

Remarks on rinderpest / by Charles Bell.

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REMARKS
ON
CHINDEP EST.

BY

CHARLES BELL, M.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH, AND VICE-
PRESIDENT OF THE OBSTETRICAL SOCIETY.

LONDON:

ROBERT HARDWICKE, 192, PICCADILLY.

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REMARKS

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It is now a matter of fact that the
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REMARKS ON RINDERPEST.

IT is now upwards of three months since I gave a brief outline of the following treatment of rinderpest to some of the most intelligent and extensive farmers in Berwickshire, and I should then have published it more generally, had I not been informed that there was no advantage "in curing an animal after it had become infected with rinderpest, because the expense of veterinary attendance and restoring it by improved diet would be more than it was worth ; it was better, therefore, to kill it at once and save trouble." This was purely a mistaken idea ; and I suspect it

has led to the needless sacrifice of many animals, and to the spread of the disease, by no efficient means having been adopted to check its progress. It is true that with this view Government has issued some most stringent regulations, which, if fully acted up to, may possibly prevent the disease being carried along our public thoroughfares and into our markets; but they will have little effect in arresting its spreading over the country. This is well illustrated by the unfortunate outbreak of the disease in the dairy in the Upper Ward of Lanarkshire, where its appearance could be accounted for only by the very questionable supposition that the infection had been carried from Glasgow by the milk cans. But if this was the correct explanation of its appearance, it shews an amount of virulence and insidiousness in its character that will set at defiance the Government regu-

llations, unless they shall be combined with
 others of like stringency in reference to
 those having the charge of dairies and farm
 stock, who would require never to leave an
 infected locality without purifying them-
 selves; and no article in dairy economy
 should be sent from home without being
 disinfected. These regulations would also
 require to be extended to the horses and
 carts, in which manure is conveyed, as they
 are more likely than anything else to carry
 infection! It would be in vain, however,
 to attempt to carry such regulations into
 effect: because they would require an
 amount of surveillance which could not be
 managed, and the people would not volun-
 tarily agree to them. Even if they were
 carried out to the utmost extent they
 would not prevent the spread of the
 disease; because it is not only infectious,
 but epidemic, and therefore liable to break

out in localities in which it would be impossible to account for its appearance by infection. Therefore farmers must not trust implicitly to the Government regulations, however stringent and strictly enforced, for the exemption of their stock from disease.

This opinion is opposed by the apparent circumstances attending the first outbreak of the disease, and by the impressions generally entertained by the magistrates and county justices, who seem to place unlimited confidence in the benefits to be derived from the acts of the Privy Council in preventing the spread of rinderpest; but they may as well expect to calm the wind and the waves of the sea by Acts of Parliament as to overcome the epidemic by such means; although they will most certainly create much loss and fruitless annoyance to the farmers and cattle dealers, and

will raise the price of meat, which will not be readily reduced afterwards.

It is asserted that the disease was introduced from the Continent, because it was first recognised among foreign cattle; but there was no evidence that the disease existed in the localities from which those animals were brought. That such cattle should have been affected with the disease is not surprising, as it shows one of the characteristics of all epidemics—viz., that they are more liable to attack the feeble and exhausted than the strong and healthy; and there is nothing more likely to impair the strength and constitution of animals than long journeys either by sea or land, during which they are crowded together, mistimed, ill-fed, and long kept without water. The fact, therefore, of the disease having first appeared in such animals is a strong argument against exposing them to

great fatigue and deprivation, especially when out of condition ; but it does not prove that they were the cause of the outbreak of the disease. It is much more probable that the epidemic influence was already in existence when they arrived in this country, and, in consequence of their enfeebled state, they became its first victims.

The whole history of the progress of the disease over the country proves beyond a doubt that it is an epidemic, and it may be ascribed to the heat and peculiarity of this past season, which exercised a remarkable influence on vegetation, as was strikingly indicated by the turnip crop ; therefore, we are justified in supposing that it had a similar effect upon our cattle, through the means to be afterwards explained.

If rinderpest is to be overcome by human efforts at all, it must be by adopting very

Different means than have been hitherto suggested by Government and those in authority. In short, it must be by the efforts of the farmers themselves, every one of whom must be induced to convert his farm-steading into a sanitarium, in which his cattle will have their constitution improved by suitable means, and their condition carefully examined every day, so as to ascertain the earliest indication of disease, in order that proper remedies may be had recourse to at a period when they are most likely to be effectual, which is at the very commencement of the attack, and before it has attained strength. Once the disease has become fully established in the system, it will be in many instances a very hopeless matter to attempt to overcome it. Nevertheless, an effort ought to be made in every case to effect a cure, for by so doing the disease will, in all probability, be rendered

less injurious than if it were allowed to run its course, and it would be the height of folly to kill the animals as soon as they become affected and before it can be ascertained whether the attack is to be a mild or severe one, which would be a gratuitous waste of animal life.

Under these circumstances, therefore, I would suggest, in the first place, that a prophylactic system should be pursued ; or, in other words, that the best means should be adopted to enable the animals to resist the epidemic influence, which is more to be dreaded than infection, and to ward off the disease. These objects are most likely to be attained by highly nourishing food, tonics, avoiding overcrowding, and by purifying the place in which the animals are kept. The best tonic is the muriated tincture of iron, in doses of from one to two drachms in a pint of water two or three times a day.

I am induced to recommend this valuable medicine from the fact that iron is one of the most indispensable constituents of the animal economy, which, according to Mr. Gamgee, "ranks in importance with common salt and the phosphate of lime;" and Liebig states that "it is quite certain that if iron is excluded from the food, organic life cannot be supported;" and as animals obtain the necessary supply from the soil through the means of the fodder they eat, it is possible that the remarkable dryness of last season has prevented their acquiring their proper quantity; hence their lower standard of health and susceptibility of disease of a virulent character. The cattle should at the same time be enabled to breathe as pure an atmosphere as possible, by removing everything offensive from their byre, and purifying it by means of Condyl's Fluid. Having been the

first to introduce this valuable article into medical use in Scotland, and having employed it extensively as a purifying agent and tonic, I can confidently recommend it as a powerful and safe remedy, which has the effect not only of destroying smell, but as a disinfectant. The walls and wood-work of the byre should be washed occasionally with a mixture of the fluid in proportion of a wine glassfull to a pail of water, and the floor should be slushed out with the same mixture twice a day. It would also be advisable to have earthen basins placed in different parts containing a pint of the concentrated sulphuric acid, and a wine glassful of Condry's Fluid, when a gas will be evolved, which has a remarkable influence in purifying the atmosphere, without being offensive like the fumes of the chloride of lime. In order to keep up a continued supply of this gas, it is necessary to add a

wine glassful of the fluid to the acid from time to time, which may be regulated by observing when the gas ceases to be evolved, and by feeling when the basin becomes cold outside.

The moment an animal becomes affected with the disease it ought to have a mild aperient, and the best is castor oil, which should be given in a bottle of strong ale or a wine glassful of whisky. It will now be necessary to increase the quantity of the muriated tincture of iron, or to give it more frequently; or to give large doses of Condry's Fluid by the mouth, in proportion of a wine glassful to a pint of water three or four times a day; and injections should be given in proportion of two wine glassfuls of the fluid to a gallon of tepid water twice a day. By these means, not only will an increased quantity of oxygen be introduced into the system, but the virulent

character of the fluids of the body and of the evacuations will be removed. The tonic and stimulating effect of Condry's Fluid will be considerably increased by the addition of the chlorate of potash in proportion of ten or twenty grains to each dose. As the animal gradually loses its appetite, what food it gets should be small in quantity, and of the most nourishing kind; and, should it not eat at all, then let it have a bottle or two of good beer or strong ale every day. The temperature of the animal ought to be kept up by covering it with blankets and placing warm bricks under it. It would be imprudent, however, to expose it to wet in any way, as the evaporation is likely to increase the sense of cold. The circulation of the skin should be promoted by its being rubbed with dry straw twice a day at least.

In regard to the economy of the byre, I

would further advise it to be thoroughly cleaned out several times a day, and the manure should be disinfected by means of Condry's Fluid being poured on it when put on the dunghill. It is also very desirable that the manure should be frequently removed from the farm-yard, and the whole steading should be kept as clean as possible.

The cattle that are fed out of doors should have either some of the muriated tincture of iron, or Condry's Fluid, given them every day in the water they drink, or it may be put in a mash.

In conclusion, I am happy to say that I understand Mr. Lundy of Leith has employed Condry's Fluid with great success, both in curing the animals and as a disinfectant.

Edinburgh, Jan. 1, 1866.

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APPENDIX.

(Containing MEDICAL and other REPORTS in confirmation of the SANITARY and REMEDIAL VALUE of CONDY'S FLUID in the PREVENTION and TREATMENT of RINDERPEST and other CATTLE DISEASES.

From the "Gardeners' Chronicle," Jan. 6, 1866.

"CONDY'S FLUID AND THE RINDERPEST.—I read a statement in an article in a late number of your journal which greatly surprised me. Speaking of Condy's Fluid in connection with the rinderpest, the author says that it has been found good for nothing in many cases within his knowledge. Now the question of prevention or cure of this terrible plague is becoming daily so much more important, I think anything which holds out a hope of accomplishing either should not be hastily condemned; and of all the innumerable remedies yet suggested, a very large experience assures me

none is so likely to prove efficacious; but of course it must be fairly tried, and all the necessary accompaniments of cleanliness, &c., fully supplied. I can easily believe, that merely giving the animals a certain quantity to drink daily, taking no other precaution, will neither cure the disease nor prevent infection: but if at the same time the sheds are kept clean and frequently purified with the fluid, I find infection can be totally prevented. I have had two striking examples under my notice lately. One is, that the disease broke out in a shed where this fluid was never tried, divided only by a thin partition from other sheds on either side, in which it is in constant use, and to neither has the infection spread. In the other case, four cows in a herd of thirty-seven were attacked. After the disease had broken out, the proprietor determined to try Condry's Fluid as a preventive: not another animal has been affected since he began to use it some weeks ago. Our large district continues nearly as free from the plague as when I last addressed you; for we have never relaxed in our exertions to keep off infection. Every day's experience makes me the more willing to endorse Mr. Lundy's opinion that, 'were it an universal custom to

carefully disinfect and purify the sheds, and daily administer Condyl's Fluid to the cows, the rinderpest would be swept from any locality in a very short time.' I only wish I could persuade your readers to put our theory to the proof.

" E. ALDER, Sanitary Inspector,

" Trafalgar Cottage,

" Trafalgar Square.

" Dec. 29th, 1865."

From " Rinderpest, its Prevention and Cure; and Gypsum (or Sulphate of Lime), its advantages as a Manure, Deodoriser, and Sanitary Agent."
By John J. Lundy, F.G.S., F.R.S.S.A., &c.

" Most of the cowfeeders in Leith have used and are using Condyl's Fluid for disinfection, and Gypsum for deodorisation, at my suggestion, *and up to the 28th of September there had not been* one case of rinderpest in Leith, while scarcely any dairy in Edinburgh and *all round* Leith had been free from it. Since then, one dairy has been attacked by rinderpest, and lost by that scourge two cows. The proprietor had only used Gypsum and Condyl's Fluid *sparingly*, labouring under the impression he was doing enough, yet

he had been foolishly giving his animals water to drink from a well within four yards of his midden, impregnated with the liquid filtering therefrom, although he had good Crawley water on the premises. The disease would no doubt have broken out sooner but for the precautions taken.

“My opinion is, that if the cows, *when first attacked*, are treated in a scientific manner, few, if any, will die. All healthy cattle, until the disease has left the country, should be given, say at least once a day, half-an-ounce of the permanganate of an alkali (Condy's Fluid), and occasionally a weak solution poured over them with watering-can rose, or sponged with it, and then rubbed dry with clean straw. I feel certain they will retain their health. Were it *universally* adopted to pour a small quantity into all the water given the cattle to drink, and the byres daily disinfected by Condy's Fluid, and kept constantly deodorised with Gypsum, to fix the ammonia and sweeten the atmosphere they breathe, and well watering the byre with Condy's Fluid diluted with water, the rinderpest would be swept from any locality in a few days, without resorting to the knife. If the knife be the only remedy, the study of veterinary science becomes

a farce, and the attainment of progress in knowledge by our veterinarians completely stopped. Unless veterinary surgeons try to cure and prevent disease, of what use are they, except to propagate the disease, which they cannot fail to do unless themselves disinfected by some substance that will do it thoroughly, and *no other substance I know of will do it* without destroying their clothes except Condý's Fluid diluted with water. The cure I propose for rinderpest and other contagious diseases in cows or sheep is the same, namely, sufficient vegetable stimulants and a good supply outwardly and inwardly of ozonic oxygen, by means of Condý's Fluid. The atmosphere may be deodorised and disinfected by this inodorous and non-poisonous fluid, diluted with water and exposed in any open vessel, or by very weak solutions poured out by a fine rose from a watering can; or, best of all, by one of the skilful little pneumatic glass perfume atomisers,* which, by aid of the breath, throw out of a bottle an almost im-

* The best instrument of this kind is "Condý's Atmospheric Ozoniser," sold by Barr and Co., 83, Fleet Street, London. It is worked by means of a hollow India-rubber ball.

perceptibly fine shower of spray. If fumigation by chlorine be desired, the best plan is to put in a basin half-a-pint of Condyl's Fluid, and add a wine-glassful of common muriatic acid, when a gentle stream of pure chlorine will be slowly generated for many hours, more like the odour of sea air than that of chloride of lime."

From Letter on the Cattle Plague by W. D. Crotch, M.A., in the "Standard," Oct. 3, 1865.

"It has been usual in the period of crisis to administer such cordials as are supposed to assist nature in the expulsion of foreign organisms, or in their reconversion into healthy tissue (if that be possible); and thus, during the present plague of cattle-typhus, which is the more intractable as its periods are short, recourse has been had to all manner of stimulants and antiseptics, though often in ignorance of the end to be attained, and success has but too rarely crowned the efforts. Now it appears surprising that the permanganate of potassa, a salt containing seven equivalents of oxygen in its most favourable condition, is not

more extensively used. I employed this agent with the most marked success in cases of typhoid fever in the Canary Islands last year, exhibiting doses of half-a-grain in a wineglass of water every two hours. This was the pharmacopœal preparation; but in the case of cattle the solution known as Condry's Fluid would answer every purpose, and I would suggest that two tablespoonfuls of this liquid be mixed with a pint or more of water, and given to the diseased cattle every hour, feeding them, on the first symptoms of amelioration, with warm gruel, containing some alcoholic liquor or even turpentine. The apparent action of the permanganate of potassa will consist in checking the mucous discharge and the offensive diarrhœa, owing to its readily parting with oxygen in its nascent state, in which property it surpasses all known agents; theoretically it will also destroy the lowly organised forms which I believe to be the source of the disease itself."

From "Essay on the Cause, Nature and Treatment of the Cattle Plague," by W. C. Lord, in the "Monthly Homœopathic Review," Oct. 1, 1865.

"Space will not permit me to enter as fully as I could wish into the pathology of this disease; and in thus curtailing it, I have left unnoticed many points of very great interest, whilst those I have mentioned, and the theory advanced in explanation, require extracts from various authors to bear them out: these I must reserve for a future occasion, and now proceed to consider the practical bearing of the question, and examine the action of the drugs which have proved most successful in curing the disease or removing its cause. The best of these appears to be *Condy's Crimson Fluid*. Why? I answer, because it is an antiparasitic; and my reason is given on the label of each bottle: "a simple and certain means of detecting organic impurities in air or water," and of "removing taint from meat," which Pasteur and Lemaire have clearly shown depends upon minute, living, organized beings, and that many so-called antiseptics owe their power to physiological rather than to chemical action."

From Mr. Thomas Todd, M.R.C.V.S.

“ 23, Bernard-street, Leith,

“ 30th September, 1865.

“ I have much pleasure in testifying to the benefit derived from the administration of Condry's Fluid in cases of rinderpest; when combined with rational treatment, hygiène, &c., the success is most apparent and encouraging. In my practice it has proved itself of the greatest service in the prevention of contagious diseases both of the ox and horse.

“ THOMAS TODD.”

From W. H. Kent, Veterinary Surgeon.

“ Sir,—I have refrained from giving any opinion on the properties of your Patent Fluid until I had given it a full and fair trial. This I have done, having used it undiluted as a detergent and excitant in several cases of disease in the heels and feet of horses, and as a first dressing for foot-rot in sheep. In crowded, close, and ill-drained stables, I have also recommended its use, and in each case with the most marked success. I am

now just returned from attendance on a kennel of hounds, in which virulent distemper had broken out; here I used it diluted as a deodorizer and disinfectant, sluicing, washing, and sprinkling everything with it, with an effect far surpassing that of any of the compounds of chlorine I have generally used, as it completely destroyed the offensive smell, without causing the injurious irritation always produced by chlorine on the already irritated mucous membrane of the dogs suffering from this malady.

“In short, Sir, I consider it a boon to the veterinary profession and the sportsman, and a benefit to humanity at large.

“Yours respectfully,

“W. H. KENT, M.R.C.V.S.,

“*Consulting Veterinary Surgeon
and Canine Pathologist.*

“H. B. Condry, Esq.,
Battersea, Surrey.”

from "*Memorandum on the Principles and Practice of Disinfection as applicable to the present Epidemic of Cattle Disease*," by J. L. W. Thudicum, M.D., published by order of the Privy Council (September, 1865).

"The mode in which live animals may be disinfected consists in washing them with disinfecting solutions of such strength as will destroy the contagion without injuring the surface of the animal. A solution of two ounces of chloride of lime in a gallon of water is a proper solution for washing the coats of animals. A mixture of four ounces of Condyl's red permanganate of potash fluid with one gallon of water is also a proper disinfectant solution. For full-sized cows and collocks, &c., several gallons of either of these solutions should be used. Great care should be taken to keep the solution away from the eyes, nostrils, mouth, and tender parts."*

* The recommendation contained in the latter sentence is an error, at least so far as Condyl's Fluid is concerned; for perhaps no substance is better calculated to alleviate irritation and tenderness of those very parts.

From "The Right Use of Iron and other Remedies in the Cattle Plague," by Robert Druitt, M.R.C.P., &c. (September, 1865).

"We want experiments with large doses of the admirable preparations of Mr. Condry, namely, the Permanganate of Potash, &c.; but I suspect they are of more value as preventives than as curatives—to disinfect unwholesome water, to rinse the mouths of animals exposed to contagion, and the like."

From Mr. Marcus Pool, Cattle Salesman and Importer.

"14, Mount Place, Whitechapel Road,

"September 28, 1865.

"Gentlemen,—I consider it my duty to inform you, in justice to yourselves and for the benefit of the public, of the following results of the employment of your crimson fluid in treatment of the cattle plague."

[Here follow details of too great length for insertion here.]

"I am convinced, therefore, under such treatment it will act as a preventive as well as a cure.

"I am, Gentlemen,

"Yours, &c.

"Mr. H. B. Condry. MARCUS POOL."*

From Mr. J. R. Bateman.

"Archway Road, Highgate,

"28th September, 1865.

"Sir,—I have been using your fluid as a cure for the cattle plague, and am happy to inform you, that with perseverance and proper assistance I have cured one heifer that was in a very bad state, and a bull, that was also very ill, so far recovered that I turned him out to grass. I likewise took two cows, pronounced by the Inspector to be diseased, gave them the fluid, and they seem now quite well.

"I remain, Sir,

"Yours respectfully,

"Mr. Condry. "J. R. BATEMAN."

* Mr. Pool has employed the fluid extensively and with complete success in the cure of the "foot and mouth disease" for some time past.

From Mr. J. B. Waller, of Islington Market.

“Low’s Cattle Lairs,

“York Road, Islington,

“September 8, 1862.

“In my capacity of foreman to a cattle salesman and large importer of foreign stock, I beg to testify to the salutary effects realized from the use of Condry’s Fluid among cattle. As manager of the above-named lairs, I have used it with complete success among those beasts affected with “mouth and foot disease.” With fresh-calved cows I have also found it invaluable.

“Its use among horses is much to be desired, not only as a disinfectant, but likewise as a remedial agent.

“JOHN DREW WALLER.”

From Dr. Brewer.

“21, George’s Street,

“Hanover Square,

“19th August, 1865.

“Sir,—The Committee of the National Association for the Prevention of Cattle Diseases have deputed me to write to you, to inquire if you can

again supply them with the crimson fluid, in twenty-ounce bottles, as they have used up in experiments all they had. This week six cows, suffering from the rinderpest, have been treated with ounce doses of the red fluid in a quart of water three times a day, and to our surprise three have recovered. Yesterday they gave milk again, and this morning they were, to all appearance, quite convalescent. This has rather taken us all by surprise. The Committee are recommending the internal use of the red fluid.

“Yours, &c.

“W. BREWER, M.D.

“Mr. Condry, Battersea.”

from “*Recommendations of Professor Miller,*” published in Circular Letter addressed by the Privy Council to the Local Authorities, relative to the Cholera (July, 1865).

“For the purposes of artificial disinfection, the agents which most commonly prove useful are chloride of lime, quicklime, and Condry’s manganic compounds.”

*From Mr. W. F. Cross, M.R.C.V.S., Cattle
Inspector under the Privy Council.*

“I have had numerous opportunities of testing the detergent and healing properties of Condyl's Fluid. Used as a general disinfectant in pigeon-houses, aviaries, and other places where animals are kept, when disease has prevailed, I have found it, in the dilute form, of very great advantage in destroying morbid matter and arresting contagion.

“This preparation possesses one characteristic which renders it peculiarly valuable to the farmer: it is applicable not merely to one or two kinds of cases, but to all in which there is present any foulness to eradicate—to every species of animal; also to plants,* and to all sorts of matter.”

* The applicability of Condyl's Fluid to live plants and all kinds of vegetation, gives it great value in combating rinderpest, since infected pastures can by its means, be instantaneously purified, without the smallest risk of thereby suffering injury, as would be the case from the use of every other disinfectant.

From Mr. Musker, Gardener.

"I have great pleasure in giving my testimony to the excellent effect of Condyl's Fluid on vegetation. Having been troubled with the 'green-fly' on my lettuce and other vegetables, I was induced to try the Fluid, and have, from its use in the diluted form, experienced the most salutary results, in the disappearance of all the insects, and the general improvement in the growth of the vegetation. In all my experience of above thirty years as a gardener, I never met with anything to equal it.

"JOHN MUSKER,

"Walton Road, near Liverpool."

From Mr. Northmore, Gardener.

"Condyl's Fluid having been recommended to me, I have tried it for the potato blight, which has prevailed a good deal here, and found it do much good in arresting the spread of the disease.

"RICHARD NORTHMORE,

"Compton, near Plymouth."

From Mr. Frank Buckland, M.R.C.S.

“I can safely recommend Condyl's Fluid for cow-houses, badly drained stables, &c. It appears to me to be a most valuable and healthy life-preserver.”

From Baron Justus Von Liebig.

“I have myself made a series of experiments which have convinced me of the excellent effects of Condyl's Fluid in destroying bad smells, as well as the unwholesome contaminations to which drinking water is subject. It has proved itself of very great service for purifying the mouth, and washing the feet and other parts of the person. I consider it an inestimable means for the preservation of the health.”

Practical Instructions for the Treatment and Prevention of Rinderpest, as successfully practised by Messrs. Lundy and Todd, of Leith.

“Since the above, however, Mr. Todd, following out the same theory, has by experience found

the most successful practice, under whatever circumstances rinderpest is suspected, to consist in letting the animal's food be immediately changed, and avoiding all that requires the cud to be chewed to procure digestion. If unfortunately the plague manifests itself, the first symptoms observed will be dullness, loss of appetite, suspension of rumination, scanty secretions, constipation, redness of the visible mucous membranes, a full pulse about 70, slightly accelerated respiration colic pains, general fever, and thirst ; in which case give the following drench with a bottle or horn :—

“ Raw linseed oil, half-a-pint.

“ Condry's patent red fluid, two ounces.

“ Sulphuric acid, two drachms.

“ Pure water, one ounce.

“ Immediately thereafter, administer an injection of a quart of warm water, about blood heat, containing two ounces of Condry's red fluid, which injection should be repeated every four hours, unless the animal pass the fœces in a liquid instead of a semi-solid state.

“ One hour after the drench give twenty-five drops of Fleming's tincture of aconite in a third of a bottle of water, and between every drench twenty drops.

“Two hours after the first drench give the following dose, repeating it every two hours until five doses have been taken :—

“Condyl's red fluid, one ounce.

“Sulphuric acid, one drachm.

“Pure water, one ounce.

“And when the fever is reduced gradually reduce the strength and frequency of the doses, and discontinue the aconite altogether.

“If unhappily the animal proceed to the second stage, or the treatment has to commence at the second stage, which will be generally known by continued or increased dullness, costiveness of the bowels, the body cold with a staring coat, arched back, watery discharge from the eyes and nose, the inside of the nose red and swollen, ulcers round the gums ; in cows, marked purple streaks in the orifice of the vagina, entire stoppage of milk, a slight moaning or grunt occasionally, and with or without emphysema (puffed up with air between the skin and tissues along the back), give immediately the following drench every three hours, until five doses have been given :—

“Condyl's Patent red fluid, one ounce.

“Sulphuric acid, one drachm.

“Pure water, one ounce.

And if the bowels be costive add to the *first* drench a full pint of linseed oil, and give the injection as described for the first stage of the disease. Half-an-hour after every dose of the above, give one ounce of good coffee (without any chicory), made with half-a-pint of hot water, cooled down to a drinking warmth, and continue to administer the same quantity of coffee after each drench, in all cases giving the animal both the liquid and grounds, adding to the coffee ten drops of Fleming's tincture of aconite.

"If the fever is then abated, the strength and frequency of the drench may be gradually lessened, and the aconite discontinued.

"Should the treatment begin with, or the animal proceed to the third or worst stage of grinderpest, which may be known by the body becoming quite cold, and coat staring, arched back, with or without emphysema, diarrhoea, peeling of the mucous membranes of the vagina, eyes red and swollen, nearly closed, with an acrid discharge from them, nostrils a pale red, swollen, and a discharge of putrid matter therefrom, foetid breath, grinding of the teeth, moaning, greatly dejected appearance, and colic pains,

immediately administer as a drench every two hours, until five doses have been given:—

“Condyl’s patent red fluid, two ounces.

“Sulphuric acid, two drachms.

“Pure water, two ounces.

And, as soon after as possible, the same injection as prescribed for the first and second stages of the disease, but doubling the quantity of Condyl’s red fluid in it, proceeding *directly* to give, by the mouth, four ounces of good coffee in a pint of hot water, and cooled down so as to be given as hot as it is safe for the animal to drink it, adding to the coffee ten drops of Fleming’s tincture of aconite.

“In all stages of the disease, where constipation exists, raw linseed oil should be given as a laxative, and the injection of Condyl’s Fluid be promptly administered. As a sudorific and diuretic, in all cases, a pail of cold water, containing two ounces of nitrate of potash (saltpetre), should be left within easy reach of the animal to drink at pleasure. Especial care should be taken, at the commencement of the treatment, at whatever stage of the disease, or even when it is merely a case of suspicion, to sponge the animal well all

cover with water, containing in each pail one or even two wine-glassfuls of Condry's patent red fluid, rubbing the animal dry quickly and vigorously with cloths to excite warmth and perspiration, clothing the body with rugs, and bandaging the legs with straw.

"Keeping the stable from ammonia and bad smells by deodorisation and cleanliness, ventilation with warmth, but without drafts, and disinfection of the wood-work and floors, by liberal use of Condry's red fluid, with general attention to the comfort of the animal, is at all times an aid to both the prevention of the plague, as well as the cure of a diseased animal.

"When convalescence commences, the greatest care is necessary that only easily digestible food should be given, and for several days thereafter nothing but mashes and soft food be allowed, as many animals, after recovering from the plague, have died during convalescence, or from incautiously overfeeding them. Until the animal begins to get better, no food should be given during the first stage, only oatmeal and water in the second stage, and flour and water in the last stage."—*Second Edition of "Rinderpest, its Prevention and Cure; and Gypsum (or Sulphate of Lime), its Ad-*

vantages as a Manure, Deodoriser, and Sanitary Agent." By John J. Lundy, F.G.S., F.R.S.S.A. (Member of the Public Health Committee of the Town Council of Leith.) Edinburgh: William P. Nimmo, St. James's Square. London: Simpkin, Marshall & Co. 1866. Published February, 1866.

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