contagiosa, or E. Epizoötica.**—See **Aphtha Epi-zoötica**, p. 12.

**Ecthyma.**

This disorder of the skin is rare among cattle. A number of large, prominent, and isolated pustules appear.



They burst, and produce a dark scab, which, on being detached, leaves a brown stain. They frequently occur on the udder. The treatment should be similar to that employed for urticaria.

*Application.*

Ointment of boric acid.

*Draught.*

Bicarbonate of potassium, half an ounce.

Bicarbonate of sodium, half an ounce.

Nitrate of potassium, half an ounce.

Water, a sufficient quantity.

This draught may be given twice daily.

**Emphysema.**

As a rule oxen suffering from emphysema are killed. If, however, the animals are to be treated, the same remedies may be given as those mentioned under **Anæmia**.—See p. 5.

**Endocarditis, or Inflammation of the Lining Membrane of the Cavities of the Heart.**

It occurs principally as a complication of rheumatic disease, and requires very careful treatment. Large growths may be formed, and sudden death occur. The best plan is to make the animal ready for slaughter.

**Endocarditis of Chronic Bright's Disease** is attributable to the extra blood-pressure.

**Enteritis.**

Blood should be removed at once if the animal be full-blooded, and, if necessary, in six hours' time the bleeding should be repeated. Even as much as a gallon of blood

has been abstracted in some cases. The belly should be stimulated by rugs wrung out from hot water, renewed at intervals, and by liniments. Great benefit may accrue from doses of thin, warm gruel, containing a little linseed-oil. Opium is most useful for allaying the pain; but aconite in suitable doses is, perhaps, better, if the constipation be severe. Cathartics, if given, cause great mischief. Most careful nursing is necessary. The impacted fæces may be abstracted from the rectum mechanically, by the hand or otherwise, and anodyne and mucilaginous enemata may be very serviceable. The animal may be allowed to assuage its thirst from a supply of nitrated water placed by its side.—See p. 63.

### **Epilepsy, Megrims, or Staggers.**

An ox seized with an epileptic fit is said to bellow, froth at the mouth, and pass fæces and urine involuntarily. The convulsive movements soon cease, the animal rises, and soon appears healthy again. Slaughter seems the best course.

### **Epistaxis.**

#### *Draughts.*

- (i.) Tincture of perchloride of iron, one and a half fluid ounces.  
Tincture of ergot, one fluid ounce.  
Water, a sufficient quantity.
- (ii.) Sulphate of iron, two drachms.  
Powdered ergot, one ounce.  
Water, a sufficient quantity.

### **Epulis.**

A tumour weighing about one and a half ounces was excised by Mr. J. B. Gresswell from a beast's gum on the

inside of the mouth. Tincture of myrrh was used as an after-dressing. The animal was a feeding bullock, and the tumour had caused continual slavering and interfered with the feeding. There was no return of the tumour.

**Ergotized Grasses** may possibly be injurious.

**Errors in Diet** should be avoided.

**Erysipelas.**

*Draughts.*

(i.) Tincture of perchloride of iron, one fluid ounce and a half.

Spirit of chloroform, half a fluid ounce.

Water, q.s.

Give every four hours for about five doses.

(ii.) Tincture of aconite (V.P.), forty minims.

Chlorate of potassium, three drachms.

Water, q.s.

This draught may be given at intervals of six hours.

**Erythema Chronica.**

Treatment should be begun with a laxative, followed by—

*Draught.*

Liquor arsenicalis, three fluid drachms.

Bicarbonate of potassium, one ounce.

Water, a pint.

This draught may be given twice daily *after* food.

**Erythema Mamillarum.**

The calf should be taken away from the mother, and boric acid ointment or lotion should be applied locally. In the first place a laxative should be given. When the

pain and the inflammation are considerable, apply one of the subjoined ointments.

*Ointments.*

- (i.) Extract of belladonna, one ounce.  
 Boric acid, two ounces.  
 Carbolic acid, half a fluid ounce.  
 Benzoated lard, thirteen ounces.
- (ii.) Vaseline, six ounces } Mix.  
 Boric acid, one ounce }
- (iii.) Vaseline, twenty-seven ounces } Mix.  
 Salicylic acid, one ounce }

**Eye.**

- (a) Contractor of pupil of :

*Lotion.*

Sulphate or salicylate of eserine, nine grains.  
 Water, six fluid ounces.

- (b) Dilator of pupil of :

*Lotion.*

Sulphate of atropine, eighteen grains.  
 Water, six fluid ounces.

**Falling of the Womb.**

*Draught.*

Tincture of opium, two fluid ounces.  
 Spirit of chloroform, one fluid ounce.  
 Water, q.s.

This draught may be given once or twice. The womb itself should be cleansed with antiseptic lotion and replaced before the medicine is given.

**Fatty Tumours.**

These are generally seen near the shoulder, and often

weigh as much as two to three stones. In the earlier stages they should be removed with the knife; but if the size be very large, slaughter may be best.

**Felon, Chine-, or Lumbago.**

*Draught.*

Carbonate of ammonium, two drachms.

Bicarbonate of potassium, one ounce.

Gentian, one ounce.

Ginger, one ounce.

Mix well with a pint of warm water, and give the draught twice daily.

*Liniment.*

Liniment of aconite, four fluid ounces.

Compound liniment of ammonia, four fluid ounces.

**Fever, Parturient.**—See **Parturient Septicæmia.**

**Filaria.**

The eyes of cattle are occasionally infested with the *Filaria lachrymalis* and the *Filaria papillosa*, which last is the common eye-worm of the horse, and has also been found in the ox and ass. Only two cases of its occurrence in the ox have been recorded. It is found in the globe of the eye, usually in a cyst within the cornea, also in the peritoneal and thoracic cavities, in the diaphragm and abdominal muscles, and in the arachnoid membrane of the brain.

**Flatulent Colic.**

First give a full aperient, then cause the animal to walk a little up and down, rubbing the right side in the intervals of repose. Enemas should be given, and manual exploration of the rectum may be carried out.

*Draught.*

Solution of ammonia, one fluid ounce.

Spirit of chloroform, one fluid ounce.

Water, q.s.

**Foot-and-Mouth Disease.**—See **Aphtha Epizootica**, p. 12.

**Foreign Bodies in the Rumen, Reticulum, and Abomasum.**

—See **Bezoars**, p. 18.

**Foul in the Foot.**

All the diseased horny tissue should be removed, especially that near which matter has formed. The foot, if necessary, should first be poulticed, in order to facilitate the removal of the decayed parts by loosening their attachment. Then the foot should be thoroughly cleaned with the aid of a warm and strong antiseptic lotion. A cathartic should be given, and finally the foot should be dressed with one of the following preparations :

*Ointments.*

(i.) Carbolic acid, four fluid drachms.

Lard, four ounces.

(ii.) Boric acid, one ounce.

Lard or vaseline, seven ounces.

*Powder.*

Sulphate of copper in fine powder, one ounce.

Alum, finely powdered, one ounce.

*Local Application.*

Nitrate of copper, one ounce.

Stockholm tar, six ounces.

**Founder.**

This disease is not common among oxen. It is best to give a cathartic, and cooling lotions may be used locally. If there be any sign of fever, the following draught may be administered thrice daily :

*Draught.*

Tincture of aconite (V.P.), forty minims.

Spirit of nitrous ether, one fluid ounce.

Water, q.s. to make six fluid ounces.

**Fragilitas Ossium.**—See p. 39.

Remove the animal to a different soil, and give water which contains earthy salts in fair quantity. Good nutritious food is essential, and that containing phosphates is especially valuable. The citrate of iron and ammonium may be given in two-drachm doses twice daily. Vegetable tonics and the phosphate of calcium are valuable. Soft water is bad for cows, especially milch-cows.

**Furunculus, or Boil.**

Apply poultices or fomentations until the boil breaks, and then treat with boric acid fomentation.

**Gadfly of the Ox.**—See **Æstrus Bovis**, for the same mixtures will protect from the gadfly as those which do so from the warble-fly.

**Gangrenous Stomatitis.***Draught.*

Liquefied carbolic acid, ten minims.

Chlorate of potassium, two drachms.

Water, six fluid ounces.

Give four times daily.

*Gargle.*

Tincture of iodine, two fluid drachms.

Water, eight fluid ounces.

Use rather often.

The ulcers should be touched with nitrate of silver, or should be painted with a mixture of one fluid part of acid solution of nitrate of mercury added to twenty-four fluid parts of water. Sanitation should be looked into.

**Garget.**

(a) In acute stage :

*Draughts.*

(i.) Bicarbonate of potassium, one ounce.

Tincture of aconite (V.P.\*), forty minims.

Water, q.s.

This draught may be given every four hours for a day, and then thrice daily, so long as the temperature be high.

(ii.) Nitrate of potassium, one ounce.

Tincture of aconite (Gresswell's V.P.), forty minims.

This draught may be given every four hours for a day, and then thrice daily, so long as the temperature be high. The milk should be removed regularly, and linseed poultices containing three drachms of extract of belladonna may be applied.

(b) In chronic induration :

Inject with a *lotion* made of :

Bicarbonate of potassium, one ounce.

Water, eight fluid ounces.

\* N.B.—In all cases where tincture of aconite is mentioned in this book, that of the British Pharmacopœia is meant. This is the same as that of Gresswell's V.P.



In later stage apply acetic *liniment*. See **Counter-irritants**, p. 36.

*Draught.*

Bicarbonate of potassium, one ounce.

Iodide of potassium, two drachms.

Water, q.s.

Give twice daily.

**Gastro-enteritis of Calves.**

Alkalies should be given. If profuse diarrhœa comes on, stimulant tonics and cordials are useful. Diminish the milk allowed per day by one-half, giving linseed-gruel in its place.

**Glaucoma.**

In the earlier stages an operation may be performed.

**Glossanthrax.**

Treatment is of but little use in this disease, and, indeed, it is best not to try to cure, but to kill, and bury the carcass.

*Draught.*

Salicylate of sodium, two drachms.

Sulphite of sodium, two drachms.

Water, q.s.

Give four times daily.

*Gargle.*

Acid solution of nitrate of mercury, one fluid drachm.

Water, six fluid ounces.

**Glossitis.**

Commence with the administration of sixteen ounces of sulphate of magnesium, or of sulphate of sodium and then give :

*Draught.*

Solution of acetate of ammonium, four fluid ounces.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

This draught may be given four times daily. The animal should be allowed as much gruel as will be taken, and if the power of swallowing be absent, nutritive enemata should be had recourse to. In the later stages, and during recovery and convalescence, give :

*Draught.*

Gentian, one ounce and a half.

Ginger, half an ounce.

Sulphate of iron, two drachms.

Give twice daily in a pint of warm water or gruel.

**Goitre.**

A disease which occurs where the water is obtained from the magnesian limestone. It is known as Derbyshire neck, and occurs also in Switzerland and elsewhere, and in man, sheep, and oxen. The thyroid gland is enlarged. The animals should be taken from the district where they have contracted the disease, and rain-water, or water acted upon by carbonate of sodium, which precipitates the magnesium salt, should be supplied.

**Gonorrhœa.**

Commence treatment with a cathartic, then give one of the following draughts, and also use the injection. It should be borne in mind that this disease is highly contagious, and in cleaning away the pus, one should be careful not to get any of it near one's eyes or elsewhere.

*Draughts.*

(i.) Balsam of copaiva, four ounces.

Castor-oil, four fluid ounces.

Give twice or thrice daily.

(ii.) Sandal-wood-oil, half a fluid ounce.

Linseed-oil, six fluid ounces.

Give twice daily.

*Injections.*

(i.) Sulpho-carbolate of zinc, half a drachm.

Water, eight fluid ounces.

(ii.) Permanganate of potassium, five grains.

Water, eight fluid ounces.

**Gutta Serena, or Glass-eye.**

This disease may be the result of an injury to, or disease of, the brain. It is characterized by a loss of nerve-power, the retina not being able to receive, and the optic nerve not able to transmit, the impression of the image of an object.

**Hair-balls.**

These are produced by the cattle licking themselves or one another, thus swallowing, perhaps, a great deal of hair. Though the balls are of rather large size, they are light in weight. They may be present in very young animals, and may even be found in the abomasum, or fourth stomach.

**Hæmatopinus Vituli** (of the calf) and **H. eurysternus** (of cattle), together with the **Trichodectes scalaris**, are the lice of the ox.

**Hæmaturia, or Blood in the Water.**—See also **Red water.**

Since this affection is the result of different conditions,

being, in fact, a symptom of many different diseases, the treatment must vary. In the first place, a laxative should be given, *e.g.*, sixteen fluid ounces of castor-oil or sixteen ounces of Epsom salts.

*Draughts.*

- (i.) Tincture of perchloride of iron, one fluid ounce.  
 Spirit of chloroform, half a fluid ounce.  
 Water, q.s.  
 Give twice daily.
- (ii.) Acetate of lead, one drachm.  
 Galls, two ounces.  
 Water, q.s.  
 Give twice daily.
- (iii.) Extract of taraxacum, four ounces.  
 Carbonate of iron, three drachms.  
 Mix in a pint of water, and give twice daily.

**Hæmoglobinuria.**

Firstly, administer a cathartic. Nurse carefully, and change the diet to soft food.

*Draught.*

Bicarbonate of potassium, three drachms.

Chlorate of potassium, three drachms.

Carbonate of ammonium, three drachms.

Give thrice daily in a pint of gruel.

Thompson (of Aspatria) has found that a top-dressing of five or six per cent. per acre of rock salt is an effectual preventive of this disorder. Perhaps the salt kills the germs.

**Hæmoptysis, or Bleeding from the Lungs.**

This may be due to acute pulmonary congestion or to

laceration of the lung-tissue, and in some cases to disease of the heart. By far the most frequent cause, however, is tuberculosis. In the case of cattle it is, as a rule, best to slaughter an animal afflicted with this malady before the disease has had time to progress further.—See **Bleeding**, p. 20.

**Hæmorrhage**.—See **Bleeding**, p. 20.

**Hæmorrhoids, or Piles**.

Begin with a cathartic, and repeat it, if necessary. Then give—

*Draught.*

Extract of taraxacum, four fluid ounces.

Chloride of ammonium, one ounce.

Solution of aloes (of the strength of one drachm to the fluid ounce), six fluid ounces.

Gentian, one ounce.

Give once daily in a pint of warm water.

*Local Applications.*

(a) Ointment or tincture of hamamelis.

(b) Alum, four drachms.

Water, eight fluid ounces.

*Surgical Measures.*

It may be necessary to remove the tumours with the cautery or the écraseur.

*For Bleeding Piles.*

Oil of turpentine, one fluid ounce.

Fluid extract of ergot, half a fluid ounce.

Linseed-oil, four and a half fluid ounces.

**Heart**.—See **Carditis**, p. 28.

**Heel, Ulceration of the.***Ointment.*

Sulphate of copper, one drachm.

Lard or vaseline, one ounce.

Apply twice daily ; but sometimes it is best to remove the granulations by cauterization.

**Hemiplegia and Paraplegia.***(a) Acute :*

If the paralysis be due to a tumour or a fracture, slaughter is to be recommended. If it be due to inflammation of the spinal cord (myelitis), the spine may be blistered with ointment of red iodide of mercury, and tonics given.

*(b) Chronic :**Draught.*

Solution of hydrochlorate of strychnine, two fluid drachms.

Spirit of chloroform, four fluid drachms.

Water, q.s.

Give twice daily.

**Hepatitis, or Inflammation of the Liver, and Congestion of that Organ.**

The diet should be spare and laxative.

*Laxative Draught.*

Sulphate of sodium, sixteen ounces.

Caraway seeds, one ounce.

Give in a pint of warm water, and if necessary repeat on the next day. Instead of this draught, one drachm of calomel may be given, and followed for several days by half-drachm doses.

*Draught.*

Tincture of aconite (V.P.), forty minims.

Chloride of ammonium, six drachms.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

Give thrice daily, and when the febrile symptoms are gone, leave off the aconite.

**Herpes Circinatus.**

Vesicles not unlike those of eczema, but larger, appear in cases of this complaint, and arrange themselves in a gradually widening circle.

**Hide-bound.**

Begin with a laxative. *Draughts* and *powders* same as those given under **Anæmia**, p. 5.

**Holz-zunge**, or **Actinomycosis**, to which refer, p. 2.

**Hoven**.—See **Tympanites**.

**Hydrocele.***Draught.*

Solution of hydrate of potassium, half a fluid ounce.

Iodide of potassium, two drachms.

Water, q.s.

Give in the drinking-water twice daily.

*Local Application.*

Tincture of iodine.

*Surgical Measures.*

**Hydrothorax**.—See **Pleurisy**, later stage.

**Impaction of the Rumen.***Draught.*

Sulphate of magnesium, sixteen ounces.

Aloes, eight drachms.

Ginger, half an ounce.

Powdered croton bean, one drachm.

Give in a pint of warm water. If the bowels do not act, two pints of castor-oil may be given on the next day. If no movement of the bowels can be elicited by other means, then resource may finally be had to the intravenous injection of sulphate of eserine (one grain in solution). See **Cathartics**, p. 30.

**Imperforate Anus (in Calves).**

The best plan is generally to divide the membrane by means of two crucial incisions. If, however, the intestine ends blindly, an attempt may be made to reach the blind end and open it, and then to sew the edges of the opened end to the edges of the cutaneous incision.

**Impetigo Labialis.**

An eruption of pustules may appear, and beneath them there is a severe inflammation. The pasture should be changed, and a suitable ointment applied. A cathartic medicine may be useful.

**Incontinence of Urine.***Draughts.*

(i.) Bicarbonate of sodium, one ounce.

Powdered nux vomica, thirty grains.

Ginger, half an ounce.

Gentian, one ounce.

Give twice daily in a pint of warm water.



(ii.) Solution of hydrochlorate of strychnine, two fluid drachms.

Bicarbonate of potassium, one ounce.

Water, q.s.

Give twice daily.

### Indigestion.

This complaint may be due to an excess of acidity in the stomach, or it may be occasioned by a diminution of acidity. In the former case draught i. will be required, and this will be much more frequently serviceable; and in the latter case draught ii., which will be but seldom required. Treatment should be commenced with a cathartic, and this is to be followed by :

#### *Draughts.*

(i.) Bicarbonate of sodium, two ounces.

Tincture of opium, one fluid ounce (or chlorodyne, six fluid drachms).

Ginger, half an ounce.

Gentian, one ounce.

Bromide of potassium, three drachms.

Give in a pint of warm water twice daily.

(ii.) Diluted hydrochloric acid, two fluid drachms.

Solution of hydrochlorate of strychnine, one fluid drachm.

Water, q.s.

Give twice daily.

### Inertia of the Uterus (Delayed Parturition).

#### *Draught.*

Powdered ergot, one ounce.

Carbonate of ammonium, four drachms.

Gentian, one ounce.

Ginger, half an ounce.

Give in a quart of warm beer.

### **Infectious Diseases, Prevention of the.**

It is not possible to absolutely stamp out all the infectious diseases of animals, but it is nothing less than marvellous how much has been effected in this respect by recent research and the thorough carrying out of hygienic measures. Much still remains to be done; but, in view of the immense strides which have been made in the last century, we may be able to anticipate a far greater degree of success than has yet been achieved. The infectious diseases of animals are important, not only in themselves, but also because some at least of them are communicable to mankind. The germ theory has simplified the whole aspect of medicine and surgery so much that, by the help of the many clever and skilled workers in England and abroad, we may hope for still more startling discoveries in the near future. It is said that 'Prevention is better than cure,' and it is unquestionably true that, as our sanitary measures become more and more perfect, there will be less and less disease both amongst ourselves and the animals which we have domesticated.

### **Inflammation of the Bladder, Bowels, Brain, Bronchi, Conjunctiva, Cornea, Heart, Kidneys, Liver, Lungs, Udder.**

(a) **BLADDER** (Cystitis) (see p. 39):

*Draught.*

Bicarbonate of potassium, one ounce.

Tincture of opium, one fluid ounce.

Tincture of aconite (V.P.), forty minims.

Water, q.s.

Give thrice daily.

(b) BOWELS (Enteritis) (see p. 45):

*Draught.*

Tincture of opium, two fluid ounces.

Tincture of aconite (V.P.), forty minims.

Repeat at intervals of three or four hours, if necessary.

(c) BRONCHI (Bronchitis) (see p. 24):

*Draught.*

Carbonate of ammonium, three drachms.

Solution of hydrochlorate of strychnine, two fluid drachms.

Spirit of chloroform, half a fluid ounce.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

Give twice daily.

(d) BRAIN (Encephalitis, including both Meningitis and Cerebritis).

This disease is less frequent than formerly, and this greater exemption is no doubt due to greater care and less over-driving. A mad cow or bull is a very dangerous animal, and therefore it will often be best to shoot the creature. If treatment be decided upon, blood-letting should first be carried out, and a strong cathartic given, preferably croton-oil (about forty minims, or even one drachm), on account of the small bulk required. Subcutaneous injection of hydrocyanic acid may also be useful. Slaughter is the best course as a rule; but exceptional cases may occur.

*Draught.*

Hydrate of chloral, three drachms.

Bromide of potassium, three drachms.

Water, q.s.

Give thrice daily.

*Blister.*

Ointment of catharides may be applied to the poll; but some persons might prefer an ice-bag. The form for the ointment is :

*Ointment.*

Powdered catharides	} equal parts.
Venice turpentine	
Resin	
Palm-oil or lard, four parts.	

*(e) CONJUNCTIVA (Conjunctivitis) :*

*Lotion* (to parts around the eye).

Boric acid, twenty-five grains.

Tincture of opium, one fluid drachm and a half.

Water, eight fluid ounces.

*Lotion* (to the eyeball itself).

Sulphate of atropine, sixteen grains.

Water, eight fluid ounces.

*(f) CORNEA (Corneitis) :*

A few drops of the lotion immediately preceding may be placed in the corner of the eye.

*(g) KIDNEYS (Nephritis) :**Draught.*

Tincture of aconite (V.P.), forty minims.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give thrice daily. A cathartic should be given, and warm enemas may be useful. Bleeding is sometimes beneficial, when the animal is full-blooded. A sheep-skin or some warm covering should be placed over the loins.

(h) LIVER (Hepatitis).

The diet should be laxative and spare. Commence treatment either with an ordinary cathartic, such as sixteen ounces of Epsom salts coupled with half an ounce of ginger in a pint of warm water, and, if need be, repeat this draught on the following day, or else give one drachm of calomel and then a half-drachm of the same daily for several days, or else begin with the Epsom salts, and then go on with half-drachm doses of calomel. In addition to this give the

*Draught.*

Tincture of aconite (B.P.), forty minims.

Chloride of ammonium, six drachms.

Spirit of nitrous ether, one fluid ounce.

Water, q.s.

Give this draught thrice daily, so long as febrile symptoms continue to be manifested; but when they have disappeared, omit the aconite at once. Finally, follow up with tonics, for which see **Anæmia**, p. 5.

(i) LUNGS (Pneumonia) (see p. 72 and 85) :

*Draught.*

Tincture of aconite, forty minims.

Solution of acetate of ammonium, four fluid ounces.

Spirit of nitrous ether, half a fluid ounce.

Water, q.s.

Give every six hours.

*Counter-irritants.* (See that heading, p. 36.)

These should be at once and thoroughly applied to the outside of the chest. A good plan is to apply rugs wrung out from very hot water round the chest, after it has been first well rubbed with a strong embrocation. These should be protected by an oil-cloth sheeting, so as to keep them hot. They should be renewed, when getting rather colder.

(j) **UDDER** (Mammitis) (see **Garget**, p. 52) :

*Draught.*

Nitrate of potassium, one ounce.

Bicarbonate of potassium, one ounce.

Tincture of aconite (B.P.), forty minims.

Give every four hours for one day, and then thrice daily, whilst the temperature is high. The milk should be drawn off regularly, and linseed poultices containing three drachms of extract of belladonna be applied to the udder. If the disease has become chronic, inject with a lotion made of one ounce of bicarbonate of potassium dissolved in eight fluid ounces of water, and in a later stage apply acetic liniment and give—

*Draught.*

Bicarbonate of potassium, one ounce.

Iodide of potassium, two and a half drachms.

Water, q.s.

Give twice daily.

**Injuries and Obstructions in the Teats.**

There may be tumours or lacteal calculi, or warts at the end of a teat. These may be removed by a ligature of fine silk, which causes the warts to slough off. Sore

or chapped teats are best treated with ointment of turpentine.

### Jaundice.

Contrary to the commonly-received opinion, jaundice is not a disease, but merely a symptom of different disorders which interfere with the due action of the liver, or rather with the bile-forming function, and the normal discharge of that secretion into the duodenum. Hence the treatment of this condition must vary with the causes. Of course the food must be carefully regulated, and should be restricted in amount, of a laxative and easily digestible nature. In the first place, it is best to commence treatment with the administration of a cathartic.

#### *Draught.*

Sulphate of magnesium, sixteen ounces.

Powdered aloes, one ounce.

Powdered ginger, half an ounce.

Mix well, and give in a pint of warm gruel.

After this has been given, and, if necessary, repeated in a day or two, some would recommend the administration of half-drachm daily doses of calomel for a few days; but perhaps a better plan is to give—

#### *Draught.*

Chloride of ammonium, four drachms.

Bicarbonate of potassium, one ounce.

Ginger, four drachms.

Give in a pint of warm water twice daily.

In cases of chronic jaundice due to torpidity of the liver give :

*Draught.*

Diluted nitro-hydrochloric acid, three fluid drachms.

Spirit of chloroform, half a fluid ounce.

Tincture of euonymin, one fluid ounce.

Water, q.s.

Give twice daily.

**Kidneys, Inflammation of the (Nephritis).***Draught.*

Bicarbonate of potassium, one ounce.

Tincture of aconite (B.P.), forty minims.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give thrice daily, leaving off the aconite, so soon as the fever is reduced. At the outset a cathartic should be exhibited. Warm enemata may be useful, and a sheep-skin or other warm covering should be placed over the loins. In full-blooded animals, bleeding is advisable. In certain cases, especially if the disorder be supposed to depend on some germ-disease, salicylate of sodium is an invaluable adjunct to treatment.

**Laburnum Poisoning.***Draught.*

Sulphate of magnesium, sixteen ounces.

Powdered aloes, one ounce.

Powdered ginger, half an ounce.

Give in a pint of warm gruel.

**Laminitis.**

This disease is not very frequently met with in cattle. If a case occur, give a cathartic, order the animal to be rested, and to have cold-water applications to the feet.



*Draught.*

Bicarbonate of potassium, one ounce.

Tincture of aconite (B.P.), forty minims.

Salicylate of sodium, two drachms.

Carbonate of ammonium, two drachms.

Give in a pint of gruel twice daily, leaving out the aconite after the first day or two—*i.e.*, when the fever is abated.

**Laryngitis.***Draughts.*

(i.) Tincture of belladonna, six fluid drachms.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give thrice daily.

In addition to this draught, inhalation of carbolyzed steam (vapour from boiling water to which carbolic acid and oil of eucalyptus have been added) and the application of a strong embrocation to the throat are also necessary. Nutrient enemata should be given in some cases (but very seldom is this requisite) if the animal cannot take sufficient food by the mouth.

(ii.) Tonic powder, three ounces.

Iodide of potassium, two drachms.

Iodine, half a drachm.

Give this in a pint of warm ale twice daily.

*Liniments.*

Liniment of cantharides, or that of mustard, or that of ammonia should be applied to the throat. See **Counter-irritants**, p. 36.

*Gargles.*

(i.) Tincture of iodine, one ounce.

Water, one pint.

(ii.) Iodine, twenty grains.

Rectified spirit, one fluid ounce.

Throw some of this solution on to the back of the tongue by means of a tablespoon (D. G.).

**Lead Poisoning.**

A good dose of Epsom salts (sixteen ounces) is the best remedy to start with, and this should be followed up with—

*Draught.*

Tonic powder, three ounces.

Iodide of potassium, two drachms.

Iodine, half a drachm.

Give in a pint of warm ale twice daily.

**Leucorrhœa.**

Commence with a cathartic, and then give—

*Draught.*

Gentian, one and a half ounces.

Ginger, half an ounce.

Granulated sulphate of iron, two drachms.

Powdered nux vomica, forty grains.

Powdered capsicum, half a drachm.

Give twice daily in a pint of warm ale or gruel.

*Injections.*

(i.) Sulpho-carbolate of zinc, forty grains.

Water, one pint.

(ii.) Permanganate of potassium, forty grains.

Water, one pint.

(iii.) Alum, ten drachms.

Decoction of oak bark, one pint.

Nitrate of silver or the mitigated caustic may be applied to any ulcerated patches which may be present.

### Lice (Phtheiriasis).

#### *Ointment.*

White precipitate of mercury, one part.

Lard or vaseline, twelve parts.

#### *Lotions.*

(i.) Stavesacre seeds, half an ounce.

Soft soap, two ounces.

The bruised stavesacre seeds should be boiled together with the soft soap in a pint and a half of water, until about one pint only is left.

(ii.) Creasote, three fluid drachms.

Methylated spirit, two fluid ounces.

Tobacco, four drachms.

Hot water, one pint.

(iii.) Liquor carbonis detergens, two fluid ounces.

Water, eighteen fluid ounces.

(iv.) Solution of perchloride of mercury in the proportion of one part of the salt to about from 500 to 800 fluid parts of water. This is very poisonous and very efficacious. Great care must be taken with this preparation.

**Liniments.**—See **Counter-irritants**, p. 36.

**Liver, Inflammation of the.**—See **Hepatitis**, and also **Inflammation**, p. 58 and p. 65.

**Loodianah Disease.**—See **Anthrax**, p. 7.

**Locked Jaw (Tetanus).***Draught.*

Bromide of potassium, four drachms.

Anise fruit, four drachms.

Give in warm gruel thrice daily.

**Lung Disease (Epidemic).**

Occurring in calves of about six months old.

*Draught.*

Iodine, two grains.

Iodide of potassium, four grains.

Sulphurous acid, twenty minims.

Sulphate of sodium, one ounce.

Sugar, one ounce.

Mix and add six fluid ounces of water, and give as one dose.

**Lungs, Inflammation of the.***Draught.*

Tincture of aconite (B.P.), forty minims.

Extract of belladonna, one drachm.

Solution of acetate of ammonium, four fluid ounces.

Spirit of nitrous ether, half a fluid ounce.

Water, q.s.

Give every six hours, but leave out the aconite after a time.

*Counter-irritants.* (See **Counter-irritants**, p. 36.)

A great deal depends upon the general management. The animal requires air, but there should be no draughts. Thorough ventilation may be effected by means of Tobin's tubes. Hot rugs should be applied to the chest.

**Malignant Catarrh, or Malignant Catarrhal Fever.***Draught.*

Salicylic acid, three drachms.

Tincture of cinchona, two fluid ounces.

Whisky, four fluid ounces.

Give in a pint of warm gruel at intervals of five hours. The ulcerations, which appear in the later stage, may be touched with—

*Local application.*

Carbolic acid, one ounce.

Linseed-oil, ten fluid ounces.

The animal should be made to inhale carbolized and eucalyptus steam. The diet should be nutritious and laxative, and during convalescence (if the animal recover) tonics will be required. The disease is generally fatal.

**Malignant Pustule.**—See **Anthrax**, p. 7.

**Mammitis, or Garget, or Inflammation of the Udder.**—See **Inflammation**, p. 52 and p. 66.

**Mange.** See p. 1.

*Ointment.*

Sulphur, one ounce.

Oil of stavesacre, one fluid drachm.

Ammonio-chloride of mercury, one drachm.

Lard or vaseline, two ounces.

The application should be efficiently used, and for a sufficiently long time.

**Meadow Saffron, or Autumn Crocus** (*Colchicum autumnale*).

This plant is in full bloom in June and July, and is an

active poison, and therefore highly dangerous to horses and cattle. As a rule, however, when oxen have partaken of it in small amount only, they experience so much discomfort that they do not indulge in it again.

### **Mercury.**

The great point to be borne in mind about the use of the potent salts of this element is that great caution is necessary. This remark applies, of course, to all strong medicaments, but especially to the more poisonous compounds of mercury.

### **Metro-Peritonitis, or Puerperal Peritonitis.**

Begin with a mild cathartic, and follow with—

#### *Draughts.*

- (i.) Powdered opium, two drachms.  
Salicylic acid, two drachms.  
Whisky, six fluid ounces.  
Water, q.s.

Give at intervals of six hours.

- (ii.) Salicylate of sodium, four drachms.  
Tincture of opium, one and a half fluid ounces.  
Solution of acetate of ammonium, four fluid ounces.  
Water, q.s.

Give at intervals of four hours.

#### *Injection.*

- Carbolic acid, half a fluid drachm.  
Water, ten fluid ounces.

**Milk Fever.**—See **Apoplexy, Parturient**, p. 13.

**Miltz-brand Fieber.**—See **Anthrax**, p. 7.

**Muir-Ill.**—See **Hæmaturia**, p. 55.

**Myelitis**, or Inflammation of the Nervous Structure of the Spinal Cord, is not frequently met with in the case of the ox.

### **Nævus.**

This is a swelling or tumour composed of blood-vessels, with some hypertrophy of the superficial layer of the dermis.

**Nephritis.**—See **Kidneys, Inflammation of**, p. 64.

### **Nervous Debility in Cows at the Time of Parturition.**

Enemas must be given. The surface of the body must be kept warm, and the strength of the patient sustained. Stimulating liniments should be rubbed along the back.

### **Œstrus Bovis.**

In order to destroy this parasite, it is only necessary to use a small quantity of the ointment of mercury. A portion of the size of a pea will suffice for this purpose. Mercurial ointment is the best to use, but ointment of sulphur or of carbolic acid may be tried, if they happen to be nearer to hand.

### **Ointments.**

(a) Ointment of boric acid :

Boric acid, one part.

Vaseline or lard, six parts.

(b) Ointment of carbolic acid :

Carbolic acid, one part.

Soft paraffin, twelve parts.

Hard paraffin, six parts.

(c) Compound ointment of carbolic acid :

Benzoated lard, eight ounces.

Beeswax, one and a half ounces.

Olive-oil, one and a half ounces.  
Carbolic acid, three fluid drachms.  
Oil of eucalyptus, six fluid drachms.  
Iodoform, three drachms.

Melt the lard and wax, and add the other ingredients, stirring until the mass cools.

(*d*) Ointment of salicylic acid :

Salicylic acid, one part.

Vaseline or lard twenty-seven parts.

(*e*) Ointment of aconite :

Extract of aconite, two ounces.

Prepared lard, four ounces.

(*f*) Ointment of belladonna :

Alcoholic extract of belladonna, one part.

Benzoated lard, nine parts.

(*g*) Ointment of cantharides :

Melt together over a fire in a saucepan—

Lard, four pounds.

Resin, four pounds.

Turpentine, four fluid ounces.

Oleum succini, four fluid ounces.

Mix together with the utmost care (because an explosion may occur if the two be added without), and gradually, two fluid drachms of sulphuric acid and two fluid ounces of distilled water, and add the fluid mixture thus formed to the above mixture. Finally, add one pound of finely-powdered cantharides, and stir thoroughly until the mass cools.

(*h*) Ointment of mercury :

Rub together until the metal is invisible—

Mercury, sixteen parts.

Prepared lard, sixteen parts.

Prepared suet, one part.



(i) Ointment of ammoniated mercury :

Mix thoroughly—

Ammoniated mercury, one part.

Simple ointment, or lard or vaseline, nine parts.

(j) Ointment of nitrate of mercury (Unguentum citrinum) :

Mercury, by weight, four ounces.

Nitric acid, twelve fluid ounces.

Prepared lard, fifteen ounces.

Olive-oil, thirty-two fluid ounces.

Dissolve the mercury in the nitric acid by the aid of gentle heat. Melt the lard in the oil by a steam- or water-bath, and then add the solution of mercury elevated to about the same temperature (100° C.), mixing thoroughly. Increase the heat until the mixture froths up, and then stir until the ointment is cold.

(k) Compound ointment of iodine :

Iodine, four drachms.

Iodide of potassium, four drachms.

Glycerine, two fluid drachms

Prepared lard, ten ounces.

Rub the iodine and the iodide of potassium, together with the glycerine, in a mortar, add the lard gradually, and mix.

(l) Ointment of sulphur : Mix—

Sublimed sulphur, one part.

Benzoated lard, four parts.

(m) Ointment of oxide of zinc :

Melt five parts of benzoated lard at a low temperature, and add one part of oxide of zinc, and stir until the ointment cools.

**Ophthalmia, Simple.***Lotions.*

(i.) For eyeball :

Sulphate of atropine, sixteen grains.

Water, eight fluid ounces.

(ii.) For parts around the eye :

Boric acid, twenty-four grains.

Water, eight fluid ounces.

**Ophthalmia, Periodic.**

Oxen affected with this malady are generally killed. A seton or a blister may be applied behind the ear (if the case be treated), and the following given :

*Draught.*

Bicarbonate of potassium, one ounce.

Powdered cinchona, one ounce.

Gentian, one ounce.

Give twice daily in a pint of warm water.

*Lotion.*

Sulphate of atropine, half a drachm.

Water, eight fluid ounces.

**Palpitation.***Draughts.*

(i.) Carbonate of ammonium, two drachms.

Spirit of chloroform, half a fluid ounce.

Bicarbonate of sodium, one ounce.

Water, q.s.

Give twice daily.

(ii.) Sulphate of iron, two drachms.

Digitalis, thirty grains.

Gentian, one ounce.

Give twice daily in a pint of warm water.

**Parturient Apoplexy.**—See **Apoplexy, Parturient**, p. 13.

**Parturient Septicæmia, or Parturient Fever.**

This disease must not be confounded with Parturient Apoplexy.

*Draughts.*

(i.) Salicylate of sodium, two drachms.

Brandy, four fluid ounces.

Carbonate of ammonium, three drachms.

Bicarbonate of potassium, three drachms.

Give in gruel at intervals of four hours.

(ii.) Sulphate of quinine, one drachm and a half.

Diluted sulphuric acid, four fluid drachms.

Water, q.s.

Give every three or four hours.

*Injection.*

Carbolic acid, two fluid drachms.

Water, ten fluid ounces.

**Parturition, Delay of.**

Mix one ounce of ergot, or one fluid ounce of the liquid extract of ergot, with a sufficient quantity of tonics, in a quart of warm beer, and administer the draught.

**Pediculi.**—See **Lice**, p. 71.

*Ointment.*

White precipitate of mercury, one part.

Lard, twelve parts.

*Lotion.*

Creasote, three fluid drachms.

Methylated spirit, two fluid ounces.

Water, to make half a pint.

**Pemphigus.**

In the treatment of this affection of the skin, which is characterized by the appearance of bladders up to the size of a hen's egg, gentle purgatives and afterwards alkalis are to be recommended. The bladders should be opened, and starch or the ointment of oxide of zinc applied.

**Pericarditis, or Inflammation of the Pericardium.**

It may be advisable to kill at once, or to cure first, and then to fatten and kill.

**A. IDIOPATHIC :—**

(a) In early stage :

*Draught.*

Tincture of aconite (B.P.), forty minims.

Spirit of chloroform, six fluid drachms.

Solution of acetate of ammonium, four fluid ounces.

Water, q.s.

Give every six hours about three times.

*Local Application.*

The left side of the animal in the region of the heart may be blistered with ointment of cantharides. The hot wet pack is useful.

(b) In later stages :

*Draught.*

Carbonate of ammonium, three drachms.

Carbonate of iron, three drachms.

Give in water twice daily.

**B. TRAUMATIC :—**

This form is generally fatal.

**Peritonitis, or Inflammation of the Peritoneum.***Draught.*

Tincture of opium, two fluid ounces.

Tincture of aconite (B.P.), forty minims.

Spirit of chloroform, half a fluid ounce.

Water, q.s.

Give every six hours.

**Peritonitis, Puerperal.**—See **Metro-Peritonitis**, p. 74.

**Phtheiriasis, or Lousiness.**

There are several different kinds of lice which affect oxen. If the skin be washed with an infusion of tobacco, the lice may gradually be poisoned. Before each dressing, the skin should be well washed. A very useful preparation may be made by boiling stavesacre-seeds with soft soap and water, or by taking five ounces of stavesacre-seeds, and boiling in a gallon of water until only about two quarts remain. A well-diluted solution of corrosive sublimate is very efficacious; but care must be taken in using this application, as it is a very poisonous agent.

**Phthisis Pulmonalis.***Draught.*

Cod-liver oil, ten fluid ounces.

In cases where treatment is tried, give half a pint of cod-liver oil twice daily for several days, and then once daily.

**Piles.**—See **Hæmorrhoids**, p. 57.

These are tumours situated near the anus, and caused by a varicose condition of the rectal veins. They are caused by habitual constipation or disorder of the liver.

Sometimes they may be removed by ligature, or otherwise. The food should be soft, and laxatives may be given.

### **Pityriasis.**

This is a scurfy condition of the skin, most frequently seen in young animals. A mild sedative ointment and a change of diet should be recommended.

### **Placental Membranes, Retention of the.**

#### *Draught.*

Sulphate of magnesium, sixteen ounces.

Powdered ergot, one ounce (or liquid extract of ergot, one fluid ounce).

Carbonate of ammonium, four drachms.

This draught may be given in two pints of warm water, and, if necessary, repeated on the following day.

### **Plenalvia, or Engorgement and Inflammation of the Rumen.**

#### *Draught.*

Epsom salts, sixteen ounces.

Solution of aloes, four to eight fluid ounces.

Powdered ginger, one and a half ounces.

Aromatic spirit of ammonia, one and a half fluid ounces.

The above should be mixed with a rather large amount of warm gruel, and the draught is to be given slowly and carefully with a horn. This may be followed up with about half a pint of linseed-oil, and if there be no relief, the first draught may be repeated, or two pints of castor-oil given. Puncturing the rumen may be advisable, and the animal's left side should be well rubbed with the

hand. A little exercise may be taken, and warm water may be injected into the stomach with the stomach-pump. In some cases the operation of rumenotomy must be performed.

### **Plethora.**

An over-fed animal, especially if not sufficiently exercised, is liable to simple acute inflammation, and may fall a victim to disease depending upon this overloaded state of the blood. Moreover, calves when fed with too great an amount of food, especially of a nitrogenous character, are very prone to become the prey of the germs of black-leg.

### **Pleurisy.**

After giving a laxative, drenches containing acetate of ammonium, camphor, and nitric ether every four hours, with the addition of aconite in acute cases in vigorous animals. Bleeding is *not* to be recommended. Hot cloths should be applied in the acute stages, as in inflammation of the lungs, and as the acute symptoms subside, mustard poultices or blisters of cantharides ointment should be made use of.

A combination of carbonate of ammonium, iodide of potassium, and digitalis, about one drachm of each, may be given. Carbonate of ammonium is one of the best stimulants which can be used. In the stage of return to health, the tincture of the perchloride of iron with nux vomica is very useful, and good diet is then required.

If the effusion of fluid be abundant, it is necessary to tap the chest. This operation is performed by passing a large Southey's trocar and canula through the wall of the chest between the eighth and ninth ribs. The trocar

is then withdrawn, and over the external orifice of the canula is passed one end of a piece of indiarubber tubing, the other end of which dips to the bottom of a vessel placed to remove the fluid as it flows out from the chest.

### **Pleuro-Pneumonia Contagiosa.**

This disease is not treated. Immediate slaughter of all animals affected, and of such as have been in contiguity with affected animals, should be carried out, and the carcasses should be buried with antiseptic precautions, because the flesh is *not* fit for human food. In case one should be travelling in a foreign country, such as Africa, with a span of oxen, we give forms :

#### *Draught.*

- (i.) Pure carbolic acid, half a fluid drachm.  
Cod-liver oil ten fluid ounces.

Thrice daily, in two pints of warm water.

- (ii.) Salicine or salicylate of sodium, four drachms  
(or salicylic acid, three drachms).

Sulphite of sodium, five drachms.

Ginger, half an ounce.

Gentian, one ounce and a half.

Give in a pint of ale twice daily.

- (iii.) Iodine, half a drachm.

Tonics, three ounces.

Give in two pints of beer (D. G.).

### **Pneumonia, or Inflammation of the Lungs.**

The animal should be placed in a well-ventilated, airy box or shed, since a due supply of fresh cool air is essential. Cloths wrung out from hot water should be applied around the chest, and should be renewed every hour, so long as the acute symptoms last. Afterwards,



the sides of the chest may be blistered by the application on one side of mustard, and on the other, if it be also affected, of ointment of cantharides, or a strong ammonia and turpentine liniment. Moreover, in the first instance, a fair dose of Epsom salts should be given in a pint of warm water, and every four hours a drench containing solution of carbonate of ammonium, solution of acetate of ammonium, and camphor. Digitalis is also sometimes useful. Tincture of aconite (V.P.), in forty-five minim doses, is useful in plethoric cases. When the lungs are extensively inflamed, it is often best to slaughter.

### Poisoning the Water-supply.

The water in ponds is often most unwholesome, owing to the collection of excrement, and perhaps also as a result of the dead bodies of animals having been thrown into them. Such methods of poisoning the water-supply are to be looked upon as signifying reckless folly.

### Poisons.

#### BLACK HELLEBORE :

This is sometimes used as a counter-irritant dressing for setons in the dew-lap. If extreme inflammation has been set up in this way, the swelling should be fomented, and a full dose of purgative medicine given.

#### SOLANUM DULCAMARA :

This plant flowers in June and July, and produces berries a few weeks later. The pulse of an animal poisoned by it becomes almost imperceptible, and one of the symptoms is wildness and mad rushing to and fro. The pupils become much dilated, and the bowels freely opened. Stimulating

draughts, as in cases of yew-tree poisoning, are best. See p. 102.

**LEAD :**

Should an ox suffer from lead-poisoning, which is a very rare occurrence, a strong purgative is needed.

*Draught.*

Epsom salts, ten ounces.

Glauber's salts, ten ounces.

Diluted sulphuric acid, four fluid drachms.

Croton oil, twenty minims.

Give in a sufficiency of gruel, and repeat the draught in half the amount after the lapse of eight or ten hours, if it be thought necessary. Mucilage of linseed or gruel should be given in large quantities every hour, and at each alternate administration four drachms of diluted sulphuric acid may be added.

**Premature Delivery** may perhaps be occasioned by ergot, which is present on the grasses between August and December.

**Preputial Calculi.**

Calculi may be present on the wool around the prepuce of sheep. In these cases the triple phosphates, being deposited from the urine, block up the urethra. The best plan is to remove these calculi. In some cases it may be necessary to cut off the vermiform appendage,\* or to cut into the urethral canal above the place where the obstruction exists. Aperients and small doses of diluted mineral acids may be useful.

**Probang, Passing the.**

The ox must be secured, and a gag held or strapped

\* This operation would render a ram unfit for breeding purposes.

in the animal's mouth. The probang is to be well oiled, and passed backwards steadily. When the operator feels the obstruction, he must try, by moderate and steady pressure, to force it downwards into the rumen. The distressing symptoms then vanish, and gas escapes from the rumen. Great care should always be exercised in this operation.

### **Prolapsus Ani.**

The cause of straining should be obviated, and the bowel well washed with cold water, and, if possible, carefully returned by pressure. Some prefer hot water.

### **Prurigo.**

This disease is sometimes known as 'Spring Lice.' It is often met with among cattle, especially during the early parts of the year. The coat stares, the papillæ of the dermis are inflamed, and pimples appear on the body and legs, crusts are formed, and then thrown off, together with the hair. See **Urticaria**, p. 101.

### **Psoriasis.**

Treatment should begin with the exhibition of an aperient.

#### *Draught.*

Liquor arsenicalis, two fluid drachms.

Bicarbonate of sodium, one ounce.

Water, a pint.

Twice daily.

#### *Ointment.*

Tar, two and a half parts.

Yellow wax, one part.

Melt the wax at a low heat, add the tar, and stir whilst the mixture cools.

**Puerperal Apoplexy.**—See **Apoplexy, Parturient**, p. 13.

**Puerperal Peritonitis.**—See **Metro-Peritonitis**, p. 74.

**Puerperal Mania.**

Slaughter is generally the best course.

**Pupil of Eye.**

*Lotions.*

- (i.) To cause contraction :  
Sulphate or salicylate of eserine, sixteen grains.  
Water, eight fluid ounces.
- (ii.) To cause dilatation :  
Sulphate of atropine, half a drachm.  
Water, eight fluid ounces.

**Purpura Hæmorrhagica.**

*Draughts.*

- (i.) Quinetum, one drachm.  
Tincture of perchloride of iron, one fluid ounce.  
Oil of turpentine, half a fluid ounce.  
Water, q.s.
- Give twice daily.
- (ii.) Powdered gentian, one ounce.  
Powdered ginger, half an ounce.  
Carbonate of ammonium, half an ounce.  
Carbonate of iron, two drachms.
- Give twice daily in a pint of warm water, gruel, or ale.

**Pyæmia.**

*Draught.*

Powdered cinchona bark, one ounce.  
Salicylate of sodium, half an ounce.

Mix well with a pint of warm water, and give thrice on the first day, and then twice each day. Treatment

should, however, begin with a laxative, and, during convalescence, tonics will be required. See **Anæmia**, p. 5.

### **Pyrexia.**

This word means a condition of elevated temperature, as occurs during a fever and in febrile conditions generally. See **Antipyretics**, p. 10.

### **Rabies.**

This disease is not treated, the beast being shot. It is but rarely met with in the ox. The flesh is *not* fit for food.

### **Rachitis, or Rickets (in Calves).**

The food should be nutritious.

#### *Powder.*

Phosphate of lime, two drachms.

Give in the food or in milk once every day.

#### *Draught.*

Cod-liver oil, four fluid ounces.

Lime water, two fluid ounces.

Once daily.

### **Rectum, Mechanical Distension of the.**

This condition may sometimes be so serious (especially in the case of the rectum of young animals being distended with meconium) as to necessitate removal, either by means of the oiled forefinger, or in any other suitable manner.

### **Red-water, or Hæmaturia.**

#### *Draught.*

Sulphate of magnesium,  $\bar{z}$ iv.

Extract of taraxacum,  $\bar{z}$ i.

Carbonate of iron,  $\bar{z}$ i.

Give twice daily.

**Renal Dropsy.**

Purgatives should be given, and the skin should be acted upon.

**Respiratory System.**—See separate headings, namely: **Catarrh, Epistaxis, Laryngitis, Bronchitis, Pneumonia, Pleurisy.**

**Retention of Placental Membranes.***Draught.*

Sulphate of magnesium, sixteen ounces.

Powdered ergot, one ounce.

Carbonate of ammonium, four drachms.

This draught may be mixed with two pints of warm water, and given once, and then again on the next day, if necessary.

**Retinitis, or Specific Ophthalmia.**

The animal seeks quiet and solitude, avoids the light, and closes the eyelids. In the early stages, the pupil is contracted, the inflamed retina not being able to bear the light. There is a profuse discharge of tears. A red tinge of the fundus may be noticed.

**Rhagio Columbaschensis** is a fly which is very destructive to cattle in Hungary and Servia.

**Rheumatism.**

(a) ACUTE.

*Draught.*

Tincture of colchicum, half a fluid ounce.

Tincture of aconite (B.P.), half a fluid drachm.

Bicarbonate of potassium, one ounce.

Salicylate of sodium, four drachms.

Water, q.s.

Give at intervals of six hours, until the fever be abated, and then continue with half the dose of all the ingredients, but leaving out the aconite.

*Local Applications.*

Liniment of belladonna	} equal parts.
Liniment of aconite	
Liniment of chloroform	
Ordinary white liniment	

This liniment, or if necessary a stronger counter-irritant (see **Counter-irritants**), may be well rubbed on the affected parts. See p. 37.

(b) **CHRONIC.**

*Draught.*

Tincture of colchicum, two fluid drachms.

Bicarbonate of potassium, half an ounce.

Salicylate of sodium, two drachms.

Iodide of potassium, two drachms.

Water, q.s.

Give twice daily.

*Local Applications.*—Same as above.

**Rickets.**—See **Rachitis**, p. 89.

For this malady, nutritious food, cod-liver oil, in daily doses of four fluid ounces mixed with two fluid ounces of lime water, and tonics given in milk.

**Ringworm, Ordinary (*Tinea Tonsurans*).***Ointments.*

- (i.) Ointment of iodine.
- (ii.) Ointment of nitrate of mercury. See p. 77.
- (iii.) Oleate of copper, one part.  
Lard or vaseline, five parts.

*Lotions.*

- (i.) Sulphurous acid, one fluid drachm.  
Glycerine, two fluid drachms.
- (ii.) Perchloride of mercury, one part.  
Water, five hundred parts.
- (iii.) Acetum cantharidum.

**Ringworm, Favus Honeycomb (*Achorion Schönleinii*).**

The same treatment as above will be found efficacious. We believe that the best plan is to paint the part with sulphurous acid at the outset, and then continue this application, or one of the others, daily or every alternate day.

**Rumenotomy** is sometimes necessary in cases of extreme engorgement of the rumen.

**Rupture of the Rumen.**

This accident sometimes occurs as a result of tympany, whether primary, or attendant upon engorgement. It may be due to a wound or injury, especially if the rumen be at the time engorged, or to the presence of irritant substances. Death is almost inevitable.

**Scabies in Sheep.**

Sulphur ointment is best ; but cases of scabies must be at once reported, and dealt with according to law. See p. 1.



**Scarlatina or Scarlet Fever.***Draught.*

Salicylate of sodium, four drachms.

Solution of acetate of ammonium, four fluid ounces.

Bicarbonate of potassium, half an ounce.

Water, to eight fluid ounces.

Thrice daily, until the temperature be reduced, and then give only half the above dose of salicylate.

**Schlundbeulen (Actinomycosis).**—See latter heading, p. 2.

**Scour, or Skit, and Scouring in Young Calves.**—See **Diarrhœa**, p. .

**Scrofula.***Draught.*

Phosphate of lime, two drachms.

Sulphate of iron, one drachm.

Gentian, one and a half ounces.

Give in warm water twice daily.

**Scrofulous Arthritis.**—See **Arthritis, Scrofulous**, p. 16.

**Septicæmia, or Blood-poisoning.**—See **Blood-poisoning**, p. 22.

**Setons.**

When oxen are lame in the stifle, the compound liniment of ammonia should be well rubbed over the joint once or twice a day. Setons inserted over the joint and dressed with black oil daily are also to be recommended. They should be inserted every fortnight, and the parts should be kept quite clean. Setons are also very useful as a preventive of black-leg.

**Simple Colic.**

It is advisable to give sixteen ounces of Epsom salts, and enemas may be also tried. Blood may be abstracted, if the animal be plethoric. A useful draught may be made of two fluid ounces of aromatic spirit of ammonia and two fluid ounces of tincture of opium. If no relief be obtained, this drench may be repeated in an hour and a half. Again, we may give at intervals of four hours a draught composed of half a fluid ounce of oil of turpentine, one and a half fluid ounces of tincture of opium, and two fluid ounces of spirit of nitrous ether.

**Simple Erythema.**

Ointment of boric acid	} equal parts.
Ointment of oxide of zinc	
Vaseline	

Mix well and apply.

**Sore Teats.**

Ointment of boric acid, or the above.

**Splenic Apoplexy, or Splenic Fever.**—See **Anthrax**, p. 7.

This disease, when undoubted, should not be treated; but the oxen suffering from it should at once be isolated and shot, and the carcasses buried with lime at a good depth. However, cases may arise where doubt may exist, and perhaps the farmer may think well to have the other oxen treated with a preventive. If so, give—

*Draught.*

Sulphite of sodium, three drachms.

Salicylate of sodium, three drachms.

Water, fifteen fluid ounces.

Every four hours for a day or two.

**Sprains.**

(a) Early stage :

*Cooling Lotion.*

Solution of subacetate of lead, one fluid ounce.

Methylated spirit, two fluid ounces.

Chloride of ammonium, two ounces.

Nitrate of potassium, two ounces.

Tincture of arnica, one fluid ounce.

Water, one pint.

(b) Later stage :

Some stimulating liniment, such as ordinary white liniment.

**Stamping-out.**

In the case of certain diseases, such as cattle plague, anthrax, contagious pleuro-pneumonia, and rabies, there is no doubt that the policy of immediate measures of isolation, slaughter, and burial with efficient precautions is best. In regard to other maladies, such as foot-and-mouth disease, it may be a wise plan ; but in reference to tuberculosis, the disease is so widespread that some doubt may exist—on the score of the great expense which such a course would entail—if it would be practicable. No doubt, however, can be reasonably entertained that tuberculosis of human beings is in large measure transmitted by the medium of the milk and flesh of oxen affected with that disease.

**Starch Bandages.**

These are useful for setting fractures.

**Stings.**

*Lotions.*

(i.) Carbolic acid, one fluid part.

Glycerine, one fluid part.

- (ii.) Permanganate of potassium, half a drachm.  
Water, eight fluid ounces.

### **Stomach Stagers.**

Give a full cathartic dose, and suitable stimulants, such as—

*Draught.*

Carbonate of ammonium, four drachms.

Bicarbonate of potassium, one ounce.

Water, a pint.

**Stomatitis, Gangrenous.**—See **Gangrenous Stomatitis**, p. 51.

### **Stones, or Calculi.**

As a rule, of the three operations which might be resorted to, viz., artificial dilatation of the urethra by little inflated bladders or otherwise, crushing of the stone by means of instruments, or cutting for the stone, not one seems to be usually very advisable in the case of the ox. In the case of female animals, the chances of success are better. If the calculus be present in the urethra, a longitudinal or oblique section may be made along that canal over the site of the stone.

**Strangury.**—See **Hæmaturia**, p. 55.

### **Stringhalt.**

This disordered condition is well-known among horse-men as affecting horses. A similar malady has been described as attacking oxen.

### **Suppression of Urine.**

This may occur as a result of inflammation of the kidneys, or of acute febrile diseases. A working ox, fed on dry food, should be supplied with about seven gallons

of water daily, and hence it is clear that they may often have an insufficient quantity when kept in parched-up fields.

### **Symbiotes Bovis.**

According to Gerlach there are two forms of acarus which produce mange, viz., *Dermatodectes bovis* and the *Symbiotes bovis*. See p. 1.

### **Tabes Mesenterica.**

#### *Draughts.*

- (i.) Sulphate of iron, two drachms.  
 Creasote, twenty minims.  
 Gentian, one ounce.  
 Ginger, half an ounce.

Give in a pint of warm gruel twice daily. N.B.—Carbolic acid may be used instead of the creasote in the dose of twenty minims for the adult, and six minims for a calf.

- (ii.) Cod-liver oil, ten fluid ounces.  
 Oil of eucalyptus, ten minims.

Give twice daily.

- (iii.) Cod-liver oil, one pint.  
 Bromide of potassium, two drachms.  
 Sulphide of calcium, one drachm.

- (iv.) Salol, one drachm and a half in the food once daily.

### **Tail-worm.**

This is not a real disease, as is imagined by some.

### **Teats, Injuries and Obstructions in the.**

There may be tumours, or perhaps lacteal calculi or milk-stones. A silver probe should be passed up the

teat. Warts also may be found at the end of a teat, and they may be removed by constricting them with a fine silk ligature. Sore teats should be treated with ointment of turpentine.

### **Tetanus, or Lockjaw.**

#### *Draught.*

Bromide of potassium, four drachms.

Anise fruit, four drachms.

This draught may be mixed with warm water or gruel, and given thrice daily.

**Texas Fever, or Anthrax.**—See **Anthrax**, p. 7.

### **Thorter Ill.**

This is a nervous disorder, which is due to the presence of a hydatid in the cervical portion of the spinal cord, whereby more or less marked paralysis of one or both sides of the body may be caused.

**Thrush in the Mouth.**—See **Aphtha**, p. 11.

### **Tinea Favosa.**

This ringworm is caused by the fungus *Achorion Schönleinii*. The spores gain entrance into the hairs, as well as into the cuticle. The crusts should be removed, and to the underlying parts should be applied a preparation composed of one fluid part of diluted sulphurous acid, mixed with about three fluid parts of glycerine.

### **Tinea Tonsurans.**

This ringworm is caused by the fungus *Trichophyton tonsurans*. Great care must be taken not to get it, nor to allow it to be transmitted. Circular patches devoid of hair are seen, and the skin is scurfy. The same treat-

ment as above is good. Ointment of iodine and tincture of iodine and hyposulphite of sodium (saturated solution) are beneficial.

**Tobacco**

Is useful in cases of tetanus.

**Tongue, Actinomycosis of.**—See **Actinomycosis**, p. 2.

**Tonics.**—See **Anæmia**, p. 5.

*Draughts.*

(i.) Gentian, one ounce.

Ginger, half an ounce.

Carbonate of ammonium, half an ounce.

Carbonate of iron, two drachms.

Give twice daily in a pint of warm water, gruel, or ale.

(ii.) Solution of hydrochlorate of strychnine, two fluid drachms.

Tincture of capsicum, four fluid drachms.

Muriate of cinchona, one drachm.

Tincture of perchloride of iron, one fluid ounce.

Give in a pint of warm gruel.

**Transmission of Scarlet Fever and Tuberculosis to Human Beings.**

There can be no doubt that both these diseases frequently spring from eating the flesh or drinking the milk of diseased oxen. Hence the greatest caution should be exercised.

**Treatment, or Slaughter.**

It is often difficult to decide which course is preferable in the case of oxen.

**Trichina Spiralis.**

This worm has been found in man, pig, ox, rabbit, rat, and other animals.

**Tympanites, or Hoven.**

Commence with a cathartic dose. Half an ounce of vegetable charcoal may be given occasionally.

*Draughts.*

(i.) Hyposulphite of sodium, half an ounce.

Water, q.s.

Every three hours for several times, if thought advisable.

(ii.) Ether, two fluid ounces.

Carbonate of ammonium, half an ounce.

Spirit of chloroform, one fluid ounce.

Water, q.s.

Every four hours.

(iii.) Sulpho-carbolate of sodium, two drachms.

Bromide of potassium, two drachms.

Chlorodyne, six fluid drachms.

Water, q.s.

Every five hours.

(iv.) Aromatic spirit of ammonia, two fluid ounces.

Spirit of chloroform, one fluid ounce.

Oil of turpentine, one fluid ounce.

Water, sixteen fluid ounces.

Every three hours.

(v.) Solution of ammonia, two fluid ounces.

Brandy, one pint.

Give in a pint of gruel.

**Udder, Inflammation of.**—See **Garget, or Inflammation**, p. 52.

**Uræmia.**

When the kidneys are out of working order, as is the case in this condition, the liver, the skin, and the bowels should be acted on.



**Urticaria.**

A fairly strong saline cathartic should be given in the first place. In addition to this internal treatment, a lotion containing glycerine, carbonate of sodium, and tincture of opium may be usefully applied several times daily. Sulphur and bicarbonate of potassium may be given, or the following—

*Draught.*

Bicarbonate of potassium, half an ounce.

Bicarbonate of sodium, half an ounce.

Nitrate of potassium, half an ounce.

Solution of acetate of ammonium, two fluid ounces.

Water, q.s.

Twice daily for a few days.

*Ointment.*

Equal parts of boric acid and zinc ointments.

**Vaccinia (Cow-pox).**

Begin with a laxative. Also draw off the milk with a syphon.

*Draught.*

Solution of acetate of ammonium, four fluid ounces.

Tincture of aconite (V.P.), forty minims.

Water, q.s.

Thrice daily.

**Verminous Bronchitis.**—See **Bronchitis, Verminous**, p. 25.

**Warble.**—See **Æstrus Bovis**, p. 75.

**Wasting.***Drench.*

Powdered nux vomica, forty grains.

Powdered capsicum seeds, half a drachm.

Sulphate of iron, one drachm.  
Powdered ginger, half an ounce.  
Powdered gentian, one ounce.  
Powdered calumba, one ounce.  
Sulphide of calcium, one drachm.

**Whites.**—See **Leucorrhœa**, p. 70.

**Yew-tree Poisoning.**

In the first place a cathartic should be given, and then—

*Draught.*

Carbonate of ammonium, three drachms.

Whisky, four fluid ounces.

Gruel, sufficient to make half a pint.

Give every four hours, until the animal be somewhat better, and then every six hours for another day.

**Zymotic Diseases.**—Refer to **Infectious Diseases, Prevention of the**, p. 62.



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