

CHAPTER IX.

Summary.

The propositions which follow from the perusal of the preceding pages, may be summarily placed in the following order.

1. For the sick-room, free ventilation, when it can be secured together with an even temperature, is all that can be required.
2. For rapid deodorisation and disinfection, chlorine is the most effective agent known.
3. For steady and continuous effect, ozone is the best agent known.
4. In the absence of ozone, iodine exposed, in the solid form, to the air is the best.
5. For the deodorisation and disinfection of fluid and semi-fluid substances undergoing decomposition, iodine is best.
6. For the deodorisation and disinfection of solid bodies that cannot be destroyed, a mixture of powdered chloride of zinc or powdered sulphate of zinc, with sawdust, is best. After this, a mixture of carbolic acid and sawdust ranks next in order; and, following on that, wood-ashes.
7. For the deodorisation and disinfection of infected articles of clothing, etc., exposure to heat at 212° Fahr. is the only true method.
8. For the deodorisation and disinfection of substances that may be destroyed, heat to destruction is the true method.

A MEDICAL CORONER. Mr. Bennett, a surgeon, has been appointed medical coroner for the Shaftesbury division of Dorsetshire, beating Mr. Chitty, a man of law.

MR. GAMGEE AND THE CATTLE-PLAGUE. The disease spreads more rapidly, and destroys much faster, than such means of cure as are known can follow; and therefore it is of more profit to kill, than to try to cure. This is the simple and serviceable ground which has been all along held by Professor Gamgee; and to this the farmers are rapidly coming. There is in Scotland at least a conviction that had Professor Gamgee's energetic counsels been taken at first we should not have been in these alarming circumstances. It has been the fate of Mr. Gamgee to see a little too clearly, and to speak a little too soon, for the class in whose interests he labours. He declared the disease imported; after much controversy, that is admitted on all hands. He urged the suspension or rigid supervision of the import of foreign cattle; the commissioner and the farmers have practically recommended the stoppage of the entrance of live cattle from abroad. He strenuously prescribed isolation and slaughter, as the sole effectual cure; and for the "killing cure" many of the farmers are now only too willing. He has long, almost if not quite alone, insisted on the necessity and advantage of a National Cattle Insurance Association, as a safeguard against the ravages of this and other epidemics; and the most influential meeting of agriculturalists that has been held on the subject of the plague has taken up the idea, and resolved in favour of just such a system of insurance. It is something for any man to have been right, and to have pointed the way, in a time of emergency and tumult of opinion—to have silenced and convinced opponents, and to have led those who have laughed at him. This Professor Gamgee has done, and it is but just that the credit he deserves should be given to him. (*Scotsman.*)

Original Communications.

THE CATTLE-PLAGUE AN ERUPTIVE FEVER.

By ROBERT CEELY, Esq., Aylesbury.

In his admirable Biography of Jenner, as well as in his Report of the Vaccination Section of the Provincial Medical and Surgical Association (*Transactions*, vol. viii), Dr. Baron has recorded several striking facts and referred to the observations of many high authorities for others illustrative of the pestilential and eruptive fevers of domestic animals.

He particularly alludes to Dr. Layard in England, and, long before him, to Fracastorius, Lancisi, Lanzoni, Ramazzini, and others in Italy. These references are certainly but brief, and intended chiefly to support his proposition "that cattle and other animals have for centuries been known to be affected with variola."

On this account, from the difficulty of access to the works of the authors above named, and with the view of comparing the facts and descriptions given by them of the epizootics prevalent in their times, with the terrible epizootic now unhappily raging in this country, I may be excused referring to these authors more in detail, and quoting one or two others whom he has omitted; particularly as the subject has been forgotten by some and is new to many.

Lanzoni thus describes the disease which prevailed in the duchy of Ferrara in the years 1713 and 1714 (*Lanzoni, Observationes*):—"Correpti boves cibum respuebant, aures subito collapsæ procidebant, pili erigebantur, tremor penè universalis aderat, oculi lacrymabant, per nares multa lymphæ copia exibat, alvus solvebatur, in aliquibus pustulæ sub cute prodibant, ita ut variolis boves ipsos affici crederent, tandemque septem dierum brevi spatio, magno cum cruciatu (ut ex mugitu apparebat) moriebantur."

Lancisi, describing the disease as it was introduced into Italy from Hungary in 1711, says:—"Neque vero quin febris affectos boves ureret dubitandum erat; namque non modo Veterinarii Medici, sed ipse ego in illorum arteriis carotibus et axillaribus summam semper, ac statim ab initio celeritatem, ac frequentiam deprehendi. Præterea quanquam ob nimiam cutis crassitiam neque exanthemata neque carbunculi in externâ boum superficie erumperent; singulis tamen, ubi teneriores sunt membranæ, scilicet in ore et faucibus phlogoses, pustulæ, ulceræ, et maculæ e vestigio apparebant. In super plerique boves hoc malo tentati peribant intra diem septimum, quod in peste frequentissimum est; pauci vero per abcessum, ac decubitu at mox dicemus, evadebant." (*Lancisi, De Bovilla Peste.*)

Dr. Layard, in his *Essay on the Contagious Distemper among the Horned Cattle*, published in 1757, says:—"All are not equally affected. The first appearance of the infection is a decrease of appetite; a poking out of the neck, implying some difficulty of deglutition; a shaking of the head, as if the ears were tickled; a hanging down of the ears and deafness; a dulness of the eyes, and a moving to and fro in a constant uneasiness. All these signs, except the last, increase till the fourth day. Then a stupidity and unwillingness to move, great debility, a total loss of appetite, a running at the eyes and nose, a husky cough and shivering. The fever, which was constant the three first days, now rises and increases towards evenings, pulse quick and contracted, a constant

diarrhoea of green faeces, etc. The roofs of their mouths and their barbes are ulcerated. Tumours or boils are to be felt under the pannus carnosus, and eruptions appear all along their limbs and about their udders. In the milk-cow the milk dries up. Great irritation is visible in the rectum. They groan much, are worse in the evening, and mostly lying down. These symptoms increase to the seventh or ninth day—the period of the crisis.”

In his prognosis he says—“If on the seventh day from the seizure, eruptions all over the skin, or boils as big as pigeons’ eggs in different parts of the body, but especially from the head to the tail, along each side of the spine.....If the nose be sore and scabbed, etc., the beast will recover. But, on the contrary, if on the seventh day the eruptions, boils or abscesses are decreased in bulk or totally disappeared, etc., etc., the beast will die.”

His *post mortem* descriptions also clearly indicate the identity of the disease of his and our own time.

In speaking of the emphysematous tumours which had arisen during life, he says:—“When opened they emitted foetid air, and sometimes a purulent and sanious discharge.”

In his “method of cure” he states—“that the nature of the disease directs the intentions of cure, and every different stage of the distemper points out the several curative indications. The analogy between this distemper and the small-pox will afford a rational process; and Ramazzini’s directions authorise the practice.*

Layard recommended inoculation of cattle, stating “that no indisposition was observed till the sixth day, which answers exactly to the observations daily made in the inoculation of children,” and gives directions for the treatment of the inoculated animals both before and after the eruptions have appeared. And in his essay on the usefulness of inoculation of the disease,† he adds:—“Whoever will compare the appearance, progress and fatality of the small-pox with what is remarked by writers of authority—Ramazzini, Lancisi, and other observers—relative to the contagious distemper among horned cattle, will not be at a loss one moment to determine whether the disease be an eruptive fever like unto small-pox or not.”

He repeats “that in his time the disease was everywhere the same—in Italy, France and Great Britain, and that it either terminated fatally on the fourth or fifth day, when a scouring prevented the salutary eruptions, or in some cases by abortions; and on the seventh or ninth day favourably, when the pustules had regularly taken their course.”

Dr. Brocklesby, in his *Essay concerning the Mortality now prevailing among the Horned Cattle in several parts of Europe, and chiefly about London* (1746), gives a more diffuse description of the rise, progress and decline of the disease, derived from his own observations of it in Holland and in England. It agrees, however, in every essential point with that of Layard.

He refers to the occurrence of “emphysema more or less extensive on the fore parts of the body,” and adds—“Frequently one may observe pustules break out on the fifth or sixth days all over the neck and fore parts; that death was occasionally sudden, sometimes on the third, mostly on the sixth or seventh day; very few lived to the fourteenth day.

His autopsies, as far as they go, are such as would be expected. He declares his conviction of the iden-

tity of the disease which he had seen the year before in the Low Countries, that which he was then describing from observations in London, and that described by Lanzoni in Ferrara in 1713 and 1714.

Dr. Blondet describes very correctly and concisely the general symptoms, and remarks “that the pulse is quickened some days before the distemper declares itself.” (*Dissertation on the Epidemical Distemper among the Horned Cattle in France*. Translated in 1751.) He alludes to the epiphora, the coryza, etc., and says: “The inside of the nostrils is overspread with little red vesicles with a blue circle around them, and the roof of the mouth is dry and covered with vesicles of the same kind.” He alludes to the cutaneous eruption, as seen both during life and after death; and, in seeking for the most comprehensive denomination of the disease, chooses as the most suitable, “*A burning pestilential eruptive fever*.”

Entertaining no doubt of the identity of the present deadly epizootic and that described by the above authors; looking at the rise, progress, termination and modes of propagation of the disease, and the pathology of the mucous membranes, I felt convinced that the disease would soon prove to be a malignant eruptive fever; and that a cutaneous eruption would be found in certain cases if carefully looked for. Such an eruption could not be expected in the early fatal cases, nor would it readily be discovered on the thick and hairy hide of the animal even in more protracted cases. A distinguished contemporary of Layard and Brocklesby had never seen the eruption; while Ramazzini declares “that not one of the cattle recovered but such as had pustules broke out on the skin.” (*De Bovum Contag. Epidem.*, p. 462.)

As soon, therefore, as the disease appeared in my own neighbourhood, I requested our veterinary surgeons to look out carefully for cutaneous eruptions. The next day I was introduced by them to no fewer than seven or eight animals exhibiting such in different degrees.

The eruption consists of roseola, papules, vesicles, and pustules. These are to be met with more or less readily in different cases on various parts of the skin, but more particularly about the *alae nasi*, the cutaneous surface of the lower lip, the cheeks and under the jaw. The sides of the neck, over the shoulders, and along each side of the spine, are very often thickly covered with the eruption. It is seen also about the buttocks, near the vulva, and on the prepuce and scrotum. Inside of the thighs it is often copiously evolved. In the milk cow, the eruption is often copiously developed on the udder, where it is sometimes accompanied with large circular or oval subepidermic vesicles. These, however, are of a totally different character. They are often met with in casual congestions of the organ, and are not specific.

The small, red, acuminate papulae are preceded and accompanied by patches of roseola more or less vivid in colour, according to the texture and colour of the skin in the locality. The presence of roseola, when not detectable otherwise, is marked, particularly about the *alae nasi* and angles of the mouth, the neighbourhood of the vulva, the prepuce and the scrotum, by heat, tenderness and swelling of the parts. On the udder, when the skin is fair and naked or the hair thin and white, the roseola is visible to the naked eye, as it is on the inside of the thighs. On parts of the body thickly covered with dark hair, it can be seen only by shaving that off. It may be suspected when the animal shrinks under light pressure.

Upon and near these patches of roseola, small red acuminate pimples arise, whose summits soon yield a limpid fluid, which as quickly becomes turbid and

* *Crediderim itaque in curatione hujus malignae febris, eâ methodo procedendum quæ a bonis medicis servatur in curandâ variolosa puerorum febre, distinguendo tempus ebullitionis a tempore expirationis.* (Ramazzini, *De Contag. Bovum Epid.*, p. 460.)

† In a letter appended to the third edition of his work addressed to George, Earl of Maclesfield.

puriform, and pass into crusts or scabs. These vesicles are often coalescent or confluent. When seen distinct, they occasionally acquire the size of a pea, if we may judge by the size of the crust and the magnitude of the succeeding scar.

The eruption is rarely detectable during life, or after death before the fifth or sixth day. It is, generally, readily detected in the stage of incrustation in convalescents, in some of the above mentioned localities. In such cases, if the crusts are picked off and the hair clipped, and the skin be thin, a superficial scar is visible. These crusts, when rubbed between the fingers, have a peculiarly unctuous feel.

Where the eruption has been actively and copiously developed, the epidermis and the hair become detached. This I have observed especially about the nose and angles of the mouth, the lower lip, and the udder. In one case, where the eruption was copiously developed on the integuments covering all four legs from the feet to the upper parts of the limbs, there was an entire separation of the epidermis and the hair: the same under the jaw. In this case, the internal affection of the mucous membrane was very mild. But it is after death, in severe cases, somewhat prolonged; and when there has been time for the full development of the eruption, the whole of these phenomena may be distinctly seen.

The superficial extent of the patches of roseola may then be traced, and the penetration of the inflammation into the entire texture of the skin be clearly seen. Pustules, isolated and in clusters, may then be found interspersed with petechiæ. The scars resulting from the previous pustules, in protracted cases, are best seen when the hide has gone through the first stage of tanning. I have seen, by the depilatory process alone, manifest indications of pre-existent eruptions, attended with florid discolorations, on the skin of a calf *two months after convalescence* from this disease, having died of pneumonia.

I am much indebted to veterinary and other friends in Norfolk for portions of recent and partially tanned hides, which have afforded me much information. From these specimens I have had made coloured drawings. The scars, made visible by the above process, though shallow, are foveolate. They vary in size; are more or less circular, distinct, coalescent, and often corymbose.

From the same source, through the kindness and zeal of Mr. T. W. Mayer, V.S.R.E.T., and Mr. Gooch of Keeppham, I have been informed of other interesting facts, which I cannot forbear relating.

"At the *post mortem* of a cow recently dead of cattle-plague, which was on the point of calving, the characteristic eruption was observed on the nose and vulva of the fœtus. There was also the hæmorrhoidal condition of the rectal folds of mucous membrane, similar to those of the mother."

Also, on the skin of a sheep which died of the cattle-plague, with unusually well marked pathological appearances in the mouth, fauces, trachea, Schneiderian membrane, etc., "the cutaneous eruption, similar to that in cattle, was observed. It was particularly well developed along the neck, lumbar region, thighs, and near the tail. On the buccal membrane, near the edge of the lip, the eruption was equally manifest." In this case, so characteristic were the pathological states of the above mentioned mucous membranes, and so closely resembling those in the ox, that I could not refrain from calling in the aid of my excellent artist, Mr. H. B. Tuson of Camden Town, to make a drawing of the parts, then in my possession, with which drawing I am well pleased.

[To be continued.]

BELLADONNA VERSUS OPIUM.

By JOHN ADAMSON, Esq., Rye, Sussex.

J. C., aged 60, a pilot, of intemperate habits, swallowed nearly an ounce of laudanum at 5 P.M.; and, having shut himself up in his house, was not discovered until two hours afterwards. When I saw him, soon after 7 P.M., he was under the full influence of opium; lying insensible, with a ghastly face, pupils much contracted, the breathing slow, pulse weak, not accelerated; the muscular system was so thoroughly relaxed, that the head fell backwards or forwards, like that of a corpse. An emetic of sulphate of zinc was given, without any effect. Upon using the stomach-pump (of the introduction of which the man was almost unconscious), only a small quantity of clear fluid was found in the stomach.

At 8.45 P.M., there being no indication of any improvement, half a drachm of tincture of belladonna (P. L. 1851) was given; and repeated at 9.30. At 10.30, there was given one drachm; soon after which, a decided improvement could be seen. The pupils were less contracted; the face less pallid; and the patient less torpid. At 12 (midnight), when he took another half drachm, he could understand questions, and make answers hardly intelligible; and could put out the tongue when directed. At 1 A.M., he was able to say at what hour he had taken the laudanum. A final dose of a drachm of tincture of belladonna was given at 2 A.M.

From the moment when he was first found until long after midnight, the energies of the assistants (six strong able-bodied mariners) were severely tasked to prevent his falling into most profound stupor. Half a minute's cessation was enough to send him dead asleep. No improvement was noticed until about 11 P.M.; that is, until after the third dose of the tincture of belladonna, which was of the P. L. 1851 strength.

It was subsequently ascertained that this man had swallowed seven drachms of the tincture of opium; that he had taken no solid food that day, and very little for some days previously; that he had not been drinking to excess that day; and that a squabble with his wife was the main cause of his attempting to destroy himself. The man took altogether three drachms and a half of tincture of belladonna between 8.45 P.M. and 2 A.M., with no ill effects, beyond some confusion of vision; of which, as well as of obstinate constipation, the patient complained next day.

STATISTICS OF THE POPULATION IN FRANCE. The females number 18,741,037, and the males 18,645,276, forming altogether 9,054,030 families. There exist 5,009,120 boys under age, and 6,106,321 girls. Of 8,579,046 unmarried persons, there are 4,479,850 females. There are 931,023 widowers, and 1,790,126 widows. Of the widowers 81 are only 20 years of age, and there are 820 widows of the same age. France possesses at this moment 1,529,154 girls of from 15 to 20 years of age, and 1,808,366 boys of the same age. The greatest examples of longevity are supplied by females. We find three females out of four unmarried persons who have reached the age of 105, and two widows who have passed that age. 17,371 French men, and only 13,409 French women, have lost their sight; 12,447 French men and only 9,509 French women are deaf and dumb; 22,319 French women have become insane, and only 2,472 French men. There are 23,407 male idiots, and only 18,118 female idiots. The female sex prevails in France, while it has constantly decreased in the city of Vienna since the year 1830, in the proportion of three-hundredths every six years.