

The



Diseases of Dogs

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The Diseases of Dogs,

THEIR

PATHOLOGY, DIAGNOSIS, AND TREATMENT :

TO WHICH IS ADDED

A COMPLETE DICTIONARY OF CANINE
"MATERIA MEDICA."

NEW AND REVISED EDITION.

BY

HUGH DALZIEL,

Author of "British Dogs," "Diseases of Horses," &c.

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P R E F A C E .

THE first edition of the "Diseases of Dogs" was written ten years ago, and has been so well received by those for whom it was specially written as to show that my endeavours to assist my co-philoknons have not been entirely futile. Thus encouraged, I have essayed another edition, considerably enlarged, and with some parts entirely re-written; which alterations and additions I trust may prove of practical value.

I ventured in my introductory remarks ten years ago to anticipate that the rapidly increasing number and value of pure bred dogs kept would lead veterinarians to pay more attention to canine pathology, and that these gentlemen would be more generally consulted by the public, to the exclusion of the old style of dog doctor, who, as a class, are as ignorant as pretentious.

That anticipation has already, to a considerable extent, and will still more largely be fulfilled in the immediate future; and at that I rejoice, for this little book, written by an amateur for amateurs, is not intended to take the place of the veterinary surgeon when such aid is required and can be had, but to assist in the treatment of the more simple ailments, and, in more serious cases, to bridge over the time between the discovery of the disease and the placing the patient in skilled hands, and preventing in the interim the dangerous pranks of ignorance which so often in short space effect evil that it is difficult or impossible to undo.

On the other hand, it is hoped that the information given will, with the aid of the common sense of the reader, enable him to treat ordinary diseases

successfully, and so keep down the doctor's bill. There is no need to run to a veterinary surgeon with every trifling ailment, and all men worthy of their profession dislike to be bothered with frivolous cases.

In preparing the present issue, I have consulted all the best authors on the subjects dealt with, and have endeavoured to express the best opinions free from technicalities, which purely professional writers are compelled to adopt for sake of exactness and to escape prolixity ; and I have also embodied the results of my own experience and observation, which, in connection with dogs and dog diseases, has now been very considerable ; and whilst sensible that the book may be charged with many defects, and probably some errors, I yet venture to hope it will prove still more useful to the dog owner than in its first form.

HUGH DALZIEL.



The Diseases of Dogs.

INTRODUCTORY.

IT is said that every man forty years of age should be his own doctor, and there is, I think, still more reason that every man who owns a dog, even without having attained the age of forty, should be his own dog doctor ; indeed, there is no one so well qualified as the master, for he best knows the peculiarities of habit and temperament of his favourite, and is therefore in the best position to administer to his ailments when " out of sorts." Dog doctoring is, indeed, a simple matter, and may be successfully practised if a few fundamental facts are borne in mind and a few ruling principles of action observed.

It should never be forgotten that health is the natural state, and that when disease is present, in nine cases out of ten it is the master's fault ; and before making the poor beast the receptacle for a lot of nasty physic, it should be asked whether his treatment is governed by that wisdom and care his devoted obedience and fidelity have a right to demand. The young gentleman who practises on the wonderful self-sacrificing obedience of Neptune, by repeatedly sending him into the water in cold weather to swim after nothing, need not be astonished if he afterwards finds him curled up in his kennel suffering the agonies of rheumatism ; and when darling Fido so frightens his mistress with that low moan, succeeded by that painful and prolonged howl, with his back arched, his feet tucked in towards each other, and vainly trying every possible posture to escape the pain, he is merely suffering the natural result of that last lump of sugar. True, Fido may have had sugar frequently without suffering in this way, but the last lump is the straw that breaks the camel's back ; and no surprise need be felt if persistence in the kindly-meant but objectionable practice induces repeated attacks of colic, ending in inflammation and death.

I would particularly impress on all who own dogs—especially young owners—that it is not only to their interest, but it is their duty to be true masters, ruling with firmness and kindness, and providing for all the

wants of the animal in lodging, food, and exercise on principles of common sense; and it must be evident that thus only can health be maintained. If a dog have not proper food provided at proper times, but be allowed to be the scavenger of the yard and the street, what wonder if he become loathsome and diseased, a nuisance to his owner and everyone else? If, on the other hand, he be pampered, petted, and stuffed with tit-bits and sweet cakes, he will lose all kindness of disposition (the great charm of a companion dog), and become a morose, peevish, snappish misanthrope, that your friends may praise, but dare not pat; he will lose all beauty of form, all sprightliness and elasticity of action, and become an unshapely, asthmatical lump of obesity, to whom the slightest physical exertion is a trouble. Ladies, who are the great offenders in this way, should remember that dogs are not valued—like prize pigs—for their fatness, and that they are never so healthy and happy as when in good working condition—that is, when they can take a good gallop without puffing.

Dog Doctors.—There are numerous varieties of the “dog doctor,” most to be avoided. First, we have the advertising quack, whose pills or potions work like magic, curing the most dangerous maladies in a few hours, after all other remedial agents have failed; next, we have that strange compound of the stable, the rat pit, and the tap room, with a reputation for “knowing all about dogs,” to whose tender mercies some gentlemen have the sublime simplicity to entrust their canine invalids. Again, we have the gamekeeper dog doctor, the genuine article—generally shrewd, intelligent, and observant, and who, having dogs constantly under his care, has the best of opportunities for studying their peculiarities of temperament, &c., both in health and disease, and which render his opinion always worthy of respect. His fault generally is a deep-rooted prejudice in favour of tradition and an invulnerability to the idea of a new remedy, forgetting, or not knowing, that the science of medicine has as surely advanced as the science of fire-arms, and that new and improved remedies as surely supersede the old as breechloaders have banished flint locks from the field and the moors. Gamekeepers are not, however, the only people who value a recipe handed down from their great grandmother without reference to its adaptability to altered circumstances. Draughts of medicine are not so palatable as champagne, nor the outward applications we are obliged to use as agreeable as Rimmel’s vinegar; but I confess I can see no reason why we should continue, in the case of mange, for instance, to use filthy compounds of whale oil and brimstone, which even some of the best writers still recommend, when we have a choice of remedies at least less disagreeable and more efficacious. Last, but not least, of the “dog doctors” is the qualified veterinary surgeon, who, with limited exceptions, is the only safe person to consult in serious and complicated cases, and whose hand alone can be trusted in delicate surgical operations. From the rapidly increasing number and value of pure bred dogs, I anticipate the veterinarian will be more often consulted in future, and I look for a large increase to our knowledge of dog diseases from this source.

Exercise.—This has an important bearing on the dog's health. There are few more naturally active animals than the dog, and it is unpardonable barbarity to chain or shut him up in a kennel for weeks together. Never chain a puppy if you wish him to grow into symmetrical form; he will pull himself out of all true shape. I have known people chain young dogs to make them savage; but they have been either foolish people or those of the "Bill Sikes" type, and I hope I need make no further observation on the brutal practice.

Feeding.—Full-grown dogs are never so well as when fully fed only once a day at a regular hour in the morning. Their food should be principally vegetable. I prefer as the staple food well-boiled oatmeal, and with it thoroughly cleaned panaches, sound horseflesh, good pressed buffalo beef (not the salt jerked beef), or other wholesome meat. This should be also well boiled, the best plan of cooking being to boil the meat first and add the meal to the boiling broth. Meat should be given in the proportion of one part to four of meal, but dogs required to do hard work need more meat, and that of the most nourishing kind, say, one part by weight to two parts meal. Where expense is considered, equal parts of Indian meal (ground maize) and oatmeal may be given, and there is a meal made from an Egyptian grain called Dari, which makes a good and remarkably cheap food for dogs, the price being about 12s. per cwt. After many years' trial on a great variety of breeds, I am convinced that the meat fibrine biscuits, as a staple food, cannot be excelled, nor have I ever found a single case of eczema caused by them, as alleged by some. The great convenience of them, too, is much in their favour. Whatever the staple food, a little boiled green vegetables, such as cabbage, should occasionally be added, and changes of diet are sometimes desirable. All dogs require bones, but very large hard bones should not be given to young dogs, as they are apt to break the teeth; fish and bird bones are also objectionable, as liable to produce choking. When no more dogs are kept than can be fed with the scraps from the table, there is nothing so good, provided the supply does not exceed the demand, and the dog does not make his diet too rich by picking out the meat and leaving the vegetables. Dogs should always have clean fresh water within their reach; this is most important. It is a common custom to put a lump of roll sulphur in the water, which, like the proverbial chip in the porridge, does neither good nor harm. If sulphur be required, the better plan is to give a little of the sublimed or flowers of sulphur in the food; in fact, nearly all the dog cakes and dog meals manufactured contain a trifle of it, and are improved by it.

Housing.—After feeding, the most important element in securing sound health in the dog is good lodgings. A cold, damp, or draughty kennel is almost sure to produce rheumatism, kennel-lameness, chest-founder, liver complaint, or some other dangerous ailment. A kennel should be warm, dry, airy, thoroughly ventilated, and free from draught, and I also think that not only should a dry spot, but, where possible, a more cheerful aspect, be chosen than is generally the case. It seems almost superfluous

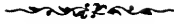
to add that the most scrupulous cleanliness is an absolute necessity of a healthy kennel, and that the frequent use of lime wash containing some disinfectant is a great preventive of disease.

Having very briefly pointed out the course of treatment most likely to secure immunity from disease, I will pass on to the more difficult but not less needful task of showing how to distinguish and treat it when it makes its appearance. I will endeavour to describe the symptoms preceding and accompanying each disease, and to give the proper treatment and remedies to be used under the various circumstances, in language as plain and free from technicalities as possible, so as to be of the most practical use to the dog fancier; and, as some guarantee of the value of the various recipes to be given, I may say they will embrace the whole of those used in the get-up of "*The Field Dog Medicine Chest*," now widely distributed through the kennels of the country, and under the sanction and approval of the highest authorities on such matters.

My object being to assist those who, like myself, are dog fanciers, in treating the diseases of dogs in a sensible manner, I will not attempt a classification, but follow an alphabetical arrangement as at once the easiest and most convenient, and, under the circumstances, the most practically useful method.

H. D.

DISEASES AND ACCIDENTS.



A.

Abortion.—Strictly speaking, abortion means the expulsion of the foetus before it is sufficiently matured for independent life, but applied to the lower animals it is generally used to mean premature parturition as well. Abortion is comparatively rare in dogs, but premature whelping, especially just a week or so before the pups are due, is by no means uncommon. The causes of abortion and premature parturition are various. A low diet, causing extreme poverty when the system requires extra support for the growth of the unborn pups, and the secretion of milk for them afterwards, is likely to cause it; and, on the other hand, a plethoric state of the body from over-feeding and want of exercise is also a likely cause, and very severe exercise, jumping from a height or over fences, and, what is too common, blows or kicks on the abdomen. It may also be brought on by drinking foul water, eating putrid food or anything likely to cause inflammation of the bowels, violent diarrhoea, and consequent straining. Young bitches bred from before the system is matured, and old worn-out ones, are most likely to abort. An attempt was made in 1880, strongly supported by the Rev. J. Cumming Macdona, to introduce rye bread, as made in Germany, as a staple food for dogs in this country, on account of its low price; but it was shown to be not really cheap, and its general use would be in the highest degree dangerous to bitches in whelp, from the fact that rye is so generally infested with its parasite ergot, which has a direct effect in producing expulsion of the foetus, especially in its advanced stage. Preventive measures consist in general attention to health, both in regard to the food and water given and the sanitary condition of the kennel, and the permitting of regular, but not violent, exercise, and in selecting only for breeding purposes bitches that are matured and in vigorous health. When a bitch has had her pups before the full time she should not be again bred from until at least one period of œstrum has passed.

Abscess.—The formation of pus or matter in or among the tissues is known as abscess; it may be the result of a blow or other accident, or caused by inflammation, local or general. After pupping it sometimes happens that one of the teats gets damned up, and this gives rise to local

inflammation, ending in abscess. When an abscess is forming there is unusual heat of the parts, and at first a hard lump, which, as the matter forms, becomes softer, and fluctuates under pressure of the hand. If the matter form very slowly it will be advisable to hasten its formation by hot fomentations, which, if used at all, it is important should be used continuously for considerable time, afterwards covering the parts to prevent reaction from the cold air; or a stimulating liniment or mild blister may be used, applied with a good deal of friction. A poultice is useful if it can be kept to the part, and the cleanest and best will be a piece of spongia piline—which can be had from any chemist—saturated with warm water, and applied the waterproof side outwards. The abscess is ripe for opening when the under part is soft and moves readily under pressure of the finger. To open it take the lancet between finger and thumb, and, plunging it well into the centre, make a clean cut downwards, so as to ensure good drainage; press the matter out, bathe with warm water and keep clean—this will in most cases be done by the patient's tongue. In cases where the abscess is deep seated, the practised surgeon should alone use the knife. The diet throughout should be light and nutritious; in many cases no medicine will be required, but a mild purgative may be given when the matter is forming, in which case a dose of the following is recommended:

Mild Purge.—Take syrup of buckthorn, 3 parts; ditto white poppies, 1 part; castor oil, 2 parts. Dose—a tablespoonful for a dog 16lb. or 20lb. weight. The bottle must be well shaken before the dose is measured. One word in reference to the old formula I have prescribed as a mild purge. There are various opinions as to the value of buckthorn. Some writers say it is inert. From my own experience I believe it to be a valuable cooling aperient, and I find the above mixture the most generally useful of all purgatives. I think buckthorn has got into undeserved disrepute through the rubbish that has been too often sold for it by those who seem to think “anything good enough for a dog.” The best plan for dog owners is to buy the buckthorn juice, as it keeps better than the syrup, which they can make as wanted by dissolving two parts by weight of lump sugar in one part of juice by the aid of a gentle heat.

As a rule dogs when convalescent recover quickly, but if after an abscess the animal is much reduced and the appetite impaired, he should have one of the following pills given twice a day:

Tonic Pills.—Take quinine, 12 grains; sulphate of iron, 18 grains; extract of gentian, 24 grains; powdered ginger, 18 grains; make into twelve pills. These will be found a most useful pill in debility after distemper and other lowering diseases, and in all cases of emaciation and want of blood, shown by the paleness of the gums, &c., and, to save repetition, they will in future be referred to as the “tonic pills.”

An abscess may form internally from a blow or wound, or in lung disease, in which latter case the matter would be discharged by the nose, and also coughed up, and in the uterus the discharge would be per vaginam; and other organs may be the seat of the disease, but none of these cases can

be well treated by the amateur, and should be entrusted to the veterinary surgeon.

Accidents.—See BITES, BURNS, CHOKING, DISLOCATIONS, FRACTURES, SCALDS, SPRAINS, WOUNDS.

Age, To Determine.—There is no certain indication of age to be relied on, as in the case of horses and cattle. The first, or milk, teeth give place to the permanent ones at about the age of six months, but in grown dogs the teeth are not by any means a certain index, some dogs having them white and entire until a considerable age, whilst in others, from disease, they are covered with a yellow deposit whilst the animal is yet young; and in regard to the natural wear and tear that, of course, is governed by accident, the kind of work the dog has been used to, and also to some extent the kind of food he has generally had. Bones, whilst an excellent thing for dogs, and assisting to clean the teeth—it is a common saying that a bone is the dog's tooth brush—yet large ones are apt to break and help to wear away the teeth. Speaking generally, however, after the third or fourth year the dog's teeth begin to show a deposit of tartar, yellow in comparison with the beautiful white enamel of the perfect ones. Persons accustomed to have dogs constantly about them can generally give a pretty shrewd guess as to age, but the most acute observers are often wide of the mark, so much do individual animals differ in the indications of age they offer to the eye. The approach of old age is evidenced by a staidness and gravity of manner, disinclination to excessive exercise except at the call of duty; the eye loses its lustre, it slightly sinks, and around it grey hairs appear, which gradually extend over the face; in pugs I have observed the black face turn grey at a very early age, and the more intense in colour the mask the earlier this change appears to take place. The longevity of the dog varies greatly. Blaine says he knew a mother and son in good health and vigorous at the ages of twenty and twenty-one, and Youatt says the dog has been known to linger on till he reached his two and twentieth year; and occasionally cases are reported of a much greater age, but I have never seen an instance supported by proof. A number of correspondents favoured me with communications on this subject in *The Bazaar* newspaper some time back, but only in one case could I feel satisfied that the dog had reached the age of twenty years, and that was a dog of no particular breed, and owned by a farmer near Guildford, and the strong corroborative evidence in substantiation of the fact left no room to doubt it. Dame Juliana Berners, authoress of the "Book of Hunting," commonly called the "Boke of St. Albyn's," writing of the greyhound, says :

When he is comyn to the nynthe yere
Have him to the tannere,
For the best hounde that ever bytche had
At nynthe year he is full badde.

Many dogs, however, retain almost pristine vigour until long past that age, but, as a rule, at fourteen or fifteen, if not at an earlier age, he becomes offensive in smell, and in many other ways a nuisance.

Amaurosis, or Gutta Serena.—This is a loss of sight, partial or entire, arising from one of several causes; the optic nerve is palsied, which may have arisen from a blow near the eye. Exhaustion from suckling will produce amaurosis, and bitches sometimes exhibit it during gestation; excess of light is also a cause. The eye is unnaturally clear and glittering, the pupil expanded and fixed, and that the dog is partially or entirely blind is seen by his stepping high and with needless care when nothing is in his way and running against things that are. If when you feint a blow the eye does not move, total blindness may be assumed.

In treating for amaurosis, attend to the general health. If the cause can be traced, remove it, and to assist cure a blister may be applied behind the ear and discharge kept up for a time, strengthening food and medicine being given. In case of blistering the dog's hind legs should be hobbled. It is always better, however, when such a delicate organ as the eye is the seat of disease to consult a qualified veterinarian.

Anthrax.—This is specially a disease of cattle, known in the vernacular as "black quarter," "black leg," "quarter ill," "joint ill," "hasty," "puck," "shoot of blood," &c., from which young and particularly fast-thriving stock die without giving, in most cases, any premonitory symptoms. Dogs partaking of the flesh of animals that have died of anthrax suffer from blood poisoning, therefore owners of kennels should be extremely careful that the carcasses offered them for feeding purposes are not of animals that have succumbed to this disease. Anthrax in dogs affects the mouth, throat, and digestive organs, and produces intense fever; vomiting and purging take place, the matter ejected being mixed with blood. In such cases give an oleaginous purge, and for a 30lb. or 40lb. dog ten grains of chlorate of potash and a tablespoonful of Mindererus' spirit and water every two hours; or dissolve a drachm of salicylic acid in a quart of hot water, and when cold give a tablespoonful of the solution every half hour for four doses, then a dose every hour. During convalescence give twice a day a pill of one grain each quinine and sulphate of iron and three grains of extract of gentian.

Anus, Polypus in the.—See POLYPUS.

Asthma is a common and distressing complaint, which is frequently the result of indulgence in a too plentiful and too rich diet, combined with luxurious idleness: hence we find its victims chiefly among lap dogs and other house pets, they being specially liable to it when getting old. The grossness of body which induces and fosters asthma also frequently causes at the same time a kind of scurfy mange, making the coat look rough and dirty, and giving it a harsh dry feel. Asthma is evidenced by distressing paroxysms of coughing with considerable difficulty of breathing—these symptoms occurring frequently. The first object is to relieve the animal from these painful attacks, and this is best accomplished by the use of the following medicine:

Anti-spasmodic Drops.—Take compound spirit of sulphuric ether, known as Hoffman's anodyne, tincture of opium (laudanum), equal parts, mix and keep in a well-stoppered bottle in a cool place. The dose for a dog

20lb. to 30lb. would be a small teaspoonful given in about two table-spoonfuls of milk, gruel, or other liquid.

This will relieve, but not cure the patient, and to remove one at least of the predisposing causes, the dog must have frequent doses of a brisk aperient; either a dose every morning of the buckthorn and castor oil mixture (*Mild Purge*), or the third of an ordinary black draught, or, what will be still better in many cases, a compound podophyllin pill every night, the form for which will be found in a future page. In addition to this treatment he should be induced or compelled to take such exercise daily as will make him readily eat coarser food. His meals should be given rather often, and in small quantities. If the disease has become confirmed or chronic, the chance of complete cure is very remote; but the regular use of the following pills will have an astonishing effect in counteracting the liability to severe paroxysms:

Cough Pills.—Take powdered ipecacuanha, 6 grains; powdered opium, 6 grains; compound squill pill, 24 grains; powdered gum ammoniacum, 24 grains; powdered liquorice, 24 grains; powdered rhubarb, 12 grains. Mix, and make into twenty-four pills; dose for a 20lb. to 30lb. dog, one pill night and morning. As these pills have been found to have a wonderful effect in giving relief in all affections of the respiratory organs, and will be wanted again, they will be referred to as the “cough pills.”

In some cases it may be requisite to apply a quick blister to the front and sides of the chest, and strong liquid ammonia will be found an efficient and cheap one. When severe fits of coughing, with difficulty of breathing, occur, if the anti-spasmodic drops are not readily obtainable, chlorodyne, which is kept in many houses as a family medicine, may be given in the same way as the drops, the dose being from ten to twenty drops.

Veterinarians distinguish between congestive and spasmodic asthma, but for the purposes of the amateur it is better to deal with it as one disease, the difference being too nice for most non-professionals to discriminate; the main and readily distinguishable difference is the more constant exhibition of symptoms in the former, the breathing always being laboured, and producing a wheezing sound, the spasmodic violently affecting the dog at intervals.

Much relief is given to asthmatical dogs by confining them in a close box kennel and filling it with the smoke of stramonium (thorn apple). This may be done twice a day with advantage, and care should always be taken with such patients not to subject them to any sudden great change of temperature, whether from heat to cold or the reverse.

B.

Balanitis.—Inflammation of the prepuce or mucous membrane of the glans penis, giving rise to discharge. See PENIS, DISCHARGE FROM.

Bites.—Although Dr. Watts was not strictly correct in saying that “Dogs delight to bark and *bite*,” yet, unfortunately, some of them do, although generally in self-defence, or at the call of supposed duty, and whether the sufferer be one of his own species or not, it is well to attend to it promptly. Wash the wound with tepid water, press out any blood, and pour in a little friars’ balsam or compound tincture of myrrh. If a dog has been bitten by a strange one, and there is any cause to suspect it of being rabid, if the wound cannot be immediately cauterised or similarly dealt with, the bitten dog should be destroyed if of no great value, or if valuable, isolated until the time has passed for any fear of madness developing. See article RABIES.

Bladder, Inflammation of.—This is evidenced by great pain on the application of pressure over the region of the bladder; the urine is passed in small quantities at frequent intervals, and evidently with considerable pain. Inflammation of the bladder is frequently the result of a blow, but it may be produced by prolonged exposure to cold and wet, and is not unfrequently the result of the unwarrantable administration of cantharides, &c., by the ignorant. The treatment consists in first giving a brisk purgative; nothing in this case is better than half of an ordinary black draught, but if this does not act it will be well to assist it with clysters of lukewarm soap and water or thin gruel. When the bowels have been freely opened give a dose of the “fever mixture” every six hours.

Fever Mixture.—Take powdered nitre, 1dr.; sweet spirit of nitre, $\frac{1}{2}$ oz.; Mindererus’ spirit, 1 $\frac{1}{2}$ oz.; wine of antimony, 1dr.; water, 4oz. Mix—dose for a dog 20lb. to 30lb. weight, one tablespoonful every four hours in a little gruel.

The patient will experience relief if the parts are bathed continuously with a warm infusion of poppy heads, or warm water alone, care being taken that he is not afterwards exposed to cold. The dog’s diet during the existence of the disease should be light and nourishing. There is an irritation of the bladder, which results in a constant discharge of fluid, causing great trouble and annoyance, and which, especially in the case of house pets, becomes loathsome. In such cases the dog’s diet should be considerably reduced, at least in quality; he should have open air exercise in good weather, a strong dose of podophyllin pills should be given, and the fever mixture every six hours, the parts should be well bathed with warm water, and from two to four leeches, according to the size of the dog, applied; the bleeding afterwards being encouraged by hot fomentations. The food should consist of strong mutton broth made with Scotch or pearl barley, porridge, and milk, &c., but nothing of a heating nature. If there is an inability to urinate, the bladder should be emptied by means of a catheter. When the dog is convalescent, to prevent the

disease becoming chronic, of which there is considerable danger, the following drops must be given twice a day, either in the food or as a drench, mixed with gruel or other liquid :

Cantharides Drops.—Take tincture of cantharides, tincture of iron, tincture of henbane, of each 1dr. ; dose for a 30lb. to 50lb. dog, fifteen to twenty drops twice daily as directed. See also PENIS, DISCHARGE FROM.

Blain.—This is a vesicular swelling of the tongue along the sides and underneath. It comes on suddenly, is most frequent in spring and summer, and appears to be epidemic—many cases occurring in the same neighbourhood at the same time ; it has not been shown to be contagious. Horses and cattle are even more subject to it than dogs, and, although it is not a fatal disease, it is a very troublesome one.

The symptoms appear without warning, and apparently without cause. The first thing generally observed is a considerable increase of saliva, which dribbles from the mouth. On examination the tongue will be found raised up and considerably swollen, and, if the disease has lasted any time, large livid vesicles, and at their base small ulcers, which ultimately assume a gangrenous form, and discharge foetid matter tinged with blood. Before this is noticed it will probably have been observed, in house dogs or pets, that the breath is very foetid.

If observed in its early stage, give a dose of aperient medicine—buckthorn and oil or black draught—every morning for four or five days. If the vesicles are large make an incision with a lancet, and sponge the tongue with tepid water, with one part of saturated solution of chlorinated soda to ten parts of water ; or a dessertspoonful of Condy's Fluid to a pint of water. If the ulcers assume a very unhealthy form they may be touched with a point of caustic, but this requires great care, or it will spread over the surrounding surface, causing great and unnecessary pain. After the aperient medicine tonics should be given, for a dog 30lb. to 50lb. weight one of the following pills twice a day : Pure sulphate of iron, 1dr. ; extract of camomile, 1½dr. Mix, and divide into twenty-four pills. Whilst blain exists the food should be entirely soft—oatmeal porridge, broth thickened with stale bread, &c.

Blindness.—See CATARACT, OPHTHALMIA, AMAUROSIS, or GUTTA SERENA.

Blisters.—See general remarks in *Canine Materia Medica* at the end of this book.

Boils.—This term, being in common use, is well understood. Boils are not very common on the dog ; when they appear a poultice of some kind should, if practicable, be kept constantly applied, in order to bring the boil quickly to a head, when it should be opened with a lancet, the matter well squeezed out of it, the part well washed with tepid water, and then dressed with the following ointment : Turner's Cerate (*Ceratum calaminæ*), 1oz. ; precipitated chalk and glycerine, and carbolic acid, each 2dr. ; mixed. If bicarbonate of soda—dose, ten grains for a 30lb. dog—be given three times a day it will check the tendency to form boils.

Bones, Broken.—It can be ascertained that a bone of the leg is broken

by taking hold of the limb above the supposed fracture and moving the lower portion against it, when a grating or crackling of the broken ends against each other will be felt or heard. The treatment consists in adjusting the fractured parts to their natural form, and applying splints to keep the parts set. Splints may be made of strips of gutta percha, softened in warm water, and moulded to fit the limb, or pieces of thin wood may be cut the required size, and well padded with wadding. The splints can be kept in place by binding evenly with light calico bandages, which previous to application have been smeared with the following preparation whilst warm: Take Venice turpentine, Burgundy pitch equal parts; melt, and smear over the bandage whilst hot. If much swelling occurs, it will be necessary to slacken the bandages, and in most cases it will be requisite to muzzle the dog, to prevent him tearing off the splints. Perfect rest will be required, and the general health attended to. The time it will take for the bones to unite is uncertain, but always tedious. An excellent and very convenient description of splints for fractures is made by Mr. Linton, Chemist, Princes-street, Edinburgh. In use it has to be first softened in warm water, when it can be pressed around the fractured part, and made to take its exact form; it soon hardens, and is kept on until the bones are again joined and consolidation of the tissues is complete. Only simple fractures should the amateur attempt to deal with; *comminated* fractures, where the bone is broken into several pieces and compound fractures, wherein the soft parts are torn and the ends of the broken bone exposed, should be left to the veterinary surgeon. See also FRACTURES.

Bowels, Obstruction of—Constipation or Costiveness.—Dogs are peculiarly liable to costiveness, and, as Youatt states, “it is a disease when it becomes habitual;” but a very little care and attention on the part of the owner easily prevents that. In the tendency to costiveness of course individual animals differ, and should be treated accordingly. Although bones are excellent and almost necessary to a dog’s health, an excess of them is to be avoided, as also of any kind of dry food, neither should the dog be kept constantly to one kind of food; indeed, want of exercise and absence of necessary variety in the food are the principal causes of constipation, which is therefore shown to be the result of ignorance or neglect, and comes under the head of preventable diseases: Whether looked upon as a disease in itself, or as a symptom and attendant on other diseases, it is always troublesome and often becomes dangerous. The fæces accumulate and get pressed into hardened lumps, the belly is distended and hard, and colic pains occur, driving the dog almost frantic and causing him to run about blindly, stumbling over different obstacles that happen to be in his way, and to give utterance every now and then to sharp howls of pain. As already stated, all this pain and misery the poor beast has to suffer is in nearly every case the result of neglect of proper rules which every dog owner should, in common justice to his dog, be acquainted with and observe. But the evil does not end even here, for it is the too common practice, after having committed a mistake of omission, to rush into one of commission quite as great or greater—namely,

the common practice in constipation of resorting to strong purgatives, such as Epsom salts, jalap, calomel, aloes, &c., the consequence of giving which is to render the evil worse by forcing the fæces into still less compass, whereby it becomes more impacted and hardened than before. The proper course to follow is, when the dog is in great pain, administer a dose of the "anti-spasmodic drops" (p. 12). Success in relieving the patient is best attained by mechanical means. Clysters of thin oatmeal gruel, or soap and water, lukewarm, and containing about one ounce of castor oil in each half pint, must be used continuously for some time, in fact, till the desired object has been attained. This end will be greatly facilitated by first introducing the finger oiled, or a small bone spoon, into the rectum, and removing as much of the hard lumps of fæces as can be reached. Assistance will also be given to the action of the clysters by gently pressing or kneading the belly at intervals with the hand. It is necessary that everything should be done with the greatest gentleness; boisterous conduct and rough handling are likely to alarm the patient and cause him to do himself irreparable injury. When the lower bowels have been emptied, follow it up by giving the dog a strong dose of the podophyllin pills, and try and induce him to lap some warm broth or gruel. The use of purgatives must not be resorted to to prevent a recurrence of the disease. The system of management must be altered, the dog must have daily exercise, the food must be varied, and embrace a portion of boiled green vegetables, at least every second or third day. For a week or so after the attack rather sloppy food should be given, such as well boiled porridge and milk, or broth, and an occasional meal of boiled liver will act as a gentle laxative.

OBSTRUCTION FROM FOREIGN BODIES IN THE INTESTINES.—This is another cause of obstruction in the bowels to which dogs are peculiarly liable. Pieces of bone are swallowed of such size and substance that they pass through the digestive organs very slightly diminished, and, getting into the smaller intestines, cannot pass farther, so that fæces accumulate and harden until, if not relieved, inflammation is set up; sometimes stones are swallowed and cause obstruction, a warning against the foolish practice of throwing stones for dogs to fetch. In their eagerness they are apt to swallow small ones, and, of course, there is the objection also that it makes the dog hard-mouthed and spoils his teeth. Wool or rabbit fur swallowed is likely to ball together with other matter and block the passage, and a case recently came under my observation of a bull bitch suffering from obstruction of the intestines from a ball of straw which she had swallowed bit by bit, from having her meat, boiled paunch, thrown down to her in pieces among her bedding.

INTUSSUSCEPTION, that is, the slipping of one portion of intestines that has been contracted by spasm, within another part retaining its natural diameter, is another not uncommon cause of obstruction; this is apt to take place during spasmodic colic. Intussusception cannot be determined by symptoms, but is discovered on *post mortem* examination; the obstruction consequent upon it sets up inflammation, ending in death. Dogs should not be allowed to be costive *more than two days* without the

means for their relief already described being resorted to. It is always safe and generally advisable in such cases to give a full dose of olive, linseed, or castor oil, or a mixture of them.

WORMS are another cause of obstruction in the intestines, especially in pups; round worms get coiled into balls, set up local irritation and interfere with the natural action of the bowels. This source of obstruction will, however, be more fully treated in a future page when treating of worms.

Bowels, Inflammation of. — The severity and very dangerous character of this disease in the dog is such that perhaps the very best advice that can be given to the amateur who finds his valued dog attacked by it is, Send for a qualified veterinary surgeon without delay. The owner may however, be possessed of sufficient self-confidence as to wish to try his own skill in treating the disease, or the animal may not be considered of sufficient value to incur the expense of employing a professional man, although there may be every desire to save the animal's life; and if I can help in any such commendable endeavour without encouraging useless and ignorant experimenting at the cost of torture to the dog, I shall feel that I have been of some little service. Whatever course is determined on, whether home treatment or the calling in of professional aid, the decision should not be taken till the symptoms have been carefully and minutely observed, and the greatest attention must be paid to them, else there is every fear of the amateur confounding it with and treating it as colic, a disease which, although strongly resembling inflammation in some of its symptoms, differs widely in others, and requires totally different treatment. Colic, if neglected or if wrongly treated, may, and frequently does, end in inflammation, but it is in itself a distinct ailment, and the same remark equally applies to constipation or obstruction of the bowels. As inflammation of the bowels or enteritis is one of the most fatal diseases to which the dog is liable—frequently carrying him off very quickly—no half measures will do for it; but, having ascertained clearly from the prevailing symptoms that the disease is actually present, remedial measures must be adopted with promptitude and energy. The main causes of the disease are irregular or improper diet, or it may be irritation caused by the dog having swallowed some hard indigestible substance; exposure to cold and wet may produce it, and it is sometimes the result of ill-usage, such as a kick. Inflammation of the bowels may be distinguished from colic in being more gradual in its approach, and is always ushered in by general feverishness; the nose is hot and dry, the eyes red and inflamed, and the whole countenance is expressive of great anxiety; shivering fits occur, the belly is hard and distended, and the surface hot to the touch; the urine is generally scanty and high coloured. As in colic, when standing, the back is arched, the feet are drawn in towards each other, and the tail is tightly tucked between the legs, or the dog may steal into a quiet corner, stretch his legs out before and behind, and crouch with his belly on the ground, probably finding temporary relief by bringing it in contact with the cold floor or ground; the dog may, at

the same time, be observed to frequently turn an anxious face towards his flanks. Another safe and pretty certain way of distinguishing between enteritis and simple obstruction or colic, is by pressing the hand along the belly; in the latter diseases, especially colic, the rubbing gives relief, whereas in inflammation it evidently causes acute pain; the cry of pain given by the dog in this disease is shorter and sharper than the rather prolonged howl in colic, but to distinguish by this symptom would require finer discrimination than can be reasonably expected from the comparatively inexperienced, for whom I presume to write. I may here mention the fact that enteritis is very commonly a complication of that "scourge of the kennel," distemper, and this fact alone sufficiently shows the folly of trusting to any single medicine, pill, powder, potion, or any so-called specific whatever for the cure of that disease. The treatment proper in the disease under consideration consists in getting the bowels relieved as speedily as possible by the mildest means that can be used, constipation being generally present; for this purpose the use of clysters every fifteen minutes, as recommended in obstruction of the bowels, should be resorted to, and the injections must be used gently and with as little fuss and annoyance to the patient as possible. When the clysters begin to take effect, the evacuation of the bowels should be assisted by a dose of castor oil. From six to twelve leeches, according to the size and strength of the dog, should be applied to the belly, and after they have filled themselves the bleeding from the bites may be encouraged by bathing the whole surrounding parts freely and continuously with warm water. Many of the best writers on dogs recommend giving calomel and opium combined, and it may appear presumptuous in me to offer a contrary opinion; but *experientia docet*. I have given calomel to dogs in this disease and many others, but I do not think I ever once gave it without making the patient worse; so I have long discarded it, in the firm belief that it is not a medicine at all suited to the dog, and I am quite certain from my own experience, and feel sure the best veterinarians will bear me out, that the abusive use of calomel and other forms of mercury, given too often in immense and poisonous doses to the dog, by country farriers and others ignorant of its properties, and who work by the rule of thumb, is a not infrequent cause of inflammation of the bowels. Instead of calomel, I have in several cases used the following with excellent effect. Take true James's powder, 3 grains; powdered opium, $\frac{1}{2}$ grain; in one powder. Give one every two hours till three are given; large-sized dogs require double that dose.

If happily the dog get over the attack, with signs of returning health great weakness will be evident, and this must be met by good nursing and a generous, but easily assimilated, diet. Beef tea, thickened with bread, rice, &c., will answer well. The diet must be so varied as to keep the bowels open without the use of medicine. When well on the road to health, progress will be accelerated by giving the "tonic pills" (p. 10) twice a day, or the following may be substituted, which several of our largest exhibitors constantly use and prefer to the pills.

Concentrated Tonic Mixture.—Take concentrated decoction of yellow bark, compound tincture of bark, loz. each; mix; dose, from half a teaspoonful to two teaspoonfuls, given twice a day in water. This mixture is often used in preparing dogs for exhibition, and to render the coat fine, glossy, and brilliant; there should be given with each dose of it from four to eight drops of Fowler's Solution of Arsenic. This is a wrinkle worth the attention of would-be prize winners; it should be given with regularity for three or four weeks prior to the show.

Brain, Diseases of.—The bony covering of the brain is in the dog very strong, still they are liable to accidents from falls on the head, running full force against obstacles, as in coursing, which cause *concussion* of the brain, and the same results from blows, accidental or designed. The dog lies stunned and insensible, the breathing is slow and feeble, and the pulse small and quick.

In treating the head should be examined to see if there is actual fracture of the skull, and if there is bleeding it should be stopped by cold applications. The case should be committed to a veterinary surgeon, who, to prevent inflammation succeeding, will probably bleed locally; but when the accident occurs, brandy, or other spirits at hand, should be rubbed on the gums, and the body should be kept warm; if a smelling bottle, or ammonia in any form, is obtainable, it should be held to the nostrils.

WATER ON THE BRAIN.—Mr. John Woodroffe Hill, F.R.C.V.S., Professor of Veterinary Medicine Wilts and Hants Agricultural College, in his exhaustive work on dog diseases, makes the following pertinent remarks, which should be noted by all dog breeders, and especially by that class—by no means a small one—who think they can successfully indulge their whims in defiance of Nature's laws. Mr. Hill says: "Hydrocephalus, or water on the brain, is by no means an infrequent canine affection. It is invariably congenital, and is more particularly seen in high-bred dogs, and especially where the in-and-in system of breeding has been adopted. Several instances have come under my own observation attributable, in my opinion, to the latter cause. In one or two cases absolute idiocy existed, the animals performing absurd motions, and alike regardless of petting or scolding. They were diminutive black-and-tan toys, and, if I may be allowed the expression, 'bred to death;' destitute of hair on the ears and skull, the latter unsightly and large, the eyes painfully prominent and expressionless, the body deficient in symmetry, and the limbs distorted. And some of the defects named were considered by the creatures' owners as indications of the purity of the strain, and animals of this type are kept, regardless of entreaties to destroy such insults to nature, for purposes of breeding. Fortunately, however, nature rarely sanctions issue from such parents."

In addition to those symptoms I have named, paralysis is very frequently present, usually in the hind limbs, which, in locomotion, are dragged after the animal. There is also often a great disposition to sleep, but it is generally disturbed by fitful starts and suppressed moans, and the eyelids during that period are only partially closed.

I have no remarks to offer on the treatment of canine hydrocephalus, beyond observing that the measures adopted in human practice—compression, puncturing, and the various medicinal agents—might be tried, and possibly with success, in those cases where exceptional reasons for saving animal life and removing the unnatural effects of the disease existed.

INFLAMMATION OF THE BRAIN.—The meninges, as the membranes enveloping the brain are called, are liable to inflammation. In this affection there is great drowsiness, with sudden spasmodic movements of the muscles of the head and chest during sleep. The disease is often preceded by fits. In this, as in other affections of the brain, there is a disposition to walk in circles, and always to the one side, and the sight is so affected that the poor dog runs against obstacles. This appears to me a not infrequent complication in distemper.

TURN-SIDE.—This is by some supposed to arise from the presence of hydatids in the brain. See article **TURN-SIDE**.

Bronchitis.—Inflammation of the bronchial tubes, or windpipes which convey air to the lungs, the upper portion of which is called the larynx, covered with the epiglottis, the use of which is to prevent the passage of particles of food into the windpipe. When the inflammation is confined to the upper portion of the windpipe, or larynx, it is termed *laryngitis*. But it is needless, in a book like this, to make too nice distinctions when the symptoms and treatment are so similar.

Exposure to damp and cold; being kennelled where foul and irritating emanations are breathed; neglect of common colds are the chief causes. Slight inflammation of the larynx is also caused sometimes by excessive barking, as at dog shows, and drovers' dogs may often be noticed to suffer from it by their partial loss of voice and hoarse husky bark.

When the larger air pipes alone are affected, the dog suffers from a short dry intermittent cough at first, which in a few days becomes more frequent and moist, and mucous matter is discharged from the nose and also coughed out; but when the smaller branches are attacked, there is pretty constant wheezing, the cough is more severe, frothy matter, often tinged with blood, is expectorated, the breath is hot, mouth and nose dry and hot, the eyes red and inflamed, the tongue parched, and the pulse is small and considerably increased, the discharge from the nose becomes thick and copious, and the patient suffers from violent sneezing.

The patient should be placed in a tolerably warm room, where there is a fire, if possible, and if a kettle with a long spout is kept boiling: so that the steam is distributed through the apartment, it will prove very beneficial to the dog. The fireplace will also ensure ventilation, which is always important. In the first instance give five grains of true James's powder, and the bowels should be gently acted on by a mild laxative and by food such as broth or porridge with bits of boiled liver added. The following medicine, in the form of a thin electuary, should then be given every three hours:

Electuary for Bronchitis and Sore Throat.—Take chlorate of potash

3dr. ; wine of ipecacuanha, 3dr. ; tincture of opium, 2dr. ; powdered liquorice root and powdered gum acacia, each $\frac{1}{2}$ oz., and oxymel of squills, 1oz. Mix, and give to a dog 40lb. to 60lb. weight a teaspoonful every three or four hours. See that the ingredients are well mixed before giving the dose, as they will have a tendency to separate, and in giving the medicine place it well back on the patient's tongue, and let it dissolve and be swallowed gradually. It is sometimes advisable to blister the throat and front of the chest, and in most cases a good rubbing with a strong stimulative liniment will be of service. Vinegar and mustard may be used, or the following : Spirits of turpentine, $1\frac{1}{2}$ oz. ; oil of organum, 1oz. ; tincture of cantharides, $\frac{1}{2}$ oz. ; spirit of hartshorn, 1oz. ; rape oil, 2oz. Mixed.

Bronchitis often assumes a chronic form, especially in old dogs, when there is a constant husky cough, bringing on retching and discharge of phlegm, and in such cases the breathing is short and thick and the animal incapable of much exertion. Nothing can be done towards cure, but alleviation may be given by administering, when it is unusually bad, a little oxymel of squills and thick mucilage of acacia mixed in equal parts ; a dessertspoonful to a tablespoonful may be given several times a day.

Bronchocele.—An enlargement of the thyroid glands, that is, the principal cartilage of the larynx. See GOITRE.

Bruises.—When there is much swelling, bathe for an hour with warm water, and having well dried the parts, rub in the following.

Liniment for Sprains, Bruises, &c.—Take spirit of turpentine, liquid ammonia (not the strongest, but the spirit of hartshorn of the shops), laudanum, rape oil, equal parts ; mix to form liniment.

If the skin be broken, touch the wounds with tincture of benzoin (friars' balsam), and rub the liniment all round, but not into the broken skin.

Burns and Scalds.—Dogs allowed to run at large without their owners' supervision encounter many dangers, and are apt to get into mischief—I might say into hot water—and although owners may reasonably expect dogs to be punished when on trespass, that is no justification for the cruel and malicious to scald or burn the poor beast, who is not to blame when, following his instinct, he seeks the slaughter-house. Of course, a burn or scald may be the result of pure accident, and oftenest happens to that class technically termed "cinder worriers ;" but I have known cases where the injury was maliciously inflicted, and it should be a warning to owners to take proper care of their dogs, as a severe burn or scald is sure to blemish for life. The best application to either burns or scalds is the preparation known as Carron oil, which is made by mixing equal parts of linseed oil and lime water. It should be applied freely, and as soon after the accident as possible. As a useful remedy it should be kept in every house, especially every country house, as well as in the kennel, but in all cases the dog should be kept quiet, receive plain food, and a mild aperient. A burn or scald, if severe, often gives a violent shock to the system, and symptoms of illness arising from it must be observed and treated according to circumstances. The Carron

oil is best applied direct to the wound alone, and then immediately thickly covered with cotton wool to exclude the air from the bladders formed, since they should, on removing the dressing, be pricked with a needle or point of lancet, the skin smoothed down gently, and the dressing re-applied, taking care no hairs or other irritating substances are left on the sore places.

C.

Cancer.—This is a disease which cannot be safely treated except by the professional man, and fortunately it is not of very frequent occurrence in the dog. The main thing for the dog owner is to be able to distinguish between cancer and other forms of tumour with which it is often confounded, especially those occurring in the teats of the bitch. Mr. Meyrick, in "House Dogs and Sporting Dogs," makes the following concise remark, which will materially assist the amateur in deciding the question: "Cancer can be distinguished from other forms of tumour by its adhering to the skin, by its peculiar knotty feel, and by its undefined nature, unlike the common tumour, of which the whole extent can be felt by the fingers." I believe it is not until the cancer has grown considerably that it becomes attached to the skin, but as I believe it to be an excellent general rule to hand over all abscesses, tumours, &c., except of the most superficial character, to the care of a qualified practitioner, and as the animal's life may be prolonged, and much unnecessary pain avoided, by having the cancer cut out in its early stage, I say do not wait for certainty, but on suspicion consult the veterinary surgeon.

Cataract.—Cataract consists of an opacity of the eyeball in the form of a whitish opaque spot, which gradually enlarges and generally ends in blindness; it may be the result of inflammation or of a wound or blow, but it generally occurs in aged dogs, and is then an evidence of failing health, and the probable breaking up of the system. I know of no cure for it, but it may be warded off by paying extra attention to the general health, good food of a kind easily assimilated, gentle exercise, good housing, and particular attention to cleanliness, keeping the skin perfectly free from scurf and dirt by good daily cleansing with a hard brush. The "tonic pills" (p. 10) may be given with good effect.

Catarrh or Cold.—Dogs that live in freedom, although much exposed to changes of temperature and weather, are not so liable to attacks of cold as the more delicately reared, in whom a sudden change from the close atmosphere of the room to the open air, or exposure to a drenching shower, will almost certainly produce cold. The first symptoms are chilliness, with shivering and evident languor, succeeded by a hot, dry nose, with a thin discharge, which gradually thickens if the disease proceed, hot skin, dulness about the eyes, with other evidences of fever,

according to the severity of the case. There is more or less discharge from the nose, sometimes accompanied with sneezing; and if severe, and the bronchial tube be affected, a cough will be the result. It is pretty well understood, when applied to ourselves, that a cold uncared-for is most likely to lead to serious illness; and it is no less true of the dog. In puppies common cold may usher in distemper; and in older dogs, if unchecked and uncared for, it is likely to lead to bronchitis, inflammation of the lungs, or other dangerous disease. It is, therefore, very necessary to pay attention to the first appearance of a deviation from health in this direction, mindful of the old proverb, "a stitch in time saves nine." Some hardy animals will need no further care than an extra warm bed and a warm supper; others will require more attention. If, conjointly with other symptoms mentioned, there be a scantiness of urine and costive bowels, give a dose of aperient medicine, followed by a few doses of "fever mixture" (p. 14). Unless the cold has engendered some more dangerous complaint, this treatment will be all that is required. If the cough be severe, resort at once to the "cough pills" (p. 13), which invariably relieve. See also under COUGH.

CORYZA is the name given to common cold when confined to the nose and eyes; this is known by running at the nose and watery eyes, and I have found the following plan quickly cure it:—Take a large sponge, wring it out of warm water, sprinkle it over freely with vinegar of squills, and hold it to the dog's nose so that he has to inhale the fumes.

Chest, Dropsy of—This is a result of pleurisy, which proves fatal.

Chest-founder. See KENNEL-LAMENESS.

Choking.—This accident is not uncommon with greedy animals that bolt their food; a bone, a piece of gristly meat, or other hard substance, is bolted, and sticks fast in its passage to the stomach. I always adopt the plan of reserving bones until after the dogs have fed, for if given with the other food they are at once picked out, and the smaller ones are, when the dog is hungry, apt to be swallowed unchewed, and produce choking.

Treatment.—Frequently by manipulating the throat outside with the fingers the obstruction can be worked down the gullet, or if it can be felt in the upper part of the throat, it may be removed by the throat forceps, which most veterinary surgeons keep by them. Hill recommends, when the substance is too low for extraction, and manipulating with the fingers externally fails, to endeavour gently to force it down with a piece of bent whalebone, having a piece of sponge tied to the end of it, and dipped in oil. In using this extra care must be taken that the sponge is so firmly attached to the whalebone that it cannot slip off, for if swallowed it might effectually block up one of the smaller intestines; therefore cut nicks in the whalebone, into which tie the piece of sponge. As soreness, if not actual laceration, is almost sure to be caused, the dog should for some days after be confined to soft food.

Chorea.—This most distressing complaint arises from some derangement of the nervous system, and generally exists as a sequence of distemper, when it is known among kennel men as "the twitch." Chorea or

St. Vitus's Dance may, however, arise from other causes producing a disturbing effect on the nervous system, such as a severe injury or blow on the head, the irritation caused by worms, or long continued impaired digestion. By far the most common cause, however, is distemper, the brain receiving some injury in that variety of the disease known as "Head Distemper." The symptom indicating chorea is a peculiar involuntary convulsive twitching of the muscles. These spasmodic movements or jerkings may be either partial or general, but usually partial. One or both hind legs are affected, or the twitching extends to the muscles of the fore legs, neck, and shoulders, in which case the head is bobbed up and down in a silly helpless manner. Sometimes the eyelids and muscles of the face are affected, but whatever part of the body is attacked the peculiar twitching or jerking is always unmistakeable. When the hind quarters are the seat of the disease the dog will sometimes suddenly drop one of the limbs from the hip joint, apparently from sudden loss of power or command over the guiding muscles. The weakness is strongly shown when the dog attempts to jump on to a chair or the lap, which he fails to do, and generally falls helplessly on his side "all of a heap." There are very few dogs severely afflicted with chorea that ever get completely cured. When the attack is but slight the dog may live for years, and prove a useful animal, as, except in severe cases, it does not seem greatly to impair the general health. The constant twitching is, however, so annoying a sight to most people, that few would care to keep a dog thus afflicted. Although dogs carefully and properly treated in distemper are less likely to suffer from this disease, yet it will occasionally occur in the best managed kennels, and so I must proceed to consider its treatment. The first thing to be done is to attend to the general health, and especially to see that the bowels are in a properly regulated state; and it is better, if their action requires correction, to endeavour to accomplish that object by a careful regulation of diet, rather than by a resort to physic; indeed, all through chorea the food must be of a nature easily digested, and given with regularity if any course of medicinal treatment is to be successful. The remedies recommended in chorea are arsenic, sulphate of zinc, nitrate of silver, and nux vomica and its preparations. Arsenic I do not recommend, but either of the following may be tried, and it is sometimes found that using them alternately has a more beneficial result than a perseverance with one remedy only. Pills may be made thus:

Sulphate of Zinc Pills.—Take sulphate of zinc, 24 grains; extract of gentian, 18 grains; powdered gum acacia, 18 grains; make into twelve pills. Dose for a dog 30lb. to 40lb. weight—one pill twice a day.

Nitrate of Silver Pills.—Take nitrate of silver, 3 grains; bread, 2 drachms; make into twenty-four pills. Dose for a dog 30lb. to 40lb. weight—one pill twice a day given at the times of feeding.

The following pills I have found very successful, and can strongly recommend them, although, of course, they are not infallible. As the ingredients require very great accuracy in weighing, and very careful

mixing, the amateur must not attempt the making of them, which must be left to a properly qualified dispensing chemist, and the box containing the pills should be kept strictly in the master's possession, for fear of accidents :

Pills for Chorea.—Take strychnine, 1 grain ; quinine, 18 grains ; extract of belladonna, 6 grains ; extract of gentian, 1 drachm ; Barbadoes aloes, 1 drachm ; mix very carefully and divide into thirty-six pills. Dose for a dog 30lb. to 40lb. weight—one pill twice a day with his food.

It is necessary in chorea to continue the use of these remedies for a considerable time—at least a month in most cases—to produce any satisfactory result, or even to give them a fair trial ; and, as before said, the dog must be carefully fed, well lodged, and properly exercised when he has sufficient power to use his limbs, and in the case of dogs reared in towns, a change to the country for some weeks would be beneficial. Galvanism has been recommended for chorea ; I have not seen it tried, but should think it well worth a trial.

Claws, Inflammation at the roots of.—Dogs used to the chase, or hunting in scrubby heather, or running much over hard, uneven roads, suffer from sore toes ; the parts around the roots of the claws are swollen, inflamed, and tender, making the dog lame, and, indeed, almost unable to get about ; there is redness between the toes, and sweating or thin serous discharge therefrom.

Such cases are often very difficult to cure. First give a dose of aperient medicine, and keep the dog up, giving him plenty of soft bedding, and keep him on a light diet ; foment the part night and morning with warm water, and bathe freely with this lotion : Take calomel, 2 scruples ; lime water, 12oz ; mix—shake the bottle well when using it, which should be done four or five times a day. If the foregoing fails try this other lotion : Take Goulard's Extract of Lead, 2 drachms ; tincture of arnica, $\frac{1}{2}$ oz. ; distilled water, a pint ; mix, and apply freely four or five times a day. If the case is a very bad one wrap the foot in a piece of lint saturated with the lotion, and pull over it a chamois leather boot, which the dog can be prevented from gnawing and pulling off by use of the cradle.

Claws, overgrown.—Lap dogs and house pets that have little or no exercise out of doors, where they can dig and scrape the ground, and so wear the claws down, suffer from over-growth of them. The nail curls round, and, if not cut in time, it grows into the sole of the foot, causing soreness and lameness. The ends of the claws should be cut off by a pair of sharp strong nippers, not too much at once in cases that have been neglected, but by gradually reducing it to its normal length by cutting a little off every ten days or so. If the sole has been penetrated, it will most likely fester, and should be freely bathed in warm water, poulticed, and the ointment prescribed on page 15 afterwards applied. To prevent the dog from tearing the poultices off, the cradle described under the head of "Appliances" at the end of the book should be used.

To prevent the nuisance of overgrown claws, it is only necessary to

treat dogs in a rational manner by allowing them the amount of exercise they naturally seek when in health.

Clysters.—See *Materia Medica*.

Cold.—See CATARRH and COUGH.

Colic.—Nearly all domestic animals are subject to attacks of colic, or gripes, as it is more frequently termed, especially when the horse is the subject of the disease. In the dog, puppies are especially liable to it, but it attacks dogs of all ages, and, if not promptly attended to and properly treated, is very liable to end in inflammation of the bowels—a most dangerous disease, which, in some of its features, though happily not its dangerous ones, colic resembles. One very important point of distinction is, that whereas inflammation comes on gradually, and feverishness, with hot dry nose, &c., always exist as premonitory symptoms, colic comes on suddenly, and a dog eating well and seemingly in perfect health is seized with spasm of the coat of the bowels, causing such pain that he gives voice to a low moan, which is afterwards changed to a prolonged howl, as the paroxysms of pain increase in frequency and severity. In colic, too, the nose and mouth are cool, and there is no offensive breath. As in inflammation, the attitude is peculiar and unmistakable; the back being arched, the feet drawn in towards each other, and the tail tightly tucked between his legs; in colic, the belly is sometimes distended considerably with gas, and is then known as flatulent colic. It is a disease of frequent occurrence in dogs, and the exciting causes are various: exposure to wet and cold; getting dogs, especially house dogs, to swim in cold inclement weather, are common causes; the presence of worms in the intestines also produces colic. But the most common cause is undoubtedly the giving of improper food; sugar and other sweet things are likely to produce it; puppies just after weaning are very liable to it, especially if they have small lumps of meat, or other solid food thrown to them, which they cannot well chew, but greedily bolt; or having a portion of one meal left in the dish till the next meal is added is very likely to produce it, because the stale portion undergoes fermentation, that is, becomes sour, and the fermentation is carried on in the stomach. Colic is sure to yield to prompt and proper measures, and the treatment is simple and safe. As soon as observed, give the sufferer a dose of the “anti-spasmodic drops,” given on page 12. It must be given diluted with thin gruel, milk, or water, and if immediate relief does not follow, administer a double quantity, as a clyster in gruel, or the dose may be repeated in half an hour. In “flatulent colic,” known by the distended belly sounding like a drum when tapped with the end of the finger, from ten to thirty drops of spirit of sal volatile may be advantageously added to the dose of “anti-spasmodic drops,” or the following draught may be given, and repeated in an hour if the dog is not relieved: Carbonate of soda, 20 grains; aromatic spirit of ammonia, 30 drops; essence of ginger, 5 drops; landanum, 15 drops; and peppermint water, 2 tablespoonfuls. That is a dose for a medium sized dog, such as a pointer or a greyhound. After the attack has subsided, give the dog a gentle aperient, such as the “mild purge” (page 10), and

keep on a laxative diet, and do not let the dog have violent exercise for a day or so. Endeavour to discover the cause of the attack and avoid a repetition. Lead poisoning produces a peculiar form of colic, and dogs should not have water to drink that has been collected in leaden cisterns, or carried through leaden pipes, until it has been boiled.

Constipation.—See BOWELS, OBSTRUCTION OF.

Costiveness.—See BOWELS, OBSTRUCTION OF.

Cough.—Cough, strictly speaking, is a symptom of disease rather than a disease in itself, but it is in very many cases to non-professional observation the most distinct sign that something is wrong; indeed, so markedly is this the case that we speak of a person having a bad cough as the ailment from which he suffers, rather than the symptom of that ailment and hence we have innumerable specific remedies, as cough mixtures, cough lozenges, cough pills, &c. Our dogs we treat in the same way, taking the sign for the substance, the smoke for the fire, and fortunately without much practical harm, for, generally speaking, the medicine that will ease a cough is acting favourably on the disease of which the cough is an evidence. To decide what particular disease is indicated by the cough, the concomitant symptoms and circumstances, as described under the special diseases, which are usually preceded or accompanied by cough, must be taken into account, and the special treatment called for in each case followed. Coughs vary as much in character as do the diseases of which they are in many cases the most pronounced indication. Thus, in common cold the cough is slight and humid; in bronchitis, hard, dry, and frequent; and in inflammation of the lungs and pleurisy, short and suppressed, doubtless from the great pain caused by the effort. When the throat is sore, the cough is hoarse and generally accompanied by more or less difficulty in swallowing; in asthma, the cough may be described as wheezy, and is often followed by vomiting. Cough in distemper has a peculiar husky hollow sound. Cough may be produced by a bit of bone or other substance sticking in the throat and causing irritation, in which case the cough is the natural effort to get relief, and ceases with the removal of the irritating cause. As cough is almost invariably connected with some derangement of the respiratory organs or air passages, its warning should never be neglected, and an early resort to the use of the "cough pills" (page 13) will be sure to relieve, will frequently cure, and can under no circumstances, do any harm. There are, of course, many other excellent remedies for cough.

Cough Mixture.—One part paregoric elixir, with three parts of the syrup or oxymel of squills, a teaspoonful being an average dose.

Some persons recommend and use friars' balsam, the dose being from ten to twenty drops, given on lump sugar; but it is useless multiplying remedies. It may be broadly stated, that anything suitable for the master's cough will suit the dog's.

Cramp.—This term is often used by sportsmen to denote spasm from whatever cause, but cramp of the limbs from exposure to great cold and wet often occurs, and it will quickly yield to brisk rubbing and warmth.

If nothing else is handy, rub with a little spirit and water or a rough dry cloth. Dogs used in hunting or retrieving from water—especially if the shooting is done from a punt—are very liable to it, and in such cases a good brisk liniment, such as the following, should be carried in the boat :

Brisk Stimulating Liniment.—Compound camphor liniment, 3 oz. ; olive oil, spirit of turpentine, and spirit of hartshorn, of each, 1 oz. ; mixed. The hind quarters are most often affected.

Crooked Limbs.—See RICKETS.

Cropping.—See EARS, CROPPING and ROUNDING.

Cuts, Wounds, Tears.—In the chapter of accidents to which the dog is liable, his wonderful litheness and activity often bring him off scathless where a clumsier animal would suffer, and, considering the innumerable small dangers to which he is exposed in the ardour of the chase, &c., it is wonderful that injuries are not more frequent. Cuts or tears received under these or similar circumstances, are, perhaps, the most common ; they are alike in character, and require similar treatment. In these cases the first thing to be seen to is to stop the bleeding, which can generally be done by simple pressure with the fingers, or by a few folds of lint firmly pressed against the cut ; these means will be successful, except when a considerable artery has been severed, when a ligature will be the radical cure. After the bleeding is partially or entirely stopped, the next thing is to remove all foreign bodies which may be present, such as dirt, glass, thorns, splinters, &c. ; but in doing this avoid the use of very cold or hot water : use it about blood heat, to avoid an ugly gaping wound, which would be followed by as ugly a scar. Where the cut or wound is superficial, nothing further will be needed than cleansing, pressure of the parts together, and dressing with friars' balsam or tincture of myrrh, applied with a small brush or feather ; as the spirit with which these tinctures are made evaporates, it leaves on the wound a protective covering of gum. In cases where the lips of the wound do not meet it will be necessary to draw them together with a few stitches, which is most conveniently done with a slightly curved suture needle, and a silk thread, which should be waxed with bees' wax to prevent absorption of fluids and its acting as a seton. The sewing of wounds is a very easy affair. Pass the needle through the skin on one side the wound from the *outside* inward, and then through the corresponding part of the opposite lip of the wound, from the *inside* outward ; draw the lips of the wound gently together, and tie the silk in a double knot, and cut the ends off close ; and this must be done to each stitch. When the cut or tear is long it is better for the operator to use a pair of light cross-forceps to hold the corresponding lips of the wound together in advance of where he is sewing. They are most useful, as by their help a neater job can be made ; they can be bought from any surgical instrument maker. As a rule the stitches should be about half an inch apart, and must in all cases be cut from each other. The dog should afterwards be muzzled, or a light bandage kept on to prevent him nibbling the threads with his teeth or undoing the stitches with his tongue. The wound will heal by adhesion or by granulation, in which case matter will

form, and then great attention must be paid to keeping the parts clean, and to prevent the putrefaction of the exuded matter. Constant washing away of all accumulated discharge, and sponging freely with the following will be needed, or at least beneficial :

Antiseptic Lotion.—Take pure carbolic acid, ʒoz.; glycerine, 2oz.; water, to make a quart.

In slight cuts on the legs and feet it will simply be necessary to wash well and apply friars' balsam, but if so severe as to require bandaging, apply under the bandage a piece of lint, saturated with a mixture of friars' balsam and camphorated oil.

D.

Deafness.—A very considerable number of dogs suffer from deafness. In many the disease is congenital, but I do not know that it is hereditary; and I am quite at a loss to explain why congenital deafness is so much oftener seen in white dogs, or those with a preponderance of white, than any other colour. Bulldogs, bull terriers, and white English terriers seem to be peculiarly liable to this defect. I know of no treatment for congenital deafness likely to be of any use except when it is caused by a morbid growth capable of being removed. Among the causes producing deafness the absurd fashion of cropping is a common one, the operation setting up inflammation, which extends to the internal organ; blows are another cause, and so is tugging at the ear—a most brutal mode of punishing a dog; the lodgment of water in the ear may also cause it. In the latter case, pouring in a little pure oil of sweet almonds may give relief, and in other cases the treatment recommended for internal canker may be beneficially followed, and, in addition, apply a blister behind the ears. Cooling aperient medicine must be given, and a light diet with green vegetables adopted whilst the dog is under treatment. Dogs born deaf seem to have their other senses quickened; they are generally remarkably sharp at interpreting signs given by the master, and anyone rearing a deaf dog should adopt a system of signs and keep to them.

Dentition.—See TEETH.

Destruction of Dogs.—It is often necessary to destroy dogs that have become so crippled or injured as to make cure at the best very doubtful, and in most litters of puppies there are some so puny or so wanting in the characteristics of its breed that they ought not to be reared. In the latter case it is most humane to destroy such as are not wanted as soon after they are born as possible; but even when a *mésalliance* has taken place, one, at least, of the puppies should be left with the dam, unless one or more foster pups of pure blood can be substituted. In destroying young puppies there is no more convenient or less painful

method than drowning, and for grown up dogs a teaspoonful of Scheele's prussic acid causes instantaneous death. In giving it, the mouth of the dog should be held open and upwards, and the acid poured well back on the tongue. The very greatest care is necessary in dealing with an article of such potency; it would be highly dangerous to life if any of it were spilled over a cut or wound.

Dew Claws.—Darwin describes these as “accidental monstrosities,” yet a general opinion pervades what I may call “the fancy” that dew claws are the peculiar inheritance of a few breeds of dogs, and from this false idea possession or non-possession of these now utterly useless, clumsy, and ugly appendages has been set up as a test of purity or impurity of breeding in specimens of the varieties of which they are wrongly ascribed as being the peculiar property.

As a matter of fact, dew claws occasionally appear in all breeds, but most often naturally in those varieties nearest to the primitive race from which all have sprung, for I look on dew claws as an effort of Nature to continue an old habit, and that in them we see an abortive attempt to produce and continue a member which altered circumstances of life render no longer necessary to the animal.

The two breeds—speaking, of course, of our own domesticated varieties—in which dew claws are oftenest developed and seen in most pronounced form are the St. Bernard, and the colley or sheep dog, the latter approaching nearer in form to wild species than any other; and, indeed, it has been by some naturalists supposed to be the origin of all our varieties, and consequently nearest to the original parent stock of the whole genus *canis*. As is well known, our present breed of St. Bernards has a strong infusion of the Pyrenean sheepdog, from which, if the above theory is correct, they most probably have inherited the dew claw, which is seen in them oftener and more fully developed than in any other dog. That it is a special provision of Nature to prevent these dogs from sinking in the snow when engaged in their work is a proposition which appears to me too monstrously absurd for any sane man to consider for sixty seconds and afterwards put it gravely forward as his opinion. Let those who have thoughtlessly accepted the proposition consider the weight of a St. Bernard, and the resisting power of a dew claw, never exceeding half an inch square, and which is so flexible that with your little finger you may bend it up flat against the leg. It would be just as reasonable for a man to expect to keep himself from sinking in the snow by the aid of the point of his walking stick.

I look upon these superfluous growths as excrescences, which it is folly to preserve. The attempt is a feeble effort to restore to life a dead member, which, having done its duty, has been by Nature thrown aside like other worn-out implements; and as there must be an amount of force, more or less, spent in producing it, it would be wiser to endeavour to work with Nature rather than against her, and so direct that misspent energy to the further development of points of real importance.

The term dew claw is now (in “the fancy”) restricted to the fifth toe

above the hind feet, on the inner side, but this is incorrect. Blaine says the dew claw is attached to a rudiment, more or less developed, of an additamentary phalange or toe situated on the inner side, one to each foot, distinct from and considerably above the other toes.

These additional toes are frequently unattached to any corresponding metacarpal or metatarsal bone, having only a ligamentary union, so that the term is equally applicable to the extra toe often seen on the fore leg; and, as they are neither useful nor ornamental, I would in all cases have them removed. Another reason for their removal is that in furze, heather, or long tough grass the dew claws get caught, and awkward tears are the result, causing bleeding, pain, and lameness.

They should be removed when the pups are with the dam, and this can be easily done with a pair of strong scissors. If left till the dog is older, they are liable to bleed a good deal, and the pain, of course, is greater; in such case, the wound produced by the excision should be at once well saturated with friars' balsam. If it is thought well to remove the nail only, that can be done by pulling it out with a pair of nippers.

Diabetes.—Diabetes is an increased abnormal flow of urine caused by derangement of some of the assimilative organs; when long established it produces great emaciation and weakness. The treatment consists in giving first a few doses of a mild purgative, and the "podophyllin pills" are the most suitable under the circumstances; if the excessive flow of urine continues after this treatment, resort must be had to opium, iodine, alum, oak bark, or its preparations, &c. The following bolus is an excellent remedy in such cases, as I have proved by experience:

Astringent Bolus for Diabetes.—Take gallic acid, 1 drachm; powdered alum, 1 drachm; powdered opium, 12 grains; gum sufficient to form a mass; divide into twenty-four pills; dose, one or two twice a day, according to the size of the dog.

Where the animal is weak and the appetite dull and impaired, 1 grain of quinine may be added to each pill, or the "tonic pills" (p. 10) may be given in conjunction with the astringent bolus.

Diarrhoea and Dysentery.—Diarrhoea is of very frequent occurrence in dogs, and more particularly in young puppies and in old and overfed dogs. It generally exists as a result of indigestion, brought on by improper feeding. The practice of leaving stale food from one meal to another is a common source of this disease. Diarrhoea may be classed as *acute* and *chronic*. In the acute form there is much looseness of the bowels, frequently accompanied or preceded by copious vomiting of acrid offensive matter; the evacuations are loose, watery, and offensive. If not checked, it soon produces excessive weakness, and, especially in puppies, is the cause of great mortality. In the chronic state the disease is slower in its progress and longer in its duration. It may be set up by a diseased liver and excess of bile, or it may be the result of inflammation of the bowels. A by no means uncommon cause is the abuse of calomel and other mercurials, these being "specifics" with many persons for all dog diseases. Diarrhoea often finishes up the work of distemper, and this is so in

most cases where, as too frequently happens, mercurials have been relied on as a cure for that disease. Worms are also a common cause of diarrhœa, and when these exist the nature of the discharge is variable, frequent and small in quantity, sometimes lumpy, followed by gelatinous glary matter, and often frothy and covered with small air bubbles. When worms appear to be the cause, means should be taken to expel them as directed later on. Exhalations from accumulations of filth, and especially in lowlying, damp, and badly drained and badly ventilated kennels, are also a cause of diarrhœa, and one which never should exist. (See sanitary measures as preventives of disease in Introduction.) In treating diarrhœa it is often of considerable advantage to give a mild purge to remove the irritating cause. Castor oil is very suitable; and, if there is evidence of much pain attending the disease, a dose of laudanum, from twenty to thirty drops, may be added. As a remedy in diarrhœa I know nothing equal to the following mixture, which very rarely fails to check it if the patient at the same time receives proper attention in other respects :

Astringent Anodyne Mixture for Diarrhœa.—Take prepared chalk, 3 drachms; aromatic confection (powder), 2 drachms; powdered gum acacia, 1 drachm; (laudanum) tincture of opium, 1oz.; oil of cassia, 6 or 8 drops; tincture of catechu, 3 drachms; spirit of sal volatile, 2 drachms; water sufficient to make 8oz. The powders must be rubbed very fine in a mortar, the oil of cassia with them; the water must be gradually added, rubbing well to form a smooth mixture. The tincture added in the bottle. Of this mixture the dose will be from a half to two teaspoonfuls for puppies, and from one to two tablepoonfuls for full grown dogs, given every three or four hours, as long as the purging continues. The bottle must be well shaken before measuring the dose.

For convenience of form the following may, under some circumstances, be preferred, as it keeps well and is in less compass :

Astringent Anodyne Drops.—Take spirit of camphor, 2 drachms; laudanum, $\frac{1}{2}$ oz.; spirit of sal volatile, 2 drachms; tincture of catechu, 1oz., mix. Dose, from twenty drops to a teaspoonful in water every three or four hours, if required.

The diet must be very carefully regulated all through the disease; such light and easily-digested food as well-boiled oatmeal, rice, or arrowroot should be given, with milk or beef tea, and if the patient refuses to feed a little should be given with a spoon or a drencher every two or three hours; when the dog is very weak, add a little port wine to the food; instead of plain water, give rice or barley water to drink. In the case of bitches suckling, the diet must be changed, a dose of castor oil given, and the "astringent anodyne mixture" in small doses, or an injection may be administered.

Injection for Diarrhœa.—A quarter of a pint of gruel with 2 drachms of tincture of catechu, and 1 drachm of laudanum.

It is most important that rigorous cleanliness be observed, all discharges being removed, the animal kept clean by sponging with lukewarm water if

necessary, and disinfectants should be sprinkled about; the patient should also be kept warm and left as quiet and undisturbed as possible.

Dysentery may be described as diarrhœa in its most aggravated form—there is generally feverishness present, considerable pain, and the evacuations are often black in colour and very offensive, and followed by discharge of a gelatinous-like substance mixed with blood. The loss of strength is very rapid, and the dog must be supported by drenching with beef tea and a little port wine in it, the medicines and general treatment being the same as in diarrhœa. In one case of this kind, in a retriever, I gave two doses of twenty drops of chlorodyne with very good effect.

Diphtheria.—Dogs, it is held by some veterinarians, are liable to this alarming and fatal disease, and a case is on record where the disease was communicated to a dog that had the remains of food given to it that had been partaken of by a child suffering from diphtheria. I have no advice to offer as to treatment in such cases. The slightest suspicion of diphtheria suggests isolation and redoubled attention to sanitary measures, and the immediate calling in of a veterinary surgeon. It seems reasonable that if man can communicate this disease to the dog, on the other hand the dog may be a medium for carrying the contagion from place to place; and it has often occurred to me that great danger lurks in the practice of allowing practically masterless dogs to prowl about the streets, picking up their living in the gutters and from refuse heaps. May they not in this way carry to their homes the contagion of many virulent diseases?

Disinfection.—See *Disinfectants in Materia Medica.*

Dislocations.—Displacement of the joints are not uncommon, the hip being most often dislocated, but it also occurs with the shoulder, knee, stifle, elbow, and the toes. Some dislocations are accompanied by fracture, adding greatly to the difficulty of treatment; and even in simple dislocations the reduction of them should be intrusted to a veterinary surgeon, whose knowledge of anatomy and experience in operations of the kind would enable him to perform it more readily, and with the least possible pain to the dog; indeed, dogs under such operations have now, as a rule anæsthetics administered. Where professional aid cannot be obtained, the person proposing to reduce the luxation should first examine and determine in what direction the bone is parted from its socket; for instance, in dislocation of the hip, the head of the thigh bone is generally carried upwards and backwards, so much so that the direction is apparent to the eye, as the injured side is thereby made higher, and it can be also readily felt. The assistant should hold the dog round the loins steady in one position, whilst the operator, taking hold of the dislocated limb above the stifle joint, must retract the thigh bone downwards and forwards. The same principle must guide similar operations for the reduction of dislocation of other joints; and it will be evident that rest will be needed, and violent exercise cannot be safely allowed for some time. There is always a disposition to repetition of dislocation.

Distemper.—Although distemper is certainly *the* malady of dogs—so

much so that when first discovered in France, from which country we imported it, it was and is still so named,—yet it has always appeared to me that the name distemper is unhappily chosen as being too diffuse for correct application to a disease marked by such varying phases. The term is used very loosely by people in general; and if a horse has the “strangles,” a pig the “measles,” or the cattle are suffering, no matter from what-foot and mouth disease, pleuro-pneumonia, or rinderpest—this convenient word is forced into service, and made to do duty for all. Distemper is also known as the “dog-ill”; the Scotch term for it, “snifters,” is to a certain extent better, as graphically conveying to the mind one important feature of the disease, namely, the sniffling noise—half cough, half sneeze—made by the dog in his efforts to get rid of the matter which accumulates in the nostrils in distemper; but that term is too limited to adequately describe a disease which has been well called “the scourge of the kennel,” and which assumes so many forms and complications that it has been well called the Protean malady.

The exact date when this disease first appeared in England is not certain, but probably it was introduced about the beginning of the last century, or the end of the seventeenth. Gervase Markham, who, early in the seventeenth century, wrote copiously about dogs, horses, and their diseases, does not mention it by name, or describe it; and Nicholas Cox, in “The Gentleman’s Recreations,” published 1677, is also silent about it, although he refers to madness, swelling in the throat, mange, formica, &c., the last being what we now call canker of the ear. That the disease was recognised on the continent before it was in this country is evident from the fact that it is referred to by French writers of sporting books at a period earlier than any of our own writers have noticed it, and, considering how contagious it is, the presumption is that it was brought from France through imported dogs. However that may be, it is now a firmly established disease among us, and one that up to the present time has not received the amount of scientific attention its importance deserves. Nearly every gamekeeper and kennelman believes himself possessed of an unfailing cure for it; but those who know most of its versatile character and dangerous complications, are the most cautious in prognosticating a cure, and the most careful in watching the altering symptoms, and varying their treatment to meet the individual case.

Distemper, when first observed, appeared as an occasional epidemic; and no doubt, it still, to a considerable extent, sustains that character, raging in certain districts, whilst other parts of the country are comparatively free; and at different places, and in different seasons, one particular kind of distemper prevails; that is, the liver may be most affected, causing the yellows, or the brain, producing fits, or the most general feature of the disease may be diarrhoea of a severe and fatal kind. But I do not think it is now so markedly epidemic as formerly; in fact, it may be said to be perennial, always existing more or less all over the country, and this is, I think, to be accounted for, by the vastly increased intercourse between dogs from great distances brought together by the

numerous shows held. It is well known that distemper breaks out in numbers of kennels after some shows, especially those that are prolonged, and where puppy classes are encouraged; in fact, each one of these may be described as a centre from which disease is disseminated to all quarters; and the spreading of distemper is also now well provided for by the immense traffic in dogs, these animals by hundreds, if not thousands, changing hands every week, being sent to and fro between all parts of the country, and often in railway dog boxes constructed apparently so as best to insure the healthy occupant becoming infected with the ailment of his diseased predecessor, and that end further secured by the filthy state in which the boxes are usually kept.

“Stonehenge,” in his earlier works, considered that he had proved the similarity of the distemper of dogs to the typhus fever in man, but he does not appear to take that view in his later published books, and the leading men in the veterinary profession consider there is no identity between the two diseases, and it appears quite certain that typhoid fever cannot be communicated to man by a dog suffering from distemper, and dogs in houses where typhoid fever prevails appear to be quite proof against the contagion of that disease. I would, however, suggest for consideration whether dogs may not be the medium for carrying the subtle germs of typhoid and other diseases between man and man, for if so, a more stringent control over them by the police and sanitary authorities than exists seems called for.

There is no doubt that young dogs—those in their puppyhood, that is to say, under twelve months old—in the majority of breeds, are most subject to distemper; but the disease attacks at all ages occasionally, so that we have well-marked and generally fatal cases at a few weeks old, and instances of severe attack at quite a mature age.

Although, as a general rule, one attack seems to give immunity from a subsequent one, yet there are many instances of dogs suffering a second time, and Blaine says even a third time, and gives an instance of a dog that succumbed to a third attack, the three having been divided by considerable intervals; and Professor Hill holds that a second attack only occurs from direct contagion. A good many instances have come under my own observation confirmatory of this view, and it is the more necessary to notice it because the popular belief is that a dog never has distemper more than once.

It is a very common opinion that certain breeds of dogs are peculiarly liable to this disease. Some think setters, and others spaniels, some one and some another breed, but it is not the special inheritance of any one or two varieties, the whole domesticated race of dogs suffering from it more or less. I am often asked such questions as, Are St. Bernards specially liable to distemper? but the answer must be, all experienced breeders and rearers of dogs will agree, that it is not a question of variety, but of strain and constitution, as these are affected by a more or less artificial life and a forced and unnatural system of breeding. It is the highly bred dog, not the mongrel, that is apt to suffer most severely;

and this would be far more manifest were it not for the contrast in care and attention, in housing, feeding, &c., between the two. No doubt, in-and-in breeding, and breeding for certain artificial or fancy points, generation after generation, weakens the constitution, and makes dogs more likely to be attacked by, and to succumb to, distemper; and in all cases the weakest in the litter is the most likely to be the victim—the dainty-feeding pup, the pot-bellied, and the rickety are the sort that most frequently die, of whatever breed they may be.

There is a very common opinion among doggy men and others who, although loving a dog, cannot be so called, that it is an absolute necessity of dog life that each animal should suffer from this disease. But it is not so; many never pass through the trying ordeal. Still it is quite a wise thing to inquire before buying a young dog whether it has been “through distemper.” This, like many other diseases, may be averted by attention and obedience to the laws of health, which will be further referred to under preventives.

CAUSES OF DISTEMPER.—These may be said to divide themselves into the immediate and remote, the evident and the obscure; but then it must never be forgotten that “the eye sees only that which it brings with it the power of seeing”; and a cause self-evident to the veterinary pathologist would by no means be apparent to the casual observer. The disease has now been so long established in our kennels that there appears to be an hereditary tendency in some strains to it; but this predisposition must be encouraged by some generating cause, although so slight that it would not affect another in which the disease was not inherent. Badly drained and ill-ventilated kennels, and especially if added to these conditions there is want of thorough cleanliness, are the natural homes of distemper. Exposure to damp and cold, bad or injudicious feeding, whether poor food, or excess of it, alike tend to develop it, as it often follows on common colds and derangement of the digestive and other organs, the immediate result of such treatment. Contagion is, however, the great cause, although, from the fact of one puppy in a litter quite isolated from its fellows and all other dogs having it, it appears to originate spontaneously sometimes.

What the special contagion of distemper is has not been determined; but we know that there are dogs whose bodies appear proof against it, yet the majority brought into contact with diseased dogs, and having to breathe the effluvia given off by them, yield to its poison, whilst the morbid secretion, from sores or from the nose, &c., of a distempered dog rarely fails to communicate the malady to any healthy dog that comes into contact with it. Teething has been held to be a cause, but, although the slight feverishness set up by the change of the milk teeth to the permanent ones may somewhat predispose a dog to it, teething is not a direct producing cause; and probably the belief has sprung up because the age at which the change of the teeth takes place is also when the pups are peculiarly liable to this complaint. Worms have also been supposed to cause distemper, but it appears to be a mere coincidence

in puppyhood, that both exist together, and when they do the puppy generally has a hard time of it.

PREVENTIVES OF DISTEMPER.—There is no specific preventive ; and the aim of the breeder should be to have pups fortified against its attacks by a robust constitution. This is to be attained by breeding only from healthy parents, of proper age, and not too close consanguinity. From the birth mother and pups should be well fed and nourished, and kept under conditions of proper temperature, fresh air, and light, with sunshine in the runs if possible, thorough cleanliness, and good drainage, with plenty of exercise. The dog being a carnivorous animal, more or less of meat seems almost a necessity of health to him, but in the artificial life he is consigned to, much less than his inclinations would dictate is required, and excessive feeding would be more likely to induce distemper than to prevent it.

Vaccination has been advocated as a preventive of distemper, but has been proved worthless. The disease is very different from smallpox in man, so that it was not to be expected that the vaccine matter would produce, in a mild form, the disease it was to strengthen the constitution against a virulent attack of, and experiment has proved this. Inoculation, by transferring some of the matter discharged—as the matter from the nose of a distempered dog to a healthy one, will readily produce the disease ; but as a well-cared-for pup stands a good chance of escaping it altogether, or having it in a mild form only, it seems a pity to bring it on. This is sometimes done, however, where a lot are being reared, to save trouble by having them all down with the malady at one time.

GENERAL SYMPTOMS.—The symptoms in distemper present very considerable variation, according to the particular local complications which are developed, and they are also dependent on the severity of the attack, and the rapidity with which the disease progresses. As a rule, the first observable symptoms are great lassitude and dulness shown in the eyes, in a disinclination to play or exercise, in a decided preference for warmth, the dog creeping into the warmest corner or crouching before the fire, and in the general languor that appears to benumb the dog's energies like the incubus of a nightmare ; so that the hitherto lively dog, instead of jumping with delight at his master's call, merely replies with a spiritless wag of the tail and a dismal woe-begone look. Loss of appetite is an invariable symptom, and feverishness succeeds, shown by the hot, dry nose ; alternate fits of heat and shivering ; considerable thirst is frequently present, the bowels are generally deranged, sometimes relaxed, sometimes constipated, the urine is scanty and high coloured, and the coat generally rough and staring ; retching and vomiting often occur, a thin watery discharge from the nose and eyes sets in, accompanied by a scarlet hue of the membranes, and the eyes appear unusually sensitive to light. A short dry husky cough and sniffling or sneezing occurs, especially when the animal is brought into the open air. The discharge from eyes and nose (sometimes the first sign of the disease observed by the owner) gradually becomes more purulent, sticking in the nostrils and glueing the eyelids together, especially in the morning, causing the dog much annoyance in

that way, but still more by obstructing respiration, when the constant efforts made by the dog to clear the nostrils produces that peculiar noise which gives the disease the name of "snifters." In many cases the eye is seriously affected. A small white speck may be observed, which gradually widens and deepens until an ulcer is formed; and although the eye may protrude, and the whole appearance give the impression that the sight is lost, yet as the disease subsides the eye gradually returns to its natural condition. The symptoms are not in every case so clearly marked, and the disease may have gone on for a few days, or a week, unnoticed, or it may have been mistaken for common cold. There is, however, one invariable and unmistakable feature of distemper, which distinguishes it from any of the diseases with which it might otherwise be confounded, and that is the very rapid loss of flesh and strength which takes place—a strong fat dog being in many cases reduced in a week or so to a mere skeleton, scarcely able to move about. Such are the general symptoms of an ordinary attack of distemper in its earlier stages, some or all of which may be observed in a more or less marked degree. In a mild attack, and even in severer ones, with proper treatment, these untoward conditions gradually abate, and restoration to health takes place. On the other hand, even with the best of care and the most judicious treatment, there are cases in which dangerous complications of disease in the head, chest, or bowels arise, requiring the utmost attention, prompt measures, and skilful management.

SIMPLE DISTEMPER.—In mild attacks, or what may be called "simple distemper," hygienic measures, good nursing, and careful dieting are often all-sufficient to see the patient through. It is often, however, of benefit, even in the mildest attacks, to give a mild dose of aperient medicine, and when the matter from the eyes and nose is at all thick and sticky, I have known great relief given by holding the head over wet hot bran or some other such substance, on the top of which has been sprinkled a couple of tablespoonfuls of vinegar of squills, or more for a large dog. The dog should be made to inhale the fumes for some minutes, and it may be used twice a day.

When it is feared the disease is likely to assume a more serious aspect, it is often beneficial to empty the stomach by means of an emetic. For a pup, say of six months old, of a middle-sized breed, such as a pointer, half a wineglassful of ipecacuanha wine may be given, or a teaspoonful of salt and mustard in a teacupful of lukewarm water.

HEAD DISTEMPER.—When the head is the seat of the local disease in distemper, it is generally ushered in by what is known as a "distemper fit," and is a sure sign of inflammation of the brain or its membranes; this is also shown by the greatly increased heat of the whole head, and the bloodshot appearance of the eye, which in such cases is painfully sensitive to light. If the inflammation be not reduced a succession of fits generally follows, in one of which the dog dies. In cases where the head is affected, in conjunction with general treatment prescribed, local applications must be resorted to to relieve the patient. These consist in keeping

the whole head constantly wetted with cold spring or iced water, a cooling lotion, or in the prompt application of a blister to the back of the head, or the insertion of a seton in the back of the neck. The following is a useful form for cooling lotion :

Concentrated Cooling Lotion.—Take powdered sal ammoniac, 4oz. ; boiling water, half a pint ; strong acetic acid, half a pint ; methylated spirit, 4oz. Dissolve as much as possible of the sal ammoniac in the boiling water by rubbing in a mortar, and the residue with the acetic acid, adding the spirit to the stock bottle when the solution is cold. In using this a large wine-glassful must be mixed with a pint of cold water, and it is important it should be unremittingly applied to the head by a cloth for several hours, care being taken to keep it out of the eyes. I believe in most cases the patient and continuous use of this lotion will render the painful application of the blister or the seton unnecessary.

The use of the seton needle when determined on is simple. Pass the tape through the eye of the needle, take with the left hand a loose fold of skin, lift it up and pass the needle through it, drawing one end of the tape after ; tie the ends of the tape together, and the operation is completed. When quicker and severer counter irritation is desired, it is necessary to smear the tape with mild blister ointment or some other irritant.

When fits are frequent or severe, 6grs. to 10grs. of bromide of potassium given to a dog of 40lb. to 60lb. will often give relief ; but it is seldom the dog recovers from attacks of this nature.

CHEST DISTEMPER.—In all cases the respiratory organs are more or less affected, and the disease seems to extend to all the mucous membranes ; and when the more important organs of respiration ; the lungs or pleura-bronchial tube, &c.—are attacked, it is generally called chest distemper. In these cases the breathing is quicker and becomes painful, the cough is deeper in sound, harsher, and evidently more painful, and the pulse is raised very much from the normal 90 to from 110 to 120. The dog should in this case be made warm, and have a comfortable bed, but not stifled with clothing or by the atmosphere of an unventilated room, for pure fresh air is an absolute necessity to recovery. If the throat is sore, which the hoarse husky bark will show, relief may be given by the electuary prescribed for *Bronchitis*, and blistering the throat. Large hot poultices to the sides, frequently changed so as to keep up the heat, prove beneficial, and the general treatment afterwards alluded to, and that prescribed under bronchitis, pneumonia, or inflammation of the lungs.

ABDOMINAL DISTEMPER.—When the bowels are the subject of serious attack, that is, if violent diarrhoea or dysentery supervene, or if “the yellows” make their appearance—for, as already stated, slight derangement is almost invariable—it may, in many cases, be put down to mismanagement, and the gross abuse of emetics or calomel, or other powerful drugs. When these have been resorted to, as is too often the case, by poor people ignorant of their nature and properties, and given by the rule of thumb, the poor dog's case is indeed perilous, for in the midst of the battle with the most dangerous and insidious enemy to canine life,

another foe appears to finish up the work of death already well begun. In such cases, violent diarrhoea—the evacuations consisting of a thin watery matter, undigested food, or black pitchy fæces mixed with blood—generally comes on when the disease has lasted a week or ten days, and, unless checked by proper treatment in its earlier stages, almost invariably proves fatal. The best treatment in such cases has been given under **DIARRHŒA AND DYSENTERY**. If the dog has been constipated previous to the attack of distemper, and no heed taken of his condition, it is very likely to result in an attack of the “Yellows.” This condition is denoted by the yellow appearance of the eyes, gums, lips, &c., and in severe cases of the whole skin, more particularly observable on the inner surface of the ears, inside the thighs, and on the belly; the urine is strongly tinged with yellow, and the discharge from the bowels is of a pale yellow or clay colour. This most dangerous complication of distemper is very frequently the result of giving violent emetics, which are much resorted to by so-called dog doctors. The treatment is given under the head **JAUNDICE**.

PUSTULAR ERUPTION IN DISTEMPER.—The skin in distemper, especially inside the thighs, on the chest, and on the belly, is often covered with a pustular eruption, discharging a thin matterly substance often tinged with blood, and this forms into scabs. As the pustules break, the exuded matter should be carefully wiped off with a soft rag or sponge, dipped in tepid water containing a small quantity of Condyl's Disinfecting Fluid. This eruption of pimples is often a favourable sign, but, on the other hand, it appears at a stage of the disease when the dog has become greatly weakened; and, whilst giving the distemper mixture to aid in throwing out this poison from the system, the patient should also have tonics and as much strengthening food as the stomach will bear. This phase of the disease is most often seen when the liver and bowels have been attacked.

SEQUELS OF DISTEMPER.—Occasionally during the attack of distemper, but generally as a sequel to it, either paralysis or chorea, called “the twitches” or “the trembles,” appear. Those require special treatment, and are referred to under those heads.

Having attempted as plainly as possible to describe the various symptoms of this disease, and the complications which often attend it, I will now endeavour to point out what I consider, and what experience has taught me, to be the proper and most successful treatment. To enumerate the popular cures for this disease would occupy much space for little profit. Mercury, in one form or another, figures largely in the list, particularly calomel and Ethiop's mineral—the former a very dangerous drug, and the cause of great mortality among dogs; the latter an almost inert preparation. Emetics, too, are widely popular and grossly abused; but nearly every locality has its own specific. In addition, we have those wonderful nostrums, that were never known to fail, that are palmed on and purchased by a too credulous public. It should not be necessary to tell anyone who has watched the progress of this disease in his own dog, that an infallible specific for distemper, with its varied and dangerous forms, is not likely to be speedily met with.

The dog owner who has puppies growing up should always be on the look-out for distemper, and, on its first symptoms, address himself to its treatment, for in this, as other things, a stitch in time saves nine. As the disease appears the dog must be taken in hand, and his comfort seen to. In many cases a mild emetic of salt and mustard, ipecacuanha wine, or antimonial wine may be given, for these are often beneficial when judiciously used, although detrimental when abused, as emetics often are. The bowels as well as the stomach should be emptied, and for this purpose we must be guided in our choice of drugs by the constitutional strength, age, and general state of the dog. For very delicate animals a laxative of olive oil, linseed oil, or castor oil answers best, and stronger ones may have castor oil, syrup of buckthorn, and syrup of poppies mixed; but when the dog is strong enough, as is the case with many breeds, I have found nothing so suitable as the following pills:

Compound Podophyllin Pills.—Take podophyllin 6gr., compound extract of colocynth 30gr., powdered rhubarb 48gr., extract of henbane 36gr.; mix and divide into twenty-four pills. The dose for a puppy is from one-half to two pills, according to age and size, and it is advisable to give the dog a little warm broth after the pill to assist in its action.

As soon as the bowels have been freely acted on, begin with the following mixture, giving a dose of it regularly every four or six hours as long as any feverish or inflammatory symptoms exist:

Distemper Mixture.—Take chlorate of potash, 2dr.; Mindererus' spirit, 1oz.; sweet spirit of nitre, 2dr.; tincture of henbane, 2dr.; water, 2½oz. Dissolve the potash in the water, and add the other ingredients. The dose will range from a teaspoonful to a tablespoonful, according to size and age, and it should be given in some additional water.

Taken in its earlier stages, and the above instructions followed, the poison in the blood, which is the essence of distemper, is by these means neutralised and destroyed, and in most cases the dangerous complications of disease in the brain, lungs, or bowels prevented. No remedy, however, will do away with the necessity for unremitting care and attention on the part of the attendant—in fact, good, sensible management and nursing are more than half the battle. The patient should be in a warm, dry, and well-ventilated place where plenty of fresh air is admitted without draught; a bed of hay is very suitable under these circumstances, as being warm and soft and easily changed without disturbing the patient, much rest being very essential. The most scrupulous cleanliness is of the utmost importance, and must be strictly attended to; all discharges should be at once removed, and the extremities and any sores or out-breakings on the body, belly, or thighs lightly sponged with warm water containing a little of Condyl's Fluid or other disinfectant; the place where the dog is lodged should also be kept sweet by the use of disinfectants.

The water given to drink should be first boiled and allowed to get cold; water drawn from leaden pipes should be specially avoided; the diet must be light and nourishing, and the dog drenched with liquid food if he refuse to eat. Well boiled oatmeal and milk, or strong beef tea, or, if the dog be

purged, boiled wheaten flour, or arrowroot with milk and port wine, form suitable diet, as it must be made a first object to keep up the strength of the dog, and by such means as these and the use of the "distemper mixture," as given below, success is pretty certain. Much solid food is not advisable, and, indeed, a distemper patient will seldom take it; but it is absolutely necessary to keep up the strength. I have found great benefit from giving pups at short intervals small quantities of chopped up raw lean meat, beef or mutton, and when very low indeed a little weak brandy and water, followed by the meat, or Brand's Solid Extract of Meat given as a pill will rouse the patient and induce him to take more food, by which his strength is kept up. Tonics may also be given, alternately with the distemper mixture, where the appetite is gone and there is great weakness.

Simple Tonic.—Disulphate of quinine, 12grs.; tincture of gentian and syrup of orange, each 6drs.; diluted sulphuric acid, 10 drops, mixed, and a teaspoonful given to pups of medium-sized breeds, and double to larger ones.

In the pustular stage, when the belly, &c., breaks out in pimples, the tonic will be specially useful; and when the head is affected, and fits come on or are threatened, or there is twitching of the limbs, or any signs of a tendency to chorea, add the following to the distemper mixture:

Mixture for Chorea or Distemper.—Tincture of aconite, 24 drops; solution of strychnine (British Pharmacopœia strength) 16 drops, the latter gradually increased until three times the dose is given; this a chemist will regulate in dispensing the prescription.

Even after the more violent symptoms have abated, and the disease appears to have passed off, it is still necessary to use caution. Many a valuable dog has been lost by taking him out to exercise too soon after distemper, a very slight exertion sometimes causing a relapse, which in many cases proves fatal, the whole strength of the dog having been wasted in contending with the first attack. The owner, therefore, must not be in a hurry, patience and nourishing diet, with the daily use of the "tonic pills" (p. 10), which should now be had recourse to, will bring their own reward. The increase in the food should be gradual, and, in addition to the tonic pills, cod liver oil is of great benefit in restoring the dog to health and strength; but any special weakness (and such are often inherited from distemper) must be specially dealt with.

Dropsy.—This is an unnatural accumulation of water in different parts of the body, as in water on the brain, dropsy of the chest, dropsy of the skin, and dropsy of the belly; and it is the latter kind of dropsy that the dog is most liable to. Dropsy is generally, if not always, the result of some other debilitating disease, and especially of inflammatory disorders; but it may also be brought on by unsuitable diet, by the abuse of drastic purgatives; and a new danger of dropsy has sprung up with our shows, where dogs are too often kept on their benches to the suppression of the discharge of the excretions, which is a recognised cause of inducing dropsy. Dropsy of the belly need not in the bitch be mistaken for pregnancy, for in the latter the teats enlarge with the belly, and it is altogether firmer,

and does not droop until just before whelping, whereas in dropsy it is more pendulous and baggy, and the back is arched, and the water moves under pressure readily; the dropsical animal, too, is generally poor in flesh and harsh in coat. The medicines principally employed in dropsy are iodine, iron, and other mineral tonics, with digitalis and diuretics; but no amateur should attempt treatment of it, but place the patient under the care of a qualified veterinarian.

Dysentery.—This is a far more dangerous disease than diarrhoea, which, when protracted, sometimes causes it. The discharges in dysentery are immediately caused by inflammation of the mucous membrane lining the intestines, and are distinguished from diarrhoea by containing no fœcal matter except occasionally when it is voided in lumps; but the ordinary evacuations in dysentery, although they vary in appearance, are generally slimy looking and composed of mucous mixed with blood, and in the advanced stages of the disease pus is discharged and shreds of the mucous membrane, very offensive in character. The disease is very weakening, causes great pain and straining, and is very difficult to manage; it often occurs in protracted cases of distemper, and carries off the patient.

In treating dysentery the “anodyne mixture” (p. 33) should be tried in the first instance alone, and if ineffectual one of the following pills for a dog of 60lb. to 80lb. every four hours may be tried with good results:

Pills for Dysentery.—Take of tannic acid 2 scruples, and pure sulphate of copper 1dr., powdered opium 20grs., mixed, and divide into twenty pills; or if a liquid medicine should be preferred the following will answer: Take of pure sulphate of copper 48grs., dissolve in 2oz. of cinnamon water; add $\frac{1}{2}$ oz. of tincture of catechu, $\frac{1}{2}$ oz. of laudanum, 6drs. of aromatic spirit of ammonia, and make up to 12oz. with cinnamon water. Dose for an 80lb. dog two tablespoonfuls every four hours. Clysters of starch, with 1dr. of laudanum in each, are often very beneficial, and one may be thrown up every four or five hours.

The patient should have perfect rest, all evacuations should be instantly removed, and the place where the patient is (which should be warm, but airy) kept sweet with disinfectants. The food should consist of pearl barley, rice, arrowroot, or wheaten flour, boiled in milk, varied with strong-beef tea slightly thickened with stale bread or plain biscuit.

Dyspepsia.—See INDIGESTION.

E.

Ear, Canker of.—This disease is usually divided into “internal canker” and “external canker.” Canker is a term of very general application to many obstinate corroding or heating humours; it is equally applied to a disease of the foot of the horse, to that disease of the feet of cattle

sometimes called "foul," and also to the disease more generally known as "foot-rot" in sheep; but, so far as I am aware, the term is not applied to any disease of the foot of the dog, although the irritation produced by hard running on rough ground sometimes causes cankerous sores on the feet, which require the same treatment and yield to the same remedies as canker of the ear. Internal canker consists of inflammation of the lining membrane of the passage to the ear, which runs on to ulceration and suppuration, and when of long standing a blackish offensive discharge takes place and accumulates in the passage, and on examination the interior of the ear will be found to be red and inflamed. The dog thus suffering may be observed frequently scratching his ear with his paw, holding his head on one side and giving it a violent shake, as though to empty something out of the ear; and the pain and irritation arising from the disease causes him to rub and shake his head constantly and violently, whereby the flaps of the ears get bruised, ulcerations form, and the tips become obstinately sore, the inflammation existing in the interior lining membrane extends itself to the outside, through the constant shaking and scratching, and external canker is also established. It is not an uncommon belief that canker of the ear is confined to water dogs. This error arises, no doubt, from the fact that dogs such as water spaniels and others of that class, from their exposure, are most likely to get water lodged in the ears, the shaking and pawing to get rid of which frequently sets up the inflammation, ending in canker. The tears and scratches received from briars and thorns in working close coverts, if not attended to, may set up canker of the ear. All dogs are, however, liable to the disease, although the cause may not in all cases be so easily traced. The insinuation of wet and dirt, and the accumulation of hardened wax in the air-passage, are no doubt the prevailing causes, and are especially likely to produce baneful results where a bad system of kennel management co-exists. But in the interests of my canine friends I would ask whether there is not another frequent and needless cause?—whether those sportsmen (?) do not often produce it who, instead of correcting their dogs by the legitimate means of the voice and the whip, resort to another method, much to be condemned in my opinion, and certainly not approved by the poor brute

Whose ear undergoes
Such horrid tugs at membrane and gristle,
For being as deaf as a post to a whistle?

"Lugging" a dog is as cruel as kicking him; neither is a fit mode of punishment, and the former is very likely to produce canker. It is a very common mistake with a certain class of "dog doctors," against whom I took the liberty of warning my readers, to assume that the outward and visible signs in canker constitute the disease, and who adopt a course of treatment which would doubtless prove a radical cure if they were right in their suppositions, namely, cutting the poor beast's ears off; unfortunately, in addition to the cruelty, this course, as may well be supposed, only aggravates the disease. "External canker" generally

exists as a consequence and concomitant of inflammation, ulceration, or suppuration of the internal passage. There is a kind of mangy affection of the ears which is altogether different, but which may easily be confounded with it; in these cases the edges of the ears become dry, hot, and scaly, and the hair falls off, but this is really mange, and must be so treated. There are cases where the whole of the external ear becomes swollen and tender, and the flap thickened and filled with fluid between the skin and the cartilage or gristle; in such cases the best plan is, after bathing the ears well, to cut them with a lancet, press out the bloody matter, and having again well washed and softly dried the ears, let them be touched with the "lead liniment" given below. In the general treatment of canker of the ear the first thing is to remove any exciting cause that may exist, such as dirt, hardened cerumen (wax), &c., and this can be best done by carefully washing, and, if need be, syringing the ears with lukewarm water; and, in the case of hardened wax, pouring in a few drops of almond or olive oil. The bathing will in itself assuage the pain and irritation, and all the parts that can be got at should be afterwards carefully dried with a soft cloth. There are many applications recommended for canker of the ear, and endless nostrums advertised to cure it in a single day; all, or nearly all, are preparations of lead, zinc, or silver.

Silver and Zinc Lotions.—A solution of nitrate of silver is recommended by many; the strength should be from four to six grains to one ounce of water; or a sulphate of zinc lotion may be made as follows: Take sulphate of zinc 12 grains, wine of opium 1 drachm; water sufficient to make 1½oz. lotion.

I prefer the following preparation to anything I have tried:

Lead Liniment.—Take Goulard's extract of lead 1oz., glycerine and carbolic acid ¼oz., finest olive oil 4½oz. Mix the two first-named, and add the oil gently, rubbing together in a mortar. The bottle must be well shaken before the liniment is used.

All of these preparations are used in a similar manner, namely, by placing the dog's head flat on a form, or on the knee of the person who holds him, and then pouring a little into the ear passage, holding the dog in the same position for a minute or two, until the liquid finds its way into the seat of the disease. The preparation should also be applied freely to all the external sores. If there be no dark and offensive discharge from the ear, the carbolic acid and glycerine may be omitted from the lead liniment; and I may here observe that I mean that article to be of the strength ordered in the British Pharmacopœia, viz., one part pure carbolic acid in five parts pure glycerine. If any of the sores outside look "angry," scrape with a knife a little blue-stone into fine powder and dust them with it; or, after bathing and drying nicely, touch them with a point of lunar caustic. It will be of advantage, in treating canker of the ear, to give the dog a purgative, and in many severe and stubborn cases the administration of the "fever mixture" (p. 14) for a few days after the purgative will be of great benefit. The diet must be light, and consist partly of boiled green

vegetables. Many of the very best writers on dog diseases recommend a cap to be worn by the dog in canker of the ear to prevent the flapping and consequent irritation and injury to the tips of the ear from the violent shaking of the head, but so far as my experience goes, I am of opinion that it does more harm than good. It is manifest the cap cannot allay the irritation arising from the internal sores, neither does it prevent the dog from shaking his head, rubbing his ears against adjacent objects, and scratching them with his paws; on the contrary, I think it is obvious that the unusual covering to his head and confinement to his ears is likely to increase the irritation and excitement, and so hinder the process of cure. But those who wish to try a cap can readily make one with a piece of calico of sufficient length to reach round the dog's head, having two pieces of tape running through a hem at each side lengthwise, wherewith to draw the cap tight round the dog's neck behind the ears, and again just above the eyes, tying them underneath.

The following treatment of canker in the ear is taken from the *Veterinary Journal*, Sept., 1875: "In the 'Recueil de Médecine Vétérinaire,' Cocult recommends as a very successful method of dealing with these auricular chancres the application of some blistering ointment or liquid over the external surface of the ear. The preparation he employed was tincture of cantharides $4\frac{1}{2}$ dr., tincture of galls 1 dr. This was applied once every two days, and by its influence the intolerable itching which accompanies the disease was allayed, and a smart but inconvenient pain substituted. The animal no longer shakes its head nor scratches the ears with its paws, and the chancres soon disappear."

Ear, Polypus in the.—This is, in my experience, of rare occurrence. It should be excised by a veterinary surgeon.

Ears, Cropping and Rounding of.—Rounding is adopted in most kennels of hounds, although the practice is by no means universal, some hunting men contending that it is unnecessary. The object of it is to prevent the ears getting torn in pressing through briars, whins, &c., in coverts and thick hedges. The quantity of flap removed varies according to the whim of the operator; many have the ears shorn to an extent uncalled for by the avowed object, and with the effect of giving the dogs a very ugly appearance. Cropping, which fashion prescribes for certain unfortunate breeds of terriers, has no justification offered for it except the taste (?) of the admirer of the effects of this cruel and useless operation. It is said cropped terriers look sharper and handsomer than those with the ears left on, but the absurdity of this appears when we remember that it is not applied to Dandie Dinmont, Bedlington, or fox terriers. It is cruel, not only in the pain the operation causes, but far more so in exposing one of the most delicate organs to the effects of cold, wet, sand, and dirt, by removing the part Nature intended as a protection. What would be thought of a fashion that demanded that the eyelid or the haw should be removed, with the result that the dog could not clean his eye from matter blown into it? Cropping, by exposing the internal parts of the ear to the weather and to the intrusion of particles of sand,

&c., produces canker, inflammation, and deafness, and cannot be too strongly condemned. When it is resorted to, humanity suggests that the dog should be placed under the influence of an ænesthetic, and the edges of the ear should be at once saturated with tincture of matico or other styptic.

Ear, Swelled Flap of.—When the flap of the ear presents a dropsical appearance, and it is seen, on pressure, that liquid exists between the integuments, it should be scored with a lancet, the liquid pressed out, the flap bathed freely with lukewarm water, and afterwards dressed three or four times a day with Goulard's Lead Water, at the same time a dose of purgative medicine will generally be required.

Earth as a Disinfectant.—See *Disinfectants in Canine Materia Medica.*

Ear, Wax Hardening in the.—In this case warm water injections are often useful, and after using them the ear should be carefully dried, the dog's head laid flat on one side, and a little oil of sweet almonds poured into the cavity. This should be done daily, until the wax is softened and discharged.

Eczema, Blotch, Surfeit, Red Mange.—In the previous edition of "The Diseases of Dogs" I treated of eczema under the head of mange, because it is usual to class it as mange, except by professional men, and I see no reason to change the original arrangement further than to introduce the term in its sequence, and to mention here the broad distinguishing characteristics which separate it from what is called true mange.

Eczema differs from mange in being non-contagious; it is constitutional and not caused by parasites, as are the forms of mange known as scarcoptic and follicular. It may be either general or local, and consists of an eruption of very minute vesicles; these discharge an acrid fluid, and often run together. The skin has a scarlet appearance, and frequently becomes completely denuded of hair. It will be found further described, and treatment given, under MANGE.

Emasculation.—This is sometimes resorted to, but in my opinion is a practice to be condemned; it makes the dog lazy, listless, and good-for-nothing; causes him to lay on fat in such a manner as to induce disease. It has been claimed for it that it is a preventive of canine madness, but the opinion of the highest authorities, fortified by statistics, shows this opinion to be baseless, although it is easy to understand how the idea would take root in the mind of a superficial observer. The law which at present allows an owner to let a bitch in season wander at large is an offence against decency, and leads to no end of dog fights; and as under the influence of rabies dogs are unusually salacious, should one be in the neighbourhood, he is even more likely than at another time to spread the disease, because of the congregation of dogs under excitement.

The operation is not one which should be attempted by amateurs, and it is not therefore needful to enter into particulars here, but those who wish for information on the point will find it in Professor Law's "Farmer's Veterinary Adviser."

Enteritis.—See BOWELS, INFLAMMATION OF.

Entozoa, Internal Parasites.—See WORMS.

Epilepsy.—Most of our domestic animals are subject to this, and among the stock owners in general it is called the "falling sickness." Dogs are peculiarly liable to it. It is characterised by sudden loss of sensation and a violent convulsive action of the muscles, both of the body and limbs, and often champing of the jaws, and emission of froth from the mouth, which, as the tongue is apt to get cut by the involuntary action of the jaws, not infrequently gets tinged with blood, and this adds to the fears of those ignorant of the nature of the disease, and from unfounded alarm that the dog may be mad, many a poor animal is destroyed. Epilepsy will be found more fully dealt with under FITS.

Eyeball, Protrusion of.—It sometimes occurs in fighting that the eyeball is forced out of its socket, and the lid, contracting, prevents its return. I cannot recommend the amateur to attempt to return the eyeball to its place, but the veterinary surgeon should be sent for, and in the meantime a small stream of lukewarm water should be kept running on to the part to keep the muscles relaxed as much as possible, to facilitate the necessary operations in returning the eyeball to its place.

Eye, Diseases of.—Accidents to the eye are not uncommon, such as scratches by a cat, or injuries from a blow or in fighting. In such cases, the first thing to do is to bathe with warm water for half an hour or so to reduce the swelling and inflammation which follow, and if the injury is great a veterinary surgeon should be allowed to deal with it, but otherwise the constant application of a lotion of one drachm of Goulard's Extract of Lead, half an ounce of wine of opium, and half a pint of distilled water, two or three times a day, will probably be sufficient. See AMAUROSIS, CATARACT, OPHTHALMIA, and HAW, ENLARGEMENT OF.

CLOUDINESS AND WHITE SPECKS.—These follow inflammation, and seem to be dependent also on general health. Ulcers also sometimes form and leave a round whitish spot.

This should be treated by applying with a feather or camel's hair pencil a solution of nitrate of silver, three to six grains, dissolved in an ounce of distilled water, twice a day, and in giving the dog tonics, such as the pills prescribed on page 10.

Eyelashes Turned in.—This occasionally occurs, and a very singular instance came under my notice two years ago of an Irish setter, the property of a lady in Dublin. The dog was brought to the Alexandra Palace show, where I was asked to examine it. The eyelash grew right across the pupil, interfering both with the dog's comfort and his vision. It had been excised by an eminent oculist, but persisted in growing again exactly as before. I asked Mr. Hunting, F.R.C.V.S., who acts as veterinarian for the Kennel Club, to look at it, and he prescribed excision and cauterisation of the part from which the hair sprung. I believe the case was new even to his experience. In ordinary cases simply snipping with the scissors proves a cure.

Eyelids, Warts on.—See WARTS.

Eyes, Watery or Weeping, appear to be inherited by some pet breeds, such as the Blenheim spaniel and the Maltese terrier particularly. Strong astringents in these cases do harm, and induce inflammation, but bathing simply with cold water constantly will sometimes effect some good. The principal thing, however, is to attend to the general health.

F.

Fatness, Excessive.—A certain amount of fat is a sign of health, and therefore desirable; it is the store of fuel that nature does not immediately require to keep the machinery of life going, and which she thriftily lays up to meet future exigencies, but an excess of fat constitutes a morbid and diseased state of the body. Some dogs are prone to put on fat even when on a comparatively meagre diet, and certain breeds are predisposed to obesity; this is specially the case with pugs and most varieties of spaniels.

The causes are confinement and want of exercise, together with overabundance of food, or of a quality too rich in fat-producing materials.

The castrating of dogs and spaying of bitches also causes accumulations of adipose matter by taking from the dog one of the secreting organs, and all dogs refused sexual connection are apt to become excessively obese.

The effect of excessive fat is to set up some skin disease, with discharge therefrom, as a means of ridding the system of the superfluous matter: or the fat will accumulate round the vital organs, interfering with the animal's respiration, making the breathing laboured, wheezy, and asthmatical, very painful to the sufferer, who blows and pants on the slightest extra exertion, and most disagreeable to the owner. In dogs not allowed to breed, fat accumulates round the kidneys and the ovaries of bitches; the heart also becomes surrounded with fat, and what is called fatty degeneration ensues, which may cause sudden death.

The treatment consists in altering the diet. Give gradually poorer food, and less of it, and at the same time increase the exercise, so that the consumption of fat may for the time being exceed the supply taken in the food. In some cases, however, the predisposition or acquired habit of body is too strong for these measures, in which case a brisk purgative may be given twice a week, and, in addition, a dog 30lb. to 40lb. weight should have two grains of iodide of potassium twice a day, given in water just after meals. Bitches should occasionally be allowed to breed and rear one or more puppies.

Feet, Sore.—Dogs that travel much on hard dry roads, as Dalmatians often do, and sporting dogs hunting over rough ground, short stubble, or stumpy heather, are apt to get the spongy elastic pads of the feet contused and worn thin. The treatment depends on the extent of the injury; if

merely tender and slightly inflamed, bathe with cold water and afterwards apply freely the following :

Lotion for Sore Feet.—Tincture of arnica and tincture of matico, of each $\frac{1}{2}$ oz. ; tincture of opium, 1 oz. ; acetic acid, $\frac{1}{2}$ oz. ; water, enough to fill a wine bottle.

If the case is severe, first apply a poultice of half bran and half boiled turnips. Sometimes the inflammation is great, and the feet become swollen, hot, and painful, so that the dog cannot stand, and the general health suffers. Feverishness and loss of appetite reduce his strength, matter forms in the feet, or the sole sloughs off. In such cases linseed meal should be added to the other ingredients of the poultice, and a little olive oil poured over its surface. The dog should have a mild aperient and a dose of fever mixture (p. 14) three or four times a day, and be kept on a light diet. It may be necessary, for the more speedy relief of the dog, to let the matter out with the lancet, and in all respects these cases should be treated as ulcers. Dogs long confined should not be at once run much on hard roads or worked on rough ground, but their feet gradually hardened by daily increased exercise.

Fistula in Anus.—This is not uncommon in pampered, overfed dogs. It is partial or complete. Usually it presents itself as an opening at the side of the anus, and extending inwards up to the gut, when, of course, it can be seen ; but in other cases there is no external opening. The causes are constipation, when the hardened fæces abrade the surface in its expulsion ; or neglected piles, resulting in ulceration ; or fistula of the anus may arise from a wound inflicted on the part. The symptoms of internal fistula are the dog dragging himself along the ground, but that is also done when worms exist in the intestines ; but in fistula the voided matter is very offensive, and often covered or marked with blood and matter. The treatment should be left to the veterinary surgeon, who will lay the sinus open and apply remedies to set up healthy action and close it up.

Fits.—Fits are of common occurrence, especially in puppies—fortunately those that are of a dangerous and fatal character are the most rare ; they often cause needless alarm, but the dog suffering from a fit of whatever kind is not an object to be frightened at, but to be commiserated and helped, and this requires freedom from a fear for which there is no just reason. Fits are of many kinds, and may be classified as apoplectic fits, distemper fits, epileptic fits, fits from teething, fits from worms, and suckling fits, and other causes of excitement are known to produce them, even high notes of music, to which some dogs show a strong objection.

APOPLECTIC FITS are caused by pressure on the brain from distended blood vessels or the effusion of blood. The subjects of attack are generally those dogs that are kept in idleness and overfed, and the attack may be the immediate result of the animal overloading the stomach with food difficult of digestion. The symptoms are loud and laboured breathing ; the dog lies motionless on his side in a state of insensibility—there is no frothing

at the mouth or champing of the jaws, but the eye is always fixed and bloodshot. Such cases are usually fatal, and death is frequently instantaneous; prompt bleeding is the most likely means of saving the patient; and then, as soon as sufficiently recovered, a strong purge should be given or clysters administered. Should these means prove successful it will be necessary to use extreme care to prevent a recurrence of the fit. The dog's diet must be carefully regulated, sufficient healthful exercise allowed, or compelled, if need be, and occasional doses of cooling medicine given.

DISTEMPER FITS are caused by inflammation of the brain, and are often a fatal symptom in distemper. They have been already treated under that head.

EPILEPTIC FITS are of very common occurrence, and generally happen when the dog is at exercise—sometimes in the case of pointers they are seized when in the act of discharging that part of their duty; doubtless from the undue excitement produced. When the dog is attacked he is first observed to tremble on his legs, and on trying to run on he staggers and falls down on his side, frequently uttering a low moan—struggling to his feet he attempts to move only to repeat the fall, when he lies stupefied and insensible. The legs and the whole muscular system are violently convulsed, producing a variety of contortions of the body; the dog froths at the mouth, the head is violently moved, often knocked against the ground, the jaws are champed together, and sometimes the tongue, getting between the teeth, gets lacerated, and the froth that dribbles from his mouth becomes tinged with blood; the breathing during the fit is laboured and irregular, it generally lasts several minutes, and when the convulsions have subsided the dog raises his head and opens his eyes with a look of surprise, and very shortly runs about as if nothing had happened.

The treatment for epileptic fits is to lift the dog gently, and at once place him in a dry place, and on some soft material where he cannot hurt himself in his struggles. As soon after as possible give him a dose of the "anti-spasmodic drops" (p. 12), and leave him quiet in a warm comfortable place. Endeavour to ascertain the cause of the fit. If from over feeding, reduce the diet and give more gentle exercise, and, if need be, repeated doses of cooling medicine—from three to eight grains of bromide of potash given in water daily for a month, will prove wonderfully beneficial to dogs predisposed to epilepsy. A dose of syrup of hydrate of chloral is also useful in allaying the nervous excitement and inducing sleep, which is the best restorative after a fit.

SUCKLING FITS are produced by exhaustion consequent on the bitch having too many pups left on her. She lies or falls down breathing heavily, becomes insensible, and is frequently much convulsed. The remedy is simple. Remove all the pups but one or two; let the mother have a generous diet, and if much reduced give the "concentrated tonic mixture" (p. 20) for a few weeks, or the "tonic pills" (p. 10).

TEETHING FITS usually occur either during the first month, or about the sixth month, when the permanent teeth are coming. Cutting the gums

with a lancet is sometimes resorted to, but as a rule a little opening medicine is all that is needed.

WORMS CAUSING FITS.—When these parasites are the producing cause, that fact may often be ascertained by examining the fæces voided during or just after the fit when some of them will probably be seen, or the presence of worms may be determined by the symptoms given under that head, and the treatment there prescribed should be adopted.

Flatulency.—This is an evidence of indigestion, but not very frequent in the dog as far as my observation enables me to judge.

Treatment for immediate relief should consist in giving to a 40lb. dog half a teaspoonful each of carbonate of magnesia and charcoal in a little milk, in food, or as a bolus, and for permanent cure correct the indigestion with the proper remedies prescribed for it.

Fleas.—See PARASITES, EXTERNAL.

Founder of the Chest—See KENNEL LAMENESS.

Fractures.—See BONES, BROKEN.

G.

Gastritis—STOMACH, INFLAMMATION OF, which see.

Gatherings.—See ABSCESSSES.

Glanders.—This dreadful and fatal malady of horses can scarcely be called a dog disease, but as they are capable of inoculation, it is well that the fact should be recognised, for it appears to me that with the institution of drinking fountains for horses, &c., in our great towns, dogs may thus get infected, and be the means of spreading this most invidious disease. I mention the fact, that extra care and precautions may be taken by dog owners, and not to reflect on the drinking fountains, which, although they may occasionally be the medium of communicating the disease from one animal to another, are, on the whole, such a vast benefit that the good they do far outweighs the small risk inseparable from the promiscuous use of them by healthy and unhealthy animals.

Gleet.—Blaine gives this name to a discharge from the prepuce, but it appears to me the name is misleading. For further information see PENIS, DISCHARGE FROM, which, although not perhaps strictly correct, is adopted as being the most generally useful and readily understood heading. Professor Law, however, enumerates both Gleet and Gonorrhœa among the diseases of dogs.

Goitre, or Bronchocele.—This term is applied to a swelling or lump that appears on the front part of the neck. It is soft and elastic to the touch, and appears to give no pain except when it increases to such a size as to interfere with the breathing. It is especially a disease of old dogs; although it occurs in ill-fed and scrofulous puppies, and short and thick-

necked breeds are specially liable to its attacks. The treatment consists in applying the following ointment daily till the swelling disappears, and in giving cod liver oil, in doses from a teaspoonful to a tablespoonful, twice daily for a month or two; or in the same way iodide of potassium, in doses of from two to four grains, in water or decoction of sarsaparilla. I have found that in addition a dose of Chemical Food three times a day hastens the cure, and gives tone. Dogs suffering from Goitre should be extra well fed.

Ointment for Goitre.—Take iodide of potassium, 1 dr. ; lard, 7 dr. ; mix, and apply as directed above.

Gripes.—See COLIC.

Gutta Serena, or Amaurosis.—Gutta Serena is an Arabic term, signifying “clear drop,” from the unnatural clearness and brightness of the eye in this disease. See AMAUROSIS.

H.

Haw, Enlargement of—The haw, or third eyelid as it is sometimes called, is a fold of membrane situated at the inner corner of the eye, and capable of expansion, and is used to sweep across the globe of the eye to cleanse it from flies, dirt, or other foreign bodies that have been blown in. This membrane from constitutional causes, or from blows, or the irritation from extraneous matter lodged in the eye, sometimes becomes inflamed and enlarged, interfering with the sight and preventing the eyelids from closing.

The treatment consists in applying astringent lotions, lunar caustic, or in cutting off the excrescent growth according to the circumstances of the case.

Heart, Diseases of.—Diseases of the heart are not commonly met with. Enlargement and fatty degeneration are the most frequent; and generally when the heart is affected it is consequent on some other disease. I know of no treatment likely to produce a cure.

Hepatitis—Inflammation of the Liver.—See JAUNDICE.

Hernia, Umbilical.—See NAVEL RUPTURE.

Hiccough.—This arises from indigestion, and often annoys house pets that are given improper food, such as sweets, &c.

Give milk, with a wineglassful of lime water to a tumblerful, to drink, and give to a toy spaniel, pug, or other dog of that size 10gr. of bicarbonate of soda, and fifteen drops of sal volatile in a tablespoonful of milk.

Husk.—Dogs are subject to a dry husky cough, associated with derangement of the stomach.

The symptoms are dry hot nose, disagreeable breath, inflamed eye and

increased discharge from nose, with more or less general fever; the dog after coughing retches, bringing up portions of frothy mucus.

The treatment consists in keeping the dog free from damp and cold, feeding on warm, easily digestible food, and the administration of a dose of salad oil every third morning, and the following two sets of pills, two a day of each given alternately:

Pills for Husky Cough.—Powdered opium, 6gr.; tartarised antimony, 1gr.; compound squill pill, 1dr., mixed and divided into twelve pills, one to be given to a medium-sized dog twice a day.

Tonic Stomachic Pills.—Pure sulphate of iron, 24gr.; dried bicarbonate of soda, 24gr.; and extract of camomile, 24gr.; mixed and divided into twelve pills. One each of these is a dose for a 40lb. to 50lb. dog. In some instances husk is caused by worms in the stomach, for treatment of which see article WORMS.

Hydrophobia.—See RABIES.

I.

Indigestion.—Indigestion means that the food taken into the stomach is not digested or made fit for the nourishment of the body, showing that the stomach, from some cause or other, has altogether or partially lost its power of performing its most important office. This state of things is brought about in various ways, such as want of exercise, improper food, or the giving of food irregularly. An over-plentiful meal after too prolonged a fast will bring it on; but the cause or causes must be of some standing to produce a serious attack. The symptoms of indigestion are a vitiated appetite, the dog turning up his nose at wholesale food, or eating it mincingly and slobbering it about, and giving a preference to filth and garbage. Flatulence is often an accompaniment of indigestion. There is generally considerable thirst, and the disorder is often attended with vomiting. When of long standing the gums become inflamed and the breath foul and offensive. Indigestion is the cause of many other forms of disease, which surely follow neglected cases—derangement of the bowels is almost inseparable from it, attacks of diarrhœa occur, sometimes alternating with fits of constipation, or confirmed constipation may exist. Sometimes the dog becomes excessively fat and suffers from asthma and asthmatic cough. As a secondary symptom mange in one form or other often occurs. During the attack the dog's temper is generally fitful and snappish. In treating for indigestion the most important thing is to remove the probable cause or causes. Give a sufficiency *only* of plain wholesome food, and keep within the dog's reach a supply of clean fresh water. Remedies must be administered according to existing circumstance—diarrhœa, for instance, being treated as recommended under that

head. The one main object, however, must not be lost sight of, namely, to give tone to the stomach and bring that organ back to a proper discharge of its functions. To this end give an aperient bolus, made as follows :

Aperient bolus.—Take Barbadoes aloes, 45grs. ; powdered jalap, 1dr. powdered ginger, 1dr. ; Castile soap, 2drs. Make into a mass, and divide into 15 grain balls. Dose—one, two, or three, according to the size of the dog. Even when diarrhœa exists these may be given with advantage.

When the bowels have been freely acted upon give the following twice a day until health is restored :

Stomachic bolus.—Take powdered rhubarb, 1 scruple ; powdered ginger, 1 scruple ; extract of gentian, 4 scruples. Mix and divide into twenty-four pills. Dose—one or two twice a day. If there is much flatulence put a little bicarbonate of soda on the back part of the tongue and let the dog have water ; or give occasionally 20 drops of spirit of sal volatile in water. These means, with careful diet and exercise, will be found successful.

Inflammation.—See under name of part affected.

Influenza.—This is an epidemic resembling common cold, but more severe in its effects, and contagious. The causes are supposed to be atmospheric cold, and damp weather in spring and autumn, which are the usual seasons of its appearance.

The treatment should be similar to that of common cold, and the dog will require still more care in keeping warm in a well ventilated place, and in being supported with easily-digested food, such as strong broth, beef tea, boiled milk and bread, &c. In the early stages Hoffman's Anodyne or Compound Spirit of Sulphuric Ether, given in milk three times a day, is generally beneficial, and any discharge from the nose should be encouraged by warm fomentations, and making the dog inhale the vapour from vinegar of squills sprinkled on a hot wet sponge or cloth. If the throat is swollen and sore, slightly blister with vinegar and mustard. In convalescence give cod liver oil and syrup of iodide of iron.

Intussusception.—This is when in spasm of the bowels one part slips into another, or telescopes, causing obstruction of the bowels. It cannot be certainly determined until post mortem examination is made, and, of course, there is no effective curative treatment. The only measures are preventive, and these consist in so studying the dog's health and diet, so as, as far as possible, to prevent colic.

Inversion of the Uterus, Vagina, &c.—See under these heads.

Itch.—See MANGE.

J.

Jaundice, or the "Yellows," and Inflammation of the Liver.
—To be strictly accurate we should treat jaundice and inflammation of the liver as distinct diseases, but to the ordinary dog owner the division would be of little or no use, the causes and general treatment being alike. In-

flammation of the liver exists in two forms—the acute and the chronic: the former the more rare, and making its appearances more suddenly; the chronic often occurring as a sequel of the acute. The causes of the disease are very various, but in most cases they are traceable to improper and over-feeding, combined with want of exercise, which account for the great number of such cases occurring in house and pet dogs. In sporting dogs it is often brought on by continued exposure to wet, immersion in water during cold, inclement weather, lodgment in damp kennels, or over fatigue. One very common cause is the repeated resort to powerful emetics, which many people use as if they possessed a charm over dog diseases. I believe an occasional cause of liver complaint may be found in a too forcing system of training adopted by some greyhound trainers and others. On the whole, however, improper and over-feeding must be credited with the greatest share in the evil. The liver in a healthy state secretes a yellow fluid called the gall; this is collected in the gall bladder, and is intended to mix with the chyle and complete the work of digestion. When obstruction of the gall bladder takes place, the gall is diverted from its natural purpose and gets diffused through the whole body, giving a bright saffron colour to various parts, notably the eyes, lips, inside of the ears, inside of the arms and thighs, and in some cases to the whole skin, thus giving its name of “The Yellows” to the disease.

Jaundice is of very frequent occurrence, and, as has been before observed, often exists as a complication of distemper, and when this is the case it is most difficult to manage, on account of the already reduced strength of the dog (*see* DISTEMPER). All treatment must be to some extent determined by the circumstances of each case.

The invariable yellow colour of the parts mentioned as a symptom in this disease is one which the least careful observer cannot fail to notice, but before this occurs there are other symptoms which should not be overlooked—in the earlier stages the dog’s appetite fails, he suffers considerable thirst, which increases as the disease progresses; there is fever, with alternate fits of heat and shivering; vomiting may occur, and the matter ejected is generally slimy and of a yellowish colour; the urine is passed in small quantities, and is a deep yellow or greenish yellow colour; the bowels are generally constipated, and the excrement of a pale clay colour. In chronic cases the belly is enlarged and flatulence often exists; on the right side a swelling may be felt, pressure of which causes the dog to flinch and groan. In severe cases the dog rapidly loses flesh, soon becoming a mere skeleton; the coat is rough and staring, and often comes off in patches. It is no uncommon thing to find this disease coexistent with virulent mange. All writers I have consulted on the subject recommend mercury in the treatment of jaundice, so I here give particulars of its dose, and the mode of administering it, for the benefit of my readers, although I do not myself use it:

Mercurial Treatment of Jaundice.—Calomel 2grs. to 4grs. with 1gr. of opium given every six hours, is a not uncommon prescription. Mr. Meyrick prescribes the following:—“Blue pill 3grs., opium 1gr., to be

given every five or six hours. If diarrhoea be produced by this treatment the quantity of opium must be increased and the mercury, if necessary, reduced to 2gr."

I recommend the following in preference to the mercurial treatment :

Powder for Jaundice.—Take podophyllin $\frac{1}{2}$ gr., powdered rhubarb 10grs., powdered jalap, 10grs. This to be given to a strong dog of from 50lb. to 60lb. weight, and smaller dogs in proportion. After the first dose half the quantity should be given daily, or night and morning if necessary.

If the bowels be not freely opened after the exhibition of the first powder a dose of salts and senna (black draught) should be given; on the other hand, if diarrhoea exist, or be produced, from $\frac{1}{4}$ to $\frac{1}{2}$ grain of powdered opium should be given with each powder. In conjunction with the above the following mixture must be given :

Mixture for Jaundice.—Take bromide of potassium 1dr.; taraxacum (dandelion) juice, 1 $\frac{1}{2}$ oz.; mix, and give a teaspoonful three times a day in water or gruel. This dose for a dog about 50lb. weight.

If the attack occur during distemper, the "distemper mixture" (p. 42) may be used instead of the above. When, as in chronic inflammation, the liver is enlarged, the "liniment for sprains" (p. 22) may be well rubbed round the region of the liver, or a strong mustard plaister applied; or take a piece of flannel, dip it in hot water, wring the water out, pour some spirit of turpentine over the flannel, and apply to the affected part. It is very important that the bowels should be freely relieved at the outset, and if the means advised above prove unsuccessful, it would be well to resort to clysters of oatmeal gruel and castor oil. Throughout the attack the diet is an important matter; it must be light and nourishing, and in a fluid or sloppy form. Boiled wheaten flour, with beef tea or mutton broth, make a suitable diet, and the dog should be kept warm, dry, and comfortable, and as little disturbed as possible.

Joints, Enlarged.—All large joints are not diseased; in fact, in selecting pups in the nest big jointed ones are to be preferred, but enlarged joints, from the want of the hard, earthy materials in the bone, which makes them yielding, so that they cannot support the weight of the body, and consequently give way, producing deformity, are often met with, and the cause is generally bad food and want of good water, fresh air, and sunshine. See RICKETS.

K.

Kennel Lameness, or Chest Founder.—This is a rheumatic affection of the forequarters, and particularly of the muscles connecting the shoulder blade with the trunk. It is caused by exposure to wet and cold, generally by the dog being kept in cold, damp, or draughty kennels. The symptoms

are stiffness and soreness of one or both shoulders. This is most observable when the dog is running down hill, or when caused to jump, as of course then the whole or greater part of the weight of the body is on these parts. Left to himself, the dog shows an indisposition to move, and experiences pain if the hand is passed over his shoulders, indeed, even when an attempt is made to touch him he shrinks from the hand with a snarl or anticipatory cry of pain. In long standing cases, power of movement of the forequarters is almost lost, and many cases are incurable.

The treatment most advisable in such cases is to give a warm bath, and after thoroughly drying, rub the parts well with a liniment composed of equal parts of spirit of turpentine, spirit of hartshorn, and laudanum, or, that failing to give relief, the following should be tried.

Liniment for Rheumatism.—Take liniment of aconite, one part, compound camphor liniment, two parts; mix; to be rubbed into the affected parts continuously for half an hour at a time, using considerable friction.

The rheumatic liniment is an expensive preparation, and it is also a powerful poison, so that great care must be used with it. The dog's coat should be wiped dry after applying it, and it would be advisable that he wear a wire muzzle. The bowels should be freely acted on, and the "compound podophyllin pills" (p. 42) will be the best aperient. The following mixture should also be given:—

Mixture for Rheumatism.—Take iodide of potassium, $\frac{1}{2}$ drachm; sweet spirit of nitre, $\frac{1}{2}$ oz.; water $3\frac{1}{2}$ oz. Give one to two dessert spoonfuls for a dose twice a-day.

The food should be sloppy and nourishing, and the dog kept in a warm, dry place free from draught.

Kidneys, Inflammation of.—This is a disease of a very dangerous nature, fortunately not very often met with in the dog. It is known by the presence of intense fever, great pain across the loins, a peculiar straddling gait, and the ineffectual or only partially effectual efforts to pass urine, the quantity voided being small and sometimes mixed with blood. The disease may arise from the presence of stone, or may be caused by blows or sprains in the lumbar region, or it may be the result of administering in overdoses turpentine, cantharides, or other powerful excitants of the urinary organs. The treatment of such cases should properly be handed over to the qualified veterinarian; and I can only suggest as likely to give relief, continuous bathing of the whole surrounding parts with warm water, relieving the bowels by means of clysters, and reducing the attendant fever by daily doses (12 grains for an average dog) of Dover's powder, and the constant use of the "fever mixture" (p. 14).

L.

Labour, Premature.—This is occasionally caused by over exertion, leaping from a high place, injuries, and the abuse of purgatives, as well as the result of diseased organs; it is not of very frequent occurrence, bitches generally whelping exactly sixty-three days after the visit to the dog, although there are numerous instances where the time is varied more or less. When it does occur the bitch should be placed in a comfortable room and kept perfectly quiet, fed on broth, porridge, &c., and repeated doses, one every four or five hours, of opium should be given. See also PARTURITION.

Lacteal Tumours.—This is one of the commonest forms of disease met with in dogs, and it appears to me to increase in frequency, which is to be accounted for by the acknowledged fact that highly bred and highly fed dogs are the most liable to it. Every dog owner must know what a common thing it is to see a bitch with an unsightly enlargement of one of her teats, or adjoining it; not only is it very unsightly, but when grown to a considerable size, as it will do, it is very liable to injury when the bitch is travelling over rough ground, going over fences, or even from her own legs striking against it when running, besides the irritation caused by it vibrating like a pendulum when she is running.

The symptoms are self evident, but in the earliest stages may be overlooked when the lumps are no bigger than the end of the finger, but what is of most importance to be attended to is the cause.

The immediate cause is the damming up of one of the milk ducts, the teat is "blind," as it is called in dairy parlance, that is, the flow of milk through it is obstructed by some malformation; but far oftener the milk itself is the cause, that is to say, it is not drained off sufficiently, and then the milk hardens, acts as a foreign body, and, still further, as an irritant, because of its chemical decomposition; the effect of this is that more or less inflammation of the milk gland is produced, a hard lump forms and increases gradually, and once begun the evil develops more and more at each returning period after œstrum, when pupping has or should have taken place. From the numerous questions I have put to me on the subject it does not appear to be generally known by those who keep dogs that most bitches, especially of those that are well kept and carefully fed and housed, even if they have been secluded from the dog during the period of heat, will secrete milk at the time they would have had pups had impregnation been allowed, but such is the case; and it is the duty of the owner to note the time and look out for the evidence of milk being secreted, and have it regularly drawn off by a strange pup if the bitch will allow it, and if not, by the hand, or by one of the many breast exhausters, giving at the same time a light diet, with an extra proportion of boiled vegetables and a few doses of cooling aperient medicine. Permitting a bitch when in milk to lie on cold bricks or flags, or exposure

in other ways to cold and damp, may also cause obstruction of the teat and subsequent tumour; and blows, bruises, and wounds may also produce a like result. A not uncommon cause of these lacteal tumours is the hurried drying up of the milk by artificial means. It is sometimes desirable to destroy pups that are the result of a *mésalliance*, but it is absolutely cruel to deprive the poor mother of all of her progeny. At the risk of being charged with wandering from my subject let me beg of my readers in true humanity to show the same consideration towards their cats. In addition to the cruelty, there is always the risk of the flow of milk damming up one or more of the teats and producing tumour. Even if the poor bitch escapes tumour, milk fever is dangerous, but fortunately that is a comparatively rare canine disease.

The measures of prevention against lacteal tumours will, from the foregoing remarks, have suggested themselves to the reader. Nature has ordained the female dog to bring forth young at least once in twelve months, and, though Nature permits us to take certain liberties with her laws, if we go beyond certain lengths, disease follows as a punishment; even when we interfere with her prerogative, it must not be by direct contradiction, but by diverting her forces into other channels. When we forbid the bitch to breed, we put an embargo on certain functions, and the energy that supplies and works these functions we divert by exciting extra secretions of the bowels, kidneys, &c.; but the safest, because the most natural, prevention of disease, is to let the bitch breed. Let the brood bitch have a comfortable, warm, dry, and secluded place wherein to nurse. During pregnancy give regular, but not violent exercise.

When it is desired to "dry" the bitch, that is, to stop the secretion of milk, it is wrong to give alum and other astringents, and to rub brandy &c., along the mammae. The object is more surely obtained gradually, and that without the risk of untoward results, by drawing what milk there is off regularly, giving a spare diet, a good purge, followed by two to three grains of iodide of potassium, twice a day, and rubbing well with the following liniment:

Liniment for Drying Bitches.—Iodide of potassium, 2dr.; soap liniment and oil of camphor, of each 2oz.

In all cases, leave with her at least one pup, and daily examine her to see whether the milk is drawn off completely, and if not, do so artificially.

When the tumour has formed, and the bitch is still in milk, draw the milk off twice a day, and in any case, give a brisk purge, and keep her on a spare, and rather dry diet, and to one of 30lb. to 50lb. weight, give twice a day 3gr. of iodide of potassium, in about two tablespoonfuls of water, immediately after feeding, and apply twice or thrice a day the following ointment to the lumps or swelling:

Ointment for Lacteal Tumours.—Iodide of potassium, 1dr.; powdered camphor, 1dr.; strong mercurial ointment, $\frac{1}{2}$ oz.; spermaceti ointment, loz.; mixed. Rub a little well in, with gentle friction.

If these means do not prove sufficient for the dispersion of the swelling,

add to the above ointment, two scruples of resublimed iodine, dissolved in a little spirit of wine.

When the swelling has gone on so far unheeded that matter is formed, and becomes soft and ripe (which may be told by the fluctuating of the fluid under pressure of the fingers), there is nothing for it but the lancet, which should be inserted in the soft part, and a cut made downwards, to ensure perfect drainage. The parts must be then frequently bathed, and the matter pressed out, washed with solution of Condyl's fluid, and dressed with Turner's cerate, while the patient should have a good strong purge.

Lameness. — This may arise from a cut foot, a thorn, injury to the spine, one of the limbs or joints, or from rheumatism. When lameness comes on suddenly, the cause should at once be diligently sought for, when the treatment will be indicated according to its nature. See KENNEL LAMENESS.

Laryngitis, or Inflammation of the upper part of the Wind-pipe.—This is a common affection caused by cold and also incessant barking, hence it is very often met with in drovers' dogs, and the continuous use of the voice at our dog shows frequently produces it; the dog becomes hoarse and the power to bark articulately is lost. Yard dogs kept constantly on the chain are also common sufferers. For my own part I never can understand why so many people desire a yard dog that is always straining on his collar and keeping up a never ending noise in trying to get at somebody or another without discrimination, but people do like what they call a "savage" yard dog, which generally means a dog without intelligence and training; and these brutes, whilst they frighten timid people, do more harm than good, they cry "wolf wolf," until the master gets so used to the false alarm that when the thief does come the barking of the watch dog is unheeded.

Caution.—The peculiar hoarse and husky bark which is one of the symptoms of rabies might be mistaken for the loss of voice caused by inflammation of the windpipe, if other and concomitant symptoms are not taken into consideration, and the consequences would be dangerous; but the two diseases are easily distinguished, and to that end I refer the reader to the article on RABIES.

In treating laryngitis the difficulty in swallowing occasioned by the inflammation renders the danger of choking great if it should be attempted to drench the dog, but I find the following electuary in this and all cases of sore throat very beneficial.

Electuary for Sore Throat.—Take of chlorate of potash finely powdered, 2dr.; powdered gum guaiacum, 1dr.; powdered gum acacia, 1dr.; oxymel of squills, 5dr.; and honey, 1oz. Mix and place a teaspoonful well back on the tongue three times a day.

The throat should be poulticed with large hot linseed meal poultices, often renewed, or else bathed with hot water, and afterwards well rubbed with this liniment: spirit of turpentine and spirit of hartshorn, each 1oz.; tincture of cantharides, $\frac{1}{2}$ oz.; rape oil, $1\frac{1}{2}$ oz.

Legs, Crooked.—There are some breeds, such as the Basset Hound, and the Dachshund, in which crooked legs are considered desirable and characteristic, but I think there can be no doubt that this now inherited peculiarity originated in rickets. In many of the straight legged breeds, however, we meet with crooked legged specimens, and the words of Tom Hood's sailor applies as strongly to dogs as men :—

“There's some is born with their straight legs by natur,
 And some is born with bow-legs from the fu'st—
 And some that should have growed a good deal straighter,
 But they was badly nu'ssed.”

Pups of such large, heavy breeds as mastiffs and St. Bernards are specially liable to go wrong in their legs, and the present craze for forcing young puppies, encouraged by the prizes offered at shows, is answerable for the ruin—in this respect—of many a promising dog. The subject will be found more fully treated under RICKETS.

Lice.—See PARASITES.

Lips, Warts on the.—These troublesome excrescences often appear on the lips of the dog, and when single are best removed by excision ; a pair of sharp scissors answers well enough, and the place should be cauterised, and I think the hot iron or actual cautery, although for the time being the most painful, is after all the best and safest. Neither potassæ fusæ, nitric acid, nor nitrate of silver can be safely used, because it is quite evident the dog's tongue would sweep the injured lip, with the consequence that the caustic would be transferred in part to the tongue spread with the saliva, and peel the skin off the tongue. If used, the jaws must be so tightly bound that the teeth are held together, so that the tongue cannot be protruded.

When the warts grow in clusters, as they often do, the difficulty of dealing with them is greatly increased. Blaine recommends that they should be sprinkled over with a mixture in equal parts of powdered sal ammoniac and powdered savin ; and Professor Hill says he has found oxide of mercury made into a paste with sulphuric acid more effectual than anything, but the latter is not a very safe thing in the hands of the amateur, and in using the former the mouth must be kept closed as described above. When they grow in clusters I should advise the owner to entrust their removal to a professional veterinarian.

Liver, Inflammation of.—See JAUNDICE.

Locked Jaw.—This is of very rare occurrence in the dog, all the more remarkable when we consider how liable he is to various spasmodic affections. I have never seen a case of it, but Blaine describes it, and it is a recognised canine disease. It is a form of tetanus, and under that head Professor J. Woodruff Hill describes the symptoms: “When the jaws only are affected, the head is poked out, the jaws are tightly closed, the angles of the mouth are drawn back, the mouth filled with frothy saliva, and the eyes fixed in an unnatural and often hideous position.”

The person who is so unfortunate as to have a dog seized with locked jaw should place the animal in a quiet place on a good bed, where the light is subdued and the dog will not be liable to be disturbed, and then consult the best veterinary surgeon within reach. Even with the most skilful treatment a cure is very doubtful, but as a matter of duty and humanity no quack should be permitted to experiment, or officious ignorance roughly handle the patient, for such would only cause the poor dog agony without the remotest hope of good results.

Looseness of the Bowels.—See DIARRHŒA and DYSENTERY.

Lumbago.—See RHEUMATISM.

Lungs, Inflammation of the Substance of the, or Pneumonia.
—Pleurisy or Inflammation of the Lining Membrane of the Lungs, &c.—These two diseases are sometimes co-existent, when it is known as pleuro-pneumonia. It would be too much to expect an amateur to distinguish between these, and as the causes and treatment are much the same, I shall continue to treat them as one disease. This disease is of very common occurrence in dogs, and in many cases proves fatal. When it exists as a complication of distemper it is known as “chest distemper,” and other of the respiratory organs may be involved.

The causes producing inflammation of the lungs are generally exposure to severe cold, throwing dogs into water, or causing them to swim during inclement weather, clipping dogs or otherwise removing greater part of their natural covering, or washing them and afterwards exposing them to excessive cold, especially if not thoroughly dried; in fact, any sudden transition from a high to a low temperature may produce it, especially in dogs of a delicate constitution and unused to rough it.

The symptoms are shivering, followed by partial sweating, observable inside the thighs, &c.; this is followed by quick and laboured breathing, the inspirations being full, the expirations short, and the breath hot. The dog sits on his haunches, and if obliged to move does so reluctantly, and soon resumes that position, with his head pushed forward and his tongue protruding. Cough is frequent and severe, often accompanied with slight discharge of mucus tinged with red. If not relieved, the dog rapidly gets worse, the breathing becoming more laboured and painful. As long as strength permits, the dog sits on his haunches with a dejected look, and when strength fails, lies on his breast with his head stretched out on his fore paws. Pleurisy or inflammation of the investing membrane of the lungs often exists independently, or as a complication of pneumonia. The difference between the two, and the means of distinguishing them, are too fine for the general reader; but as the treatment is, on the whole, alike, this is of comparatively little consequence.

To treat this disease with any chance of success, it is important that the dog should be kept where he can freely breathe fresh cool air; a hot stifling place is equally to be avoided with a damp or draughty one. Whilst cool fresh air is insured, the patient must at the same time be kept warm by clothing if necessary; it is also needful he should be as little disturbed as possible. The diet should be rather low at

first, but not too much so—broth, gruel, &c., are suitable under the circumstances.

In the way of medicines, it is necessary the bowels should be kept open by castor oil or the use of clysters; either the “fever mixture” (p. 14) or the “distemper mixture” (p. 42) should be resorted to at once, and diligently administered.

The prompt application of a blister often affords wonderful relief; indeed, if a blister does good at all its effect is immediate. There is, perhaps, no better or quicker blister for the dog than the strong liquid ammonia (not the ordinary spirit of hartshorn). It should be used by saturating some cotton wool or tow with it, and applying to the part for ten or twelve minutes, and as it is very volatile it should be covered by a thick-folded cloth held over it. Further experience leads me to prefer spirit of turpentine sprinkled on a flannel, wrung out with hot water, and this application followed by large hot linseed meal poultices frequently renewed.

Dogs recovering from this disease are always very weak, and require very great care to prevent a relapse, even when all danger appears to be gone. Only the most gentle exercise should be allowed at first, and fine weather selected for it. The dog will require nourishing diet, which should be plain, and consist for a time of broths, &c., a return to solid food being gradual. The dog will at this stage be greatly benefited by tonics, the most suitable being the “concentrated tonic mixture” (p. 20), or three or four grains of quinine twice a day in a little wine and water.

M.

Madness.—See RABIES.

Mange.—This is the most troublesome, and, in some forms, the most loathsome disease which we meet with in the dog—it occurs in many various forms, not always easy of distinction; for convenience I shall include some affections of the skin that are distinct from mange, though often confounded with it. I do so because the same general treatment will apply, and to avoid a multiplication of terms which only confuse the amateur. “Blotch” or “Surfeit” is distinct from true mange, as it is not contagious or infectious, and cannot be transmitted from one dog to another by simple contact, as true mange (which is due to the presence of a parasite), very readily is.

BLOTCH.—When dogs are affected with blotch, inflamed patches are observed on various parts of the body; these discharge thin mattery fluid, which forms a scab, matting the hair together, which in a few days falls off, leaving bare patches moist from the exuded fluid, and which cause

continual scratching and rubbing from the intolerable itchy sensations present. If the disease is neglected these scabs rapidly extend till the dog becomes almost bare of hair, and presents a loathsome and disgusting appearance; there is constant exudation of matter forming fresh scabs, the skin becomes thickened and wrinkled, the dog rubs or scratches himself till he bleeds, he gets no rest, his appetite fails, and he often sinks under the disease.

Blotch is a severe form of eczema, often aggravated by want of thorough cleanliness, the dirt mixing with the exuded watery matter, and causing increased irritation of the skin. Blotch is of most frequent occurrence and most severe in its attacks in overcrowded kennels, where the sanitary arrangements are bad, where injudicious or insufficient feeding prevails, and where proper cleanliness is not attended to; where dogs are allowed to sleep for weeks in dirty unchanged litter, the absence, not the presence, of such a disease as this would be matter for astonishment. A tendency to blotch is, however, believed to be inherited, and the pups of dogs suffering are liable to have it developed. Blotch is undoubtedly dependent on constitutional causes, and I have known bitches that were free from it at all other times suffer from it more or less at the period of heat.

Damp and cold kennels I have found fruitful of eczema, and, indeed, anything that interferes with the general health. Weakening the digestive organs appears to produce it, and so does gorging a dog, as is often done in forcing them into condition for show purposes.

Professor J. Woodroffe Hill, F.R.C.V.S., charges eczema against, "a too stimulating diet, an excessive supply of animal food, and a denial of necessary exercise," and in my own personal experience, together with lessons I have learned from the experience of many hundreds of dog owners, with whom I have been pretty closely connected in such matters for many years, strongly inclines me to Professor Hill's views. We all know that zoologically the dog belongs to the carnivora, but whatever he may have been originally, his close and constant alliance with man has modified him in many ways, and even his digestive organs have become assimilated to circumstances, and hence we must be largely guided by what our experience shows us suits the dog, and to do well in rearing, and keep our canine friends free from diseases, we must even study their individual peculiarities, and I might almost say eccentricities of gastronomic taste. Dog biscuits, of which there are so many nowadays, are a combination of animal and vegetable food, and are on the whole excellent, and I consider them the perfection of dog food used with common sense and the individual requirements of the dog. Now a little additional meat to what they contain, and now a reduction of it, by addition of boiled green vegetables, or meal as the case requires. Such feeding with sufficient exercise, a dry comfortable kennel and thorough cleanliness, is the surest prevention of eczema, blotch, and many still more serious evils.

The treatment of this form of skin disease will be somewhat dependent

on the state of the animal — if in good condition he should receive a brisk purgative, and the “compound podophyllin pills” (p. 42) will be found most suitable. It will be necessary to keep the bowels freely opened by these means during the existence of the disease. If the dog is much emaciated he must have milder doses of physic, and receive good nourishing diet in the form of broth, &c. As an outward application the following lotion will be found extremely useful in allaying the irritation and assisting in recovery :—

Lotion for Blotch.—Take carbolic acid and glycerine (British pharmacopœia), 1oz.; laudanum, 2oz.; water, 1½pts.; carbonate of potash, 2drs. It should be applied over the whole surface of the skin affected twice a day, and the dog be carefully washed every few days with soap and warm water, containing a teaspoonful of carbonate of soda to every quart of water, and afterwards very carefully dried; this will much facilitate a cure. Another useful formula is bivacic acid, 1oz.; laudanum, 1oz.; whale oil, 14oz.; but it is a dirty and disagreeable thing to use.

Of course the kennel must be examined, any defective sanitary arrangements altered, and thorough cleanliness insisted on. The dog’s bedding should be changed at least every other day, and the proper use of disinfectants in and about the kennel are of great use.

I have often found glycerine alone cure blotch when very freely rubbed into the skin twice a day, and nothing can be simpler, safer, or cleaner. All cases, however, will not yield to it, but many cases that the glycerine alone fails to cure will disappear after a few dressings of the same article, combined with two or three per cent. of pure carbolic acid—this may be used alone, or, where a large surface of skin is affected, diluted with an equal bulk of water. †

TRUE MANGE.—The very pronounced distinction between true mange and the modifications of eczema and other causes of irritation of the skin —excluding that caused by such visible parasites as lice and ticks—is that mange is caused by a parasite, although invisible to the naked eye, and that it is readily transferable by contact from one animal to another, whilst eczema, blotch, surfeit, or red mange is not; and although a whole kennel may be suffering at the same time from the latter complaint, it must be because all have been subjected to conditions of life occasioning derangement of the system, the disease remains individual, and is never transmitted.

Mange has been a recognised disease in our kennels for centuries. An old writer justly calls it “the capital enemy to the quiet and beauty of a brave spaniel; wherewith, poor creatures, they are often grievously troubled, and as often infect others,” so that if respectability goes by long and pure descent, the *sarcoptes* must rank very high in insect society, the most patient investigators of parasitic life having failed to discover that he has ever mixed his vital fluid with the puddle that stagnates in lower classes of animalculæ; yet our brave spaniels are still grievously troubled by him, and he creates a state of filth in the dog he inhabits, that the whilom pet caressed and fondled becomes a revolting nuisance. A

modern writer on canine pathology of no mean order, begins his dissertation on mange with these prefatory remarks, "The term mange is generally used by those people who dabble in canine matters, without the knowledge necessary to diagnose correctly, to denote any affection of the skin, which results in eruption, irritation, or the detachment of hair," and it is to a great extent true.

The two clearly defined kinds of parasitic mange are both due to species of acari—the sarcoptic and the follicular.

SARCOPTIC MANGE.—The insect producing this most nearly resembles the itch insect of man, and as it is propagated by eggs, and transmitted by contact, direct or indirect, there seems nothing impossible in the idea of stamping out this "chief enemy to the comfort of a brave spaniel," if only we could get every dog owner to be careful and clean—there is much virtue in an "if"—but at least we can learn from the facts known about the mange insect that we need not harbour it in our own kennels, and by stamping it out there, lessen it generally. Dirt unquestionably harbours and encourages mange, although it does not produce it; left undisturbed by cleansing processes, the vermin breed and multiply with great rapidity.

When the insect reaches the dog it burrows in the skin; the process, and also a poisonous fluid discharged by the creature, causes intolerable itching, and to relieve this the dog scratches, with the result that the skin is broken, small red points appear, and these become pustular and discharge a fluid which dries or crusts and forms a scab; the hair falls off; the multiplication of the original cause of the evil is rapid, and, left unchecked, the whole surface of the body soon becomes infested, and the poor dog is an object of pity, but also of loathing, and from want of rest and other causes sinks into a helpless condition. This state is often called virulent or scabby mange, and presents many of the characteristics of blotch. The skin becomes bare of hair in large irregular patches, which gradually extend, from the constant scratching of the dog, owing to the uneasiness caused by the acarus burrowing in the skin, and thereby setting up an intolerable itching. The skin is harsh, dry, and rough, and small pimples appear, from which oozes a purulent matter, forming scabs, which mat the hair together, and bring it off in patches as the dog rubs or scratches himself. The back, breast, and insides of the thighs are generally the first places attacked, and every crease and wrinkle in the skin becomes inflamed and moist with the irritating discharge. If the disease is left unchecked, it soon extends over the whole body, reducing the dog to a deplorable condition, disgusting to all who see him and intolerable to himself. These are severe and extreme cases, and in others a dry scurfy mange exists, marked by little red spots, and confined to the joints of the legs, over the eyes, the flaps of the ears, &c., and which may exist some time without other damage than causing the dog great uneasiness and injury to his appearance, by partially destroying the hair and robbing it of its natural glossy appearance.

The preventive measures are self evident. Do not permit your dog to

associate with mangy curs, or even mangy champions, for such are not unknown at shows. A dog cannot contract mange except by being in contact with an infected dog, or where he has been and left acari behind him. Railway companies should be compelled by law to cleanse and disinfect their dog boxes after every occupant. Make periodic and very careful examination of your dogs, and insist on thorough cleanliness in the kennel.

The first thing to be done with a mangy dog is to wash him. Let him have a good sousing and scrubbing with soft soap, Hudson's Extract of Soap, and water, "hottish rather, but not so boiling as to turn him red"; dry well with a soft cloth, which must immediately be boiled, and then dress him with one or other of the innumerable preparations which their vendors declare were never known to fail, or use one of the following remedies, which you can make or get your chemist to prepare for you. Whatever you use, see that it is applied thoroughly; see that it reaches the skin where the insects are, and is not merely left on the hair.

Ointment for Mange.—Green iodide of mercury ointment, made with one drachm of the iodide to seven drachms of lard, is perhaps the nearest approach to a specific for mange that has yet been discovered.

It should be used daily, well rubbing it into the parts affected, and any superfluous ointment adhering to the hair should be wiped off, for although a little of it taken by a dog would merely act as an alterative, a large quantity would be poisonous. It is a good plan in severe cases, when the disease extends over much surface, to attack it piece by piece, applying the ointment oftener. Another very old and very effective remedy for mange, itch, and other parasitic diseases of the skin, is the

Lime and Sulphur Lotion.—Take flowers of sulphur, 2lb.; unslaked lime, 1lb.; water, 2 gallons. Slake the lime in the water, stir in the sulphur, adding water gradually until it is of a creamy consistence, then add the remainder of the two gallons, and boil down to one gallon; let it stand till cold, pour off the clear liquid, and make the quantity to five quarts with cold water.

In using, all the affected parts should be freely wetted with it. It is generally necessary in mange to give internal medicines, and in chronic cases "Fowler's Solution of Arsenic" is often of great benefit. The dose is from two to eight drops given twice a day in food. In giving arsenic the symptoms produced should be carefully watched, and if the appetite fails and there is a redness of the eyes, it should be stopped for a few days or a week, after which give it in rather smaller doses, and persevere with it. Chronic cases of mange often take a month or two to cure. Spratts make a mange lotion somewhat similar to the above, but containing, I believe, other parasiticides, and I have found it convenient and very effective.

The use of purgatives in mange must be regulated by the condition of the dog; a gentle aperient is never amiss, and when the dog is of a gross habit, a strong purge twice a week will do good. The diet is very important, and should consist of a good proportion of boiled vegetables,

restricting the use of flesh meat, except in so far as may be necessary to keep up the dog's strength.

Sulphur is given as an internal remedy for mange, but whether it is really effective is a disputed point. Those who wish to try it should give one or two teaspoonfuls of the flowers daily in the food. The practice of placing a piece of roll sulphur in the water given the dog to drink is quite useless. Whatever external application may be used for mange, the dog, or at least the affected parts, should first be well cleansed with soap and water, with the addition of a little of the carbonates of soda or potash, the animal to be well dried after washing. The litter should also be frequently changed, and the walls of the kennel, and all posts and other places where the dog has rubbed, should be washed with lime wash, containing a little carbolic acid, and the floors should be swilled with a weak solution of the acid or some other disinfectant.

When a disease, as mange does, depends on the presence of a parasite, it appears evident that our first object should be to destroy the parasite, and so remove the cause, and this, to the uninitiated, may appear an easy and a simple thing; but, as a matter of fact and practice, it is often one of very considerable difficulty, and many of the processes of cure adopted with a view to the destruction of the animalcules end in the death of the animal. This is not only so in treating mange in dogs, but in the analogous diseases in other animals, and not only are hundreds of heads of valuable stock annually sacrificed to the dangerous use of powerful poisons in the treatment of these diseases, but man also often falls a victim. This is altogether unnecessary, as the best authorities agree that arsenic, corrosive sublimate, and other powerful poisons so generally relied on, are much less effective than non-poisonous agents. I do not say that mange has never been cured by any of the numerous time-honoured, unscientific compounds, held in such high esteem by hundreds of dog men and others, but I think when simpler and safer remedies are known, the more complicated and dangerous ones should be discarded.

Various forms of sulphur ointment are in vogue as cures for mange, some of them combining with the flowers of sulphur powdered hellebore (a strong poison) made up with soft soap, whale or seal oils, turpentine, &c., forming a compound as disgusting to sight and smell as the worst cases of mange, and I have not found them one bit more effective than a simple ointment of flower of sulphur and lard, made with one part of the former to four of the latter.

FOLLICULAR MANGE is due to another insect, the *Demodex folliculorum*, very different in appearance from the *sarcoptic*, which is short and thick, whereas the *demodex* is elongated, and with a long obtuse tail. These parasites differ in their habits, the *demodex* living in the hair tubes or follicles, and burrowing deep under the skin in the sebaceous glands that supply the unctuous matter which protects the skin and keeps it soft.

The depth to which the *demodex* burrows has two results: it renders follicular mange much less easy of transmission between dogs, but it also makes a cure much more difficult, as the parasites are hard to reach.

This insect is identical with a parasite found in the human skin, causing some disfiguration of the face, but further than that it does no harm until transferred to the dog, when it causes a most repulsive disease, and one very difficult to eradicate.

Mr. Wm. Hunting, F.R.C.V.S., veterinary surgeon to the Kennel Club, already quoted, in conjunction with Professor Duguid, of the Brown Institute, made a series of investigations and experiments in elucidation of this disease some few years ago, and the following description of symptoms and the diagnosis are from an article by the former gentleman, which appeared in the *Veterinary Journal*, and afterwards in pamphlet form :—

“The symptoms of the disease are seldom seen in the first stages; they consist merely of circumscribed spots from which the hair falls, and upon which are noticeable a few small pimples. These patches extend rapidly, and fresh ones appear on other parts. Any portion of the skin may be affected, but the head, legs, belly, and sides are usually the seat of the disease. The affected places are almost hairless, and what hair remains is easily pulled out; small pimples and pustules stud the surface, the latter varying in size from a pin's head to that of a pea. The confluence of the pustules, and the discharge of their contents, give rise to scabs; these crack and bleed, and so produce a most repulsive appearance. In white-haired dogs the skin is red; in all it is extremely hot, and emits an unpleasant odour. The irritation does not excite much scratching, but the dog frequently shakes himself. More pain than itching seems to accompany the disease. In cases where the whole body is affected, loss of condition is most marked; and in cold weather the almost total loss of hair may cause death, if the animal be not kept in a warm place. This stage, too, is always accompanied by ravenous appetite, due, probably, to the rapid loss of animal heat.

“Diagnosis.—In white dogs the colour of the skin may cause the disease to be mistaken for ‘Red Mange,’ or ‘Eczema.’ The circumscribed spots in the first stages may be confounded with some forms of Tinea; and the loss of hair and presence of scabs seen in the fully developed disease may easily be mistaken for ordinary Scabies. The pustules, the heat of the skin, and the comparatively slight itchiness shown, are, however, nearly diagnostic. Positive diagnosis can only be made by the aid of the microscope and the detection of the parasite. If we puncture one of the pustules, and mix its contents on a slide with a little water, the acari are easily discovered. I have found as many as thirty in one pustule. Sometimes we may detect them on the root of a hair removed from an affected spot. With a low power, the parasites somewhat resemble sprats or minnows, but a higher power shows them to consist of a head and body, which latter terminates in a long and obtusely pointed tail. They are furnished with six or eight legs situated on the anterior part of the body, three or four on each side. The head consists of two antennæ and a median proboscis, all of which are capable of being moved forwards and

backwards. The legs consist of three segments. The movements of the creatures are not often seen, and are very slow. The parasite measures about one-hundredth of an inch in length by one five-hundredth in breadth."

In regard to treatment, Fleming, in "Veterinary Sanitary Science," says: "With regard to the treatment of Follicular Scabies, the situation of the *Demodex* renders it almost inaccessible to parasiticidal remedies; the disease it engenders is therefore looked upon as extremely troublesome, and, in the majority of cases, almost beyond a cure. Often, when it is believed to be extinguished, it reappears in all its virulency in one or two months. Nevertheless, Zürn asserts that he has frequently succeeded with an ointment composed of one part of benzine to four of lard. Weiss recommends the inunction of essence of juniper. Zundel states that the balsam of Peru has often yielded good results when the malady has not been of too long duration; he has employed it dissolved in alcohol (one to thirty); he has likewise used the green ointment of mercury with success, as well as the nitrate of silver ointment. Hofer speaks highly of an ointment composed of carbolic acid, and Vogel prescribes a solution of caustic potash."

Messrs. Hunting and Duguid, after many unsuccessful experiments, adopted the plan of softening the skin and breaking up the cuticular covering by the application of oil and caustic potash. The following is Mr. Hunting's formula: "Creosote, $\frac{1}{2}$ oz.; olive oil, 7oz.; liquor of potash, $\frac{1}{2}$ oz.; first mix the creosote and oil, and then add the potash, mixing them by agitation." With this the affected spots are to be dressed twice a week, allowing longer intervals when the skin becomes soft and tender. Mr. Hunting says a cure requires from three to eight months, and a longer time allowed for the growth of the hair.

I have had some experience of follicular mange, and principally with pugs. In one case I had two sent to me in a very bad state, and both eventually became entirely denuded of hair. The treatment I adopted was washing—I might say soaking—the dogs in a strong lather of soft soap, hot water, and pearlash, carefully drying; and one, the youngest, I painted over with a solution of iodide of potassium, one ounce in a pint of water, and, after allowing it to dry, applied very freely Spratts Mange Lotion. To the other, after drying, I applied the lotion without the solution of iodide of potassium, and this process I repeated every other day. The dogs were in my possession about ten weeks, by which time they were perfectly free from disease, and the re-growth of hair had made considerable progress. Of internal medicines the dogs had very little, some podophyllin pills when I first began treatment, after which, I regulated the bowels as required by diet, increasing or decreasing the quantity of fresh vegetables, and giving boiled liver, when there was a tendency to costiveness; but no alteratives such as arsenic.

I did not find that the one treated with iodide of potassium made more rapid recovery than the other, and in instances where I have had to prescribe since, I have found similar treatment equally effective,

notably in one case, when over twenty dogs were suffering from this form of mange.

Maw Worms.—See WORMS.

Milk Fever.—Milk fever, or parturient apoplexy, is uncommon in the bitch, but there is always a risk of causing it by robbing the mother of the whole of her puppies, especially if she is full of milk ; therefore that course should never be adopted.

The symptoms are apparent weakness, staggering, quick, hard breathing, hot dry nose and tongue, the latter thickly furred ; the milk is suppressed, and the bitch shows extreme thirst.

If possible, apply ice to the head, and if that is not obtainable, cold spring water, often changed, and relieve the bowels by clysters. She should be kept perfectly quiet, and as little disturbed as possible, a soft bed provided, and if on an inclined plane, so that the head may be somewhat elevated, it will be an advantage.

Mouth, Canker of the.—This disease is generally the result of too dainty feeding, combined with want of exercise, although it may arise in old dogs from falling teeth, and consequent want of masticating power. Both these causes lead to disordered stomach and foul breath ; a deposit of tartar takes place, the gums and lips become red, inflamed, and spongy, and there is after a time more or less of fœtid discharge from the mouth, frequently accompanied with bleeding. Old animals are the most subject to canker of the mouth, and, on examination, most probably some of the teeth will be found decayed, and the gums so tender that, in attempting to eat, the dog suffers great pain, and may be observed to chew a morsel for a few minutes, rolling it about in his mouth, and eventually dropping it. To cure the disease, remove the cause ; return from a pampering system of cramming the dog with delicacies to a more rational way of feeding, and give proper exercise. It will be necessary to examine the mouth carefully, and if the exciting cause be decayed teeth, with a pair of suitable forceps remove all loose, rotten stumps. This will be done more readily than may be supposed, and a very little practice will make anyone efficient. Whilst extracting the teeth, the dog's head must be held firmly by an assistant. It will be evident that whilst the dog's mouth is in such a tender state he must be supplied with food that requires no chewing. This will be necessary for other reasons also. The disordered stomach must be corrected, and a diet, principally vegetable, will assist in doing so. In the way of medicine the dog should have a brisk dose of "podophyllin pills" (p. 42), and afterwards one or two, according to the size of the animal, of the following should be given twice a day till all untoward symptoms have disappeared :

Stomachic Bolus.—Take extract of gentian, 1dr. ; powdered rhubarb, 36gr. ; carbonate of soda, 12gr. ; gum acacia, sufficient to make into twelve 10gr. pills ; or, if considered preferable, the ingredients may be rubbed down with water and given in the form of a drench in proportionate doses, but in the liquid form the medicine must be freshly made, whilst the pills will keep good any reasonable length of time.

As a wash for the mouth, and to remove the unpleasant smell from the foulness of the breath, teeth, &c., Condy's fluid should be used, properly diluted, and the following will harden the gums and assist in bringing them to a healthy state :

Mouth Wash.—Take powdered alum, loz. ; simple tincture of myrrh, loz. ; dissolve the alum in a pint of water, and add the tincture of myrrh. This should be applied to the gums pretty frequently and freely, by means of a piece of sponge or rag tied on the end of a stick, or with a soft tooth brush.

Another excellent wash for the mouth in such cases is solution of chlorinated soda, diluted with twenty-four to thirty times its volume of water. The mouth should be freely washed with this several times a day.

N.

Navel Hernia.—An enlargement of the navel, sometimes called a wind navel, is often met with in puppies, and may be simply an expansion of the same, or cicatrice. Navel hernia, or umbilical hernia, is the protrusion of a portion of the intestine or the omentum—the membranous covering of the bowels. It is frequently congenital, and may be caused by extra strain at birth on the umbilical cord ; or the tongue of the mother may extend the wound. It is a soft movable tumour over the navel, varying in size, and most prominent when the stomach and bowels are full.

In treating, fast the pup, and place over the enlargement a pad of vulcanised indiarubber or cork, tapered, the smaller end being applied on the tumour after it has been pressed in, which should be done when the bowels are nearly empty, and the pad secured by strips of white leather smeared with warm pitch plaster. This should be done after the pup has been weaned and separated from its mother, or she will with her tongue remove or displace the application.

Nephritis, or Inflammation of the Kidneys.—This is, fortunately, an uncommon disease in the dog, as it is a painful and dangerous one.

Giving turpentine as a remedy for worms, administering cantharides, which is sometimes done to bring on oestrum (although the practice is as useless as it is dangerous), long exposure to wet and cold, or blows, are some among the many causes which will bring on nephritis.

The symptoms are evident pain about the loins and flank and considerable feverishness, the urine being passed in small quantities, and highly coloured.

The active treatment should be left to the veterinary surgeon, but the owner should see the dog is kept quiet and undisturbed, with a constant supply of fresh barley water to drink, and kept on a plain diet of porridge, bread and milk, or broth and biscuit, &c.

O.

Obesity.—See FATNESS.

Ophthalmia.—What is called the conjunctiva is the mucous membrane that lines the inner surface of the eyelids, and, as its name imports, joins these with the eyeball, and ophthalmia is an inflammation of this mucous membrane. This is a disease unfortunately very common in dogs; it varies greatly in severity, and in some cases, when arising from constitutional causes, becomes chronic. Sporting dogs have been said to be more liable to it than other breeds, but I do not think so, and I believe the idea originated from the fact that these have generally been more exposed to circumstances exciting it than other breeds. From my own experience, I am inclined to think it is most prevalent in pugs and other pets overfed, and consequently liable to frequent derangement of the digestive organs.

Anything that will set up local irritation, as the intrusion of dust, flies, &c., or the scratch of a cat, or a blow, exposure to sudden and extreme changes of temperature—as plunging into or being thrown into cold water when heated—and excessive exertion is occasionally a cause, but the most common sources are the vapours of foul kennels or hot stables, and derangement of the digestive organs; an inverted eyelash may occasion it, and Blaine offers a rather singular opinion, namely, that setters, pointers, and spaniels are often suddenly seized with it from the effect of some poisonous herb after they have been hunting in cover. If that is a cause, I cannot think what the poisonous herb can be, but should think it not unlikely that the stinging of the common nettle might produce it. Ophthalmia is very often an accompaniment of distemper.

The symptoms are an intolerance of light and a watery discharge, and on the eyelids being opened and examined there is seen to be congestion of the lining membrane, and across the cornea, or front clear portion of the eye, there are red streaks, and ulceration soon follows, and a white film obscures the eye and interferes with the sight.

When treating, the cause should be first sought for, and if it is some foreign irritating body, or an eyelash growing in a wrong direction, these should be removed. A mild dose of cooling aperient medicine should be given, and the eye should be well and frequently bathed with a decoction of poppy heads; and afterwards, if the inflammation is considerable, one of the following lotions may be used several times a day with advantage:

Eye Lotions.—(1) Extract of belladonna, half a drachm; rose water, four ounces; wine of opium, two drachms—mixed. When ulceration has taken place, or is going on, use this lotion:—(2) Sulphate of zinc, twelve grains; tincture of belladonna, one drachm; wine of opium, two drachms; rose water, four ounces—mixed. If the disease is thought to be sympathetic with derangement of the digestive organs, attend to the food by changing the diet, and in any case give light and nutritious food. When the eye is very sensitive to light, the dog should be kept in a shaded kennel and

not exercised in the glare of the sun ; but, especially in weakly dogs, exercise is absolutely necessary to the general health, and so is light, so that the place where the patient is kept, whilst shaded, must not be absolutely dark. The kennel must be perfectly clean, and if disinfectants are needed, avoid chloride of lime or carbolic acid, as they might increase the inflammation. Condy's Fluid would be the most suitable disinfectant under the circumstances.

P.

Paralysis.—Most people are familiar with the appearance of paralysis, the loss of muscular power in the part affected, and the consequent wasting away of the muscles. It is generally confined to one set of muscles, but may be general, and it varies in degree from producing a slight tottering gait to complete loss of power and inability to walk. It arises from pressure or injury to the brain or to the spinal cord. If one side of the brain is affected, the opposite side of the body will be paralysed; if the whole of the brain is implicated, the paralysis will be general, and where it arises from injury to the spine it is the parts behind the injury that power is lost over. This affection very often follows distemper, and the hind quarters generally suffer, the dog, in severe cases, losing the power of using his hind legs in walking, and drags them behind him. In such instances the muscles of the thigh soon shrivel, and cure is very rare indeed. Long standing constipation will induce paralysis, and it is not infrequently the result of debility and old age. Paralysis of the lower jaw is a distinctive symptom of dumb madness, and renders the subject of it incapable of biting.

In treating, so long as the dog can use his limbs he should be given regular gentle exercise; the food should be nourishing, and rather laxative. Oatmeal porridge, mixed with strong broth, every other day, will generally act gently on the bowels, and a meal of boiled bullock's liver once or twice a week has also a laxative effect; and where the disease is connected with debility it is very necessary to get the strength up by extra food; give, therefore, more than usual of cooked meat, and in small quantities, at frequent intervals. The medicines relied on in these instances are tonics in general, and strychnine—the active principle of *nux vomica*—which has a special power over the muscles and nerves. One to three grains of powdered *nux vomica*, according to the size and age of the dog, or from one-twentieth to one-sixtieth of a grain of strychnine, combined with two to six grains of extract of gentian, and one to two grains of quinine, made into a pill. It is almost needless to observe that very great care must be used in compounding pills containing a minute quantity of such a powerful drug as strychnine. A dose should be given twice a day. Syrup of the phosphates with strychnia, called Easten's Syrup, is often of great service

in relieving mild cases of paralysis; and galvanism is sometimes beneficially effective. Moore recommends the wearing of a Pulvermacher's chain.

Parasites living on the Skin.—The number and variety of parasites that make one part or another of the dog their habitat is very great. These are divided into external and internal, in the former two distinct insects, producing two very distinct forms of mange, have already been referred to, and the internal parasites will be treated upon in the chapter on worms.

The use and value of parasites in the economy of nature remains yet to be discovered, and notwithstanding the patient, minute, and painstaking investigations of naturalists, which have given us much curious information regarding their structure, habits, and peculiarities—I would say their “whims and oddities,” but that it might look like a parody of terms applied to our friend the dog in a recent publication—nothing can reconcile us to these abominations, bred from idleness and dirt, and we continue to treat them as unmitigated nuisances and pests. I do not in this chapter include either internal parasites, as the various kinds of worms which infest the dog, or the mange insect, which burrows and lives in the structure of the skin, but the more palpable vermin that exist on the skin and its covering, and by their mischievous action find poor Carlo such unwearied exercise for teeth and claws, and cause him to assume those extraordinary contortions of body so artistically represented on some of the flea-killing dog soaps of the day.

There is no dog owner of much experience who is not aware that great care and cleanliness are needed to prevent the introduction of these unwelcome visitors, or who has not had to pay smartly for their extermination, if his kennels have been neglected.

The parasites of the kind I am now writing of which infest the dog, are three in number—the louse, the flea, and the tick.

THE LOUSE resembles in appearance that of man, but is larger in size, and cannot live on the skin of the human subject. It excites great irritation, causing the dog to scratch and worry himself continually. They live on all parts of the body, but are generally most abundant about the head and face, round the eyes, roots of ears, and along the top of the back. If the dog's skin is closely examined red streaks and dots of blood will be observed where the enemy has been feeding, but the actual presence of the foe, which will be seen creeping about, will be a sufficient incentive to his destruction, without witnessing the havoc he has made. There are numberless nostrums made and advertised for the destruction of these vermin, some of which are quite as likely to kill the dog as the parasite. White precipitate in dry powder well rubbed into the coat and skin, and left there for four or five hours, and then thoroughly brushed out, is a certain cure; but it has the disadvantage of being a mercurial poison, and when it is used it becomes necessary that the dog should be muzzled during the whole time the powder is on him to prevent him licking it. For this purpose the automatic wire muzzle, which allows the dog full play with his tongue, and even to lap water, is the safest and best. It is also necessary care should be taken

that the dog be not exposed to wet while the precipitate is on him, as not only would it be difficult to remove it from the coat after wetting, but there is the danger of its producing salivation by absorption. It is also advisable that the person brushing the precipitate out of the coat should wear a light covering over mouth and nose during the operation. A much safer and equally effective remedy, in my opinion, is the sulphuret of calcium (lime and sulphur lotion) (p. 69) prescribed for mange. If the coat and skin be thoroughly saturated with it, and left so for ten minutes or a quarter of an hour, all that will be left of the vermin will be shrivelled carcasses; the dog should then be well washed with hard or soft soap and warm water, and thoroughly combed and brushed till he is perfectly dry; for delicate dogs, and those with tender skins, the lotion should be reduced in strength, by adding equal, or even two parts of water to one of lotion, and if any doubt exists in the operator's mind as to the course to take, let him try the weaker solution first, and watch its effects, when he can make it stronger as required.

Another method of exterminating lice I have found effectual is a mixture of equal parts of petroline and olive oil. In applying it the hair should be parted, and the skin saturated with it, and in an hour or so the dog should be washed. It does not injure the coat, but rather improves it.

The destruction of the dog louse is of vast importance, not only because of the discomfort it causes the dog, and the disgust it produces in ourselves, but for a far weightier reason, in the very curious fact that the louse is made the medium of hatching the eggs, and developing the cucurine tape worm, a variety of that internal parasite from ten to twenty inches long, and very common in English dogs.

Dr. Spencer Cobbold says of it:—"The joints of the worm having escaped per anum, readily crawl as semi-independent creatures on the coat of the dog, chiefly on the back and sides. The eggs thus distributed are readily swallowed by the louse of the dog (*Trichodectus latus*).

"In the body of the louse, the six-hooked embryo, hitherto contained in the egg of the tape worm, escapes the shell, and becomes transformed into a minute cysticercus, or louse-measle. When the dog is irritated by the lice, it attacks, bites, and frequently swallows the offending external parasite. In this way the louse-measle is transferred to the dog's intestinal canal, where, in course of time, it develops into the sexually mature cucurine tape worm."

The above very curious and important bit of history of the tapeworm and the dog louse should teach the practical lesson of thorough and constant cleanliness in the kennel.

THE FLEA (*Pulex canis*) is an object familiar to most, and with his very lively propensities is more mischievous and annoying, if less disgusting, than his two allies who, with him, make war on and torment the dog.

Numerous are the means suggested for the destruction of fleas, and scores of drugs, simple and compound, are in vogue for this purpose. For pet dogs I do not think there is anything at once so innocent, so clean, and so effective, as the Persian Insect Powder, sold by Messrs. Keating, chemists,

St. Paul's Churchyard; the price alone is against it, that being unnecessarily high. It consists, I believe, of the powdered flowers of *Pyrethrum roseum*, and is used in a dry state by simply rubbing it into the roots of the hair or blowing it in with suitable miniature bellows, which are sold for that purpose by most chemists. The best article of the kind I have seen, is one of French manufacture, worked by a small piston acting on a spring of spiral wire covered with a piece of glazed calico, the whole neatly incased in tin, with an aperture at the bottom for filling with powder; the powder is blown out of a long spout with such force as to spread it among the roots of the hair. The whole apparatus, when filled, costs only 1s. The insect-destroying powder can also be purchased from the herbalists, Messrs. Butler and M'Culloch, Covent Garden, and from most retail chemists; but the powder from the flowers must be had, as cheaper articles are sold which cannot be relied on.

Within the last few years a large trade has sprung up in "dog soaps," most of them depending on carbolic acid for their flea-destroying properties, and all of them claiming special virtues in improving the dog's coat, curing mange, getting him in condition, and all the rest of it. I have only used two of these articles on dogs for the destruction of fleas, Naldire's and Cathery's. Naldire's I have used with variable results, and I consider it uncertain. Cathery's Dog Soap I have frequently used. It is a carbolic acid soap with the smell well covered, and I have found it very effective if a good lather be made with it and rubbed well into skin and hair, and allowed to remain a minute or so before washing it off. I have never observed any ill effects from the use of this carbolic acid soap, although Professor Williams, of Edinburgh, strongly condemns the use of it on the dog.

Since I penned the above lines, ten years ago, I have had convincing proofs of the ill effects of carbolic acid and carbolic acid soaps on dogs, and have seen that the acid, even in the mild form of soap, will poison by absorption through the skin, and that when there is no abrasion. I have had numbers of instances of it brought under my notice, and two very well marked cases I personally treated. In one case, a toy terrier, great depression and trembling was followed by profuse bleeding of the nose, and the dog died, despite all that could be done. In another case, a strong fox terrier, his mistress was herself washing him with a carbolic acid soap when she was called away to see a visitor, and for some short time the dog was left with the lather from the soap upon him; the result was very great depression and weakness, with constant trembling and loss of appetite. I gave the dog stimulants and tonics, brandy, quinine, and iron, cold douches followed immediately with brisk and continued rubbing, and he recovered, but it was several weeks before he regained his usual health.

A few years ago Spratts Patent brought out a dog soap at my suggestion, and I have found it in practice so thoroughly suited to its purpose that I believe it will supersede all others. The advantages it possesses are that it contains nothing poisonous to man or dog, but a vegetable insecticide

that proves certain death to fleas. I have frequently seen, after washing with carbolic acid and other dog soaps, the fleas apparently dead, but, on being put under a glass in the sun, their very lively actions have soon proved they were not dead, but had only for the time been stupified; but the Spratts soap kills them outright, and, among its minor advantages, it is colourless, and improves the coat and skin. Field's Medicated Dog Soap is also a good insecticide, and, I understand, is also free from poison, but it has the slight disadvantage of being dark in colour.

A strong infusion of quassia, made by suspending a couple of ounces of quassia wood chips, tied in a piece of muslin, in a bucket of water, for two or three hours, occasionally stirring it, is useful in killing fleas; it is free from danger, and being almost colourless, is an advantage in washing white dogs. The infusion must be used instead of plain water with either soft soap or curd soap, a good lather being made to penetrate the dog's coat to the skin. Some plain water should be poured over the dog to finish the washing and remove the quassia from the coat. A decoction of stavesacre seeds used as a wash, or a powder of the seeds dusted into the dog's coat has been recommended, but, as I have not tried it, I cannot say whether it answers the purpose. An occasional energetic rubbing with dry flowers of sulphur will keep the dogs free from vermin, and improve the appearance of the coat. If done on a clean floor, or, in the case of a little dog, on a large sheet of paper, the sulphur can be swept together and used again and again. Whatever article is used, its application should be repeated several times, to ensure perfect eradication of the pests, for the flea undergoes a complete metamorphosis. The larva is a footless grub, and after about twelve days it arrives at the pupa state, enclosing itself in a silken covering, and in a few days more assumes its mature condition.

THE TICK (*Ixodes sicinus*) is less frequent and less known than either the flea or louse. In appearance they bear some resemblance to a spider; they vary in size considerably, from a pin's head to a small pea; the colour of the smaller ones is a light grey, but they vary in colour, becoming dark when filled with blood. The tick fastens in the skin by means of its legs, and holds on with such tenacity as frequently to part in two in the attempt made to remove it. The cure for ticks most to be relied on is either the white precipitate powder (p. 77) or the sulphuret of lime (p. 69), used as already directed.

The principal producing cause of these troublesome and most disagreeable vermin is neglect of proper cleanliness, leaving the dog ungroomed or without opportunity to clean himself, leaving the litter or bedding unchanged, and generally want of attention to proper sanitary measures. House pets that are regularly well brushed and kept clean will never be troubled, even with fleas, unless they get them by contact with other dogs, when a diligent use of the remedies suggested will soon remove them. If a kennel be infested with vermin, the whole litter and bedding should be changed, and all the posts, floors, benches, walls, &c., thoroughly scoured with soft soap and hot water, and afterwards brushed over with a weak solution of carbolic acid.

THE HARVEST BUG (*Leptus autumnalis*). In the "Veterinary Journal," May, 1878, Mr. George Fleming, the eminent veterinarian and author of standard works on animal diseases, described the case of his own dog (a fine-skinned black and tan toy terrier), being attacked by the harvest bug.

This most annoying pest must be well known to many readers, although it appears to be peculiar to certain localities, and some people enjoy a happy immunity from its attacks. The case of Mr. Fleming's dog was the first, and, as far as I know, remains the only one on record of these bugs taking up their residence in the skin of the dog. They burrow into it, discharge an acrid fluid, which causes intolerable itching, and produce roughness of the skin and a slight eruption.

Only fine-skinned dogs, with little or no hair, are likely to be the subject of the attention of this parasite, and it exists in activity in the autumn only, in ripe corn, stubbles, dry grass, &c. The treatment for mange would destroy it and relieve the sufferer.

Parturition.—The period of gestation in the dog is sixty-three days, and in a majority of cases the bitch pups on the sixty-third day, although that may occur a day or two earlier or later. It is important to keep a register so that preparation may be made for the event; a quiet retired place should be selected, with plenty of room for her, and so easily accessible that assistance may be readily given if required.

A bed of fresh soft hay is suitable, and, especially in cold weather, this should be on a boarded floor, for whatever is put down for a bed she will scrape a nest in it to the solid ground, and if that is damp soil, or cold flags, or bricks, the pups would get chilled.

The symptoms of approaching parturition are: Considerable enlargement of the mammæ and of the external organs of generation, with more or less discharge of glairy matter, and frequent urination; the bitch becomes restless and moves about from place to place in search of a locality to her mind, wherein to make her nest.

The very best advice I can give to the breeder is, do not interfere; the few cases where it will be absolutely necessary to do so will only add force to the wisdom of the rule. Next, even when help is called for, do not interfere too soon, and, if manual assistance has to be given, avoid unnecessary force. When labour is protracted the liquid extract of rye, given with a little brandy and water, will generally greatly assist the bitch in the delivery of her pups. The cases of greatest danger are where a bitch has been allowed to stray during œstrum and mated herself with a dog of much larger size than herself; and very finely bred and highly pampered bitches often suffer greatly, and die in the act of giving birth. In healthy parturition even, considerable time is often occupied, the rest between being of great service in supporting her against the prostration consequent on the event. The bitch should not be interfered with in these intervals, and it is foolish to try to force food upon her.

In all cases where difficulty from wrong presentation or the disproportioned size of the pups occur, both from motives of prudence and humanity the veterinary surgeon should be consulted, for his obstetric

knowledge, and skill in manipulation will save much unnecessary suffering, and probably the lives of mother and pups.

Penis, Discharge from.—Some dogs suffer from an inflammation and excited state of the organs of generation, with frequent partial erections, accompanied with discharge of a thick yellowish matter, very loathsome, especially in a house and companion dog.

In treating, bathe the parts very frequently with cold water. Give a strong dose of ordinary black draught, and the following medicine:

Mixture for Discharging Penis.—Bi-carbonate of soda and bi-carbonate of potash, of each 2dr.; tincture of henbane, 3dr.; Mindererus' spirit, 1½oz.; and water to make 6oz. Dose for a 40lb. or 50lb. dog, a table-spoonful four or five times a day.

Give the dog barley water to drink, and but little meat. Porridge, milk, and broth, with green vegetables, will be most suitable.

Piles.—This disease occurs most frequently in house dogs and those too closely confined to the kennel. It depends on an enlarged condition of the hæmorrhoidal veins at the lower part of the rectum. The parts present an enlarged, swollen and tender appearance, giving pain when touched, or when the dog draws himself along the ground. Piles are known as internal or external, according as they exist within or without the sphincter muscle, that is, the muscle that contracts the orifice of the anus. The natural condition of the parts being small, firm, and contracted, the existence of this disease is readily ascertained. The principal causes producing piles are the injudicious use of purgative medicines, over-feeding with stimulating food, and want of sufficient and healthful exercise, producing diseases of the liver, constipation of the bowels, with consequent straining, and undue distension of the parts in the act of fecation.

Condiments and spices should never be given to dogs, and are a source of much mischief when given, notwithstanding the recommendations of the makers and the testimonials in favour of their use. A dog suffering from piles should be fed on a laxative diet; little or no flesh meat should be given, but a portion of boiled liver (which has a laxative tendency) may be allowed with broth, well-boiled oatmeal, and green vegetables.

As a mild aperient medicine a little milk of sulphur may be advantageously given in milk or with the food. Dose, a heaped-up teaspoonful for a 20lb. or 25lb. dog.

One of the two following ointments should be applied twice a day, smearing the parts well with them:—

Ointment for Piles.—Mild mercurial ointment seven parts, finely powdered camphor one part, well mixed; or the compound gall ointment of the pharmacopœia.

In some cases of piles a tumour forms near the orifice of the rectum; it is at first red, becomes purple, and finally discharges a thick fœtid matter mixed with blood. It forms a ragged sore, difficult to heal from the movements of the dog in the natural act, and from his dragging himself along the ground. Similar treatment should be pursued as for piles, using the ointment and washing with the following alternately:

Wash for Tumour.—Goulard's water, $\frac{1}{2}$ pint; laudanum, $\frac{1}{2}$ oz.; tincture of arnica, $\frac{1}{4}$ oz.

Pleurisy.—See LUNGS, INFLAMMATION OF.

Pneumonia.—See LUNGS, INFLAMMATION OF.

Polypus.—This is a tumour growing on some mucous membrane, as the nose, anus, or, more commonly, the vaginal passage. It is attached by a stalk or pedicle, varying in length and thickness; and the tumour, which is smooth, red, and in shape like a pear, varies in size; when small it is concealed from view, but protrudes as it increases in growth. It discharges a mucous matter, sometimes slightly tinged with blood, and generally offensive in smell.

The treatment is simple, and consists in the removal of the polypus, by tying a strong silk thread or piece of fine silver wire round the neck. This must be tightened daily for a few days, till the neck is cut through and the tumour drops off. The parts should then be bathed freely for a few days with Goulard water. Internal medicines are not required unless feverishness exists, when a dose of cooling medicine will be sufficient.

Pot-belly.—A disease in young puppies is known by this name. It generally occurs whilst sucking, and with the puniest in the litter; the origin is probably its weakness preventing it obtaining a fair share of nourishment among its stronger brothers and sisters.

The symptoms are as the name indicates, and wasting of the muscles. Worms may be a cause, and evidently there is weak digestion and great flatulence.

Except in some very valuable strain that there is a strong reason to preserve, they do not pay for the trouble of treating. As soon as the pup will lap give lime water in cow's milk, and feed with a variety of nourishing things given often in small quantities.

Prolapsus Ani.—This sometimes occurs, and oftenest in pampered house dogs when getting old, kept too fat, and not having much exercise, which together produce constipation and cause straining.

When treating, the protruded part should be cleansed and pressed into its place, and cold douches frequently used to the part. The diet should be laxative, and exercise made compulsory.

Prolapsus, or Falling of the Vagina.—This is a protrusion of the membrane of the vagina, leading to the womb, in the form of a soft, red swelling. It generally occurs during, or immediately after, the period of heat. It must be carefully washed, and returned to its place with gentleness, which can be done by anyone with a little care. The following injection should then be used for a few days, and one of the powders given twice a day:

Injection for Prolapsus.—Take tannic acid and glycerine, loz.; water to make a pint. Inject with a female syringe.

Astringent Powders for Prolapsus.—Take gallic acid, 18 grains; alum, 12 grains; mix, and divide into six equal powders, and give one twice a day, first dissolving them in hot water, which must be allowed to cool before administering.

Falling of the vagina must not be confounded with inversion of the womb, which occasionally happens after pupping, and which can only be safely treated by a qualified practitioner, no amateur being likely to possess a sufficient anatomical knowledge, or the skill in manipulation requisite for success.

Pulse.—See TEMPERATURE AND PULSE.

Purging.—This is a symptom in many diseases, but it may exist simply from temporary derangement of the stomach, or from some irritating substance taken into the intestines, in which cases a dose of castor oil and extra attention to diet is all that is necessary to be done.

R.

Rabies, or Canine Madness.—Although the symptoms of this terrible disease have long been recognised and clearly stated by scientific men, there is still, unfortunately, great ignorance regarding it evinced by the general public—an ignorance fraught with much danger to man, and the cause of much cruelty and death, often most brutally inflicted on hundreds of poor dogs, more innocent of madness than the frantic crowd who do their best to hunt the poor frightened, nervous beast into that state.

I have found the prevailing idea of a mad dog to be that of an animal with glaring, bloodshot eyes, covered with the froth of his excitement, and rushing wildly hither and thither in search of man or beast to bite; whilst a dog lost in a crowded town, and excitedly nervous at finding himself out of his knowledge, is often enough to raise the cry of "a mad dog," and with many a fit is a sign positive, and the occurrence of epilepsy has been the incitement to canine murder in numberless instances.

It is quite true that the disease produces great nervous excitement, and creates a spirit of unrest—it also, in the first stage of its existence, increases the flow of saliva—but not the emission of froth from the mouth, which is produced by the champing of the jaws in an epileptic fit; in rabies, the discharge becomes thick and glutinous, and the sufferer may be seen pawing at his mouth to clear it, as though choked with a bone. The disposition of the dog is often entirely changed, and one frolicsome and fond of being caressed may become sullen and shy, retiring into some quiet lair, generally selecting some dark corner, behind a large object. If out on the march he will rather evade man than seek company; and although biting furiously at all and everything that obstructs his passage, rarely going out of his way to seek an enemy. He evinces a strong desire to tear and gnaw everything he gets hold of; nothing comes amiss to him, and the disposition to bite is shown by his frequently snapping at imaginary objects in the air. Contrary to the generally received opinion, and condemnatory of the name hydrophobia, erroneously given to this disease in the dog, the poor sufferer laps water greedily as long as his power over the muscles is

retained, and when that is gone, plunges his head into the water to cool his parched and burning mouth. In the latter stages the dog may have convulsions, but fits are not a premonitory nor an early symptom, and their presence, independent of more certain evidence of rabies, should never give rise to fear.

I cannot attempt more than to indicate the more prominent and well-known certain symptoms, and those who wish for fuller information on the subject, should consult the works of Youatt, and the more recent book of Dr. Fleming.

Whilst too great care and caution cannot be used in dealing with a disease so dangerous, I wish to warn my readers against that unnecessary and hysterical alarm which dethrones the reason, and predisposes to the gravest results. If there be reason to suspect a dog of madness, if his natural disposition appears changed without a traceable cause, if he tears and bites at inedible objects, such as his bedding, pieces of wood, carpets, dirt, &c., if he be seen to paw at his mouth frequently, whilst no obstructive article is in his throat, if at intervals he snap and bite savagely at objects real and imaginary, if, after these paroxysms, he be seen to stagger and fall, if he show an insatiable thirst—if any or all of these symptoms be present, shut him up where he can do no harm, and call in to your aid a veterinary surgeon. By allowing him to study the case, you will do a public good; for, fortunately, cases of rabies are very rare, and it is only by the careful investigation of them by men specially educated to undertake the duty, that we can ever hope to discover a cure.

Among the numerous superstitions that hang like clouds round canine madness, obscuring any possibility of a clear view of it, I will refer to one only, most of them being altogether unworthy of notice. It has long been a popular belief that a person bitten by a dog, even if the animal be in perfect health at the time, is never safe from an attack of rabies so long as the dog lives; for it is held, that should the dog become mad at any future period, however distant, the person bitten will also fall a victim to the disease. Cases supposed to prove that rabies may be communicated by a dog free from it are constantly cropping up, and I find in *The Country* newspaper, of June 12, 1873, the case of a woman commented on, who is said to have died from hydrophobia, caused by the bite of a dog that was clearly proved to be free from rabies at the time, and has remained so ever since. The woman, it appears, was in an upper room with her child, and the entrance of a small dog so alarmed her for her child's safety, that she seized the intruder and threw it out of window, and was bitten in the struggle; the woman was taken ill and died, showing all the symptoms of hydrophobia, and the surgeon who attended her certified that death was from that disease. I do not intend to dispute the opinion thus given, but I venture to say had the whole facts of the case been carefully investigated, say, by a jury of physicians of experience, it would have been proved that the bite of that dog had but a small share in causing the woman's death. To me it appears as reasonable to believe that the dog could have bitten the woman without being in the same room with her as that the bite could

communicate rabies when the disease did not at the time exist. Such cases should not be passed by, but thoroughly sifted by qualified men, that the truth might be elicited and the fears of the nervous allayed. The practical lesson to be learned from this is, care and caution in dealing with dogs, especially strange ones, and to curb unnecessary alarm, which often brings about the evil it would avoid. When an accident does occur, have the wound promptly cauterised to its full depth with caustic, and let the nervous, in addition, obtain medical advice.

I recommend those having much to do with dogs to carry in the pocket at all times one of those wooden cases of caustic, which costs but sixpence, and with this safeguard about them, and the presence of mind and nerve to use it promptly and thoroughly—taking care the caustic reaches as deep as the tooth did—the bite even of a mad dog will do them no harm.

Since the above was written ten years ago, rabies in dogs has unfortunately been rather frequent, and a few years ago from the number of deaths from hydrophobia, caused by the bites from mad dogs, quite a panic arose, with the result that the attention of medical men and veterinarians at home and abroad has been very much directed to its nature; as yet, however, no cure has been discovered, and I see no reason to alter what I have already said; but it will be useful very briefly to notice one or two points of special interest. Latest researches seem to point conclusively that the rabid poison exists in the saliva, and in none of the other secretions.

Although its propagation by a bite or by the poisoned saliva coming in contact with an abraded or highly vascular surface are clearly enough the means of transmission and propagation, how it originates, is unknown; exposure to great heat, feeding on salt meat, compelled abstinence from water, and many other causes have been suggested as producing causes, but proved not to be so. The old notion that it is peculiarly a disease of the dog days, is fabulous, nor is it connected with the functions of procreation, further than the present law in this country permits owners of bitches when in season to be fought over by excited males, furnishes excellent opportunities for its spread as well as being an insult to decency. It is the duty of men who keep dogs to have some knowledge of their nature, and the law should punish the ignorance or carelessness that causes an offence and a danger to the public.

Unfortunately no cures are yet known; such things as the so-called Birling and Webb's cures, and other pretended family secrets may be swept aside. Medical men have tried every conceivable drug, and a few years ago it was thought a specific had been found in *curari*, but it proved delusive. Hot and vapour baths have their votaries, just as half drowning in Hogg's Crib, a pool in the Severn, was at one time believed in.

Preventive measures are alone to be relied on, and the very old one of the Greeks sucking the part is excellent, and a small instrument has been invented which can be easily used; it is like an old-fashioned breast exhauster, with the bell shaped head and long tube, but with a round bell half way up the tube as well, which of course receives all that the operator sucks out of the wound and renders him quite free from danger. It is

made by chemists in York, and can I believe be bought through Maw, Son, and Thompson, Aldersgate-street, London.

Rheumatism.—This is a very common disease in dogs, one form of it being known as Kennel Lameness, which has been already described. In lumbago, another form of the disease, the back and hind quarters are affected; the dog drags his hind legs, and shows evidence of acute pain when touched, or even when an attempt to touch him is made. In rheumatism there is always more or less of fever present; the nose is hot and dry, the urine scanty and higher-coloured than usual, and generally the bowels are to some extent costive.

In treating a dog for rheumatism, it is imperative the bowels should be at once freely acted on; and for this purpose the “compound podophyllin pills” (p. 42) will be found most suitable, or as a substitute, should it be inconvenient to obtain them, give for a 20lb. to 30lb. dog 2drams of Epsom salts with 20grs. of cream of tartar, as a drench, in water. After the bowels have been relieved, give for a dog of that size 10grs. bi-carbonate of potash daily. The warm bath will often give immediate relief from pain, more especially if followed by a vigorous application of one or other of the liniments ordered for Kennel Lameness (p. 59). As rheumatic attacks are generally caused by exposure to wet and cold, or more frequently by the dog being placed in a damp, cold, or draughty kennel (especially when so placed whilst warm after a run), preventive measures are to a considerable extent in the hands of the master, and should receive due attention. A light diet is advisable during the existence of rheumatism, more especially whilst any feverishness is present. It should be noted that a dog having once suffered from rheumatism in any form should receive special attention, as one attack predisposes to subsequent seizures.

Rickets.—Pups, the offspring of an enfeebled dam yielding an insufficient supply of milk, and that of poor quality, or those that are from any cause ill fed and neglected, or kept in close, ill-ventilated places, without a chance of fresh air and needful exercise, suffer from misshapen limbs, thick joints, and other deformities, caused by the bones being imperfectly developed, the food, and other conditions on which the pup is reared not yielding the constituents necessary to give them the required hardness to enable them to perform their proper functions. This state is known as rickets, and the cause being plain, the treatment is evident.

Do not attempt to rear a pup on a weakly unhealthy mother, but if the breed is desired, procure for the pups a foster-mother of undoubted health and stamina; let the nest be in a warm, airy place, and as soon as the pups are able to leave the nest let them have plenty of room, fresh air, warmth, and sunshine if possible, and insure thorough cleanliness of the place in which they are kept. When old enough to eat, let their diet be light, nourishing, and digestible, and rickets will be avoided. In cases where rickets already exist attend to the above suggestions; let a considerable portion of the diet consist of good milk, to which add a little lime water, say a tablespoonful to every quarter pint, and give in the food small doses of cod liver oil twice a day for some months.

Ringworm.—This is an occasional dog disease, due to vegetable parasite. It appears in circular, scaly patches, and is very contagious. It is due to dirty, damp kennels, but might be communicated by a child suffering from it.

A little of the ointment of iodide of iron, rubbed in, is the best treatment; it is prepared as follows: 1dr. of iodide of iron, and 7dr. of spermaceti ointment, mixed.

S.

St. Vitus's Dance.—See CHOREA.

Scalds.—See BURNS.

Scurf.—This occurs from want of attention to the skin, but it often appears on the ears as a forerunner of canker, in which cases wash with warm water, and anoint with olive oil, and give the dog a dose of physic and a light diet for a day or two.

Stomach, Inflammation of.—This may be caused by irritants accidentally swallowed, frequently by mineral and other poisons thoughtlessly thrown out by housekeepers or servants who have used it for poisoning rats, mice, &c., or the administration of turpentine in capsules or any other form, except combined with an emulcient. Dogs also at times accidentally swallow extraordinary things of an irritating nature in their haste to devour picked-up garbage, which produce inflammation.

The first and principal symptoms for the owner to notice are excessive thirst and violent vomiting, and between indulgence in these the dog will lie down on his side stretched out and whine and moan from the pain he is suffering.

The treatment is to keep the dog quite undisturbed. Let him have at his command a constant supply of water that has been boiled, and give thin mutton broth made with Scotch barley, and a little isinglass may be added to it. Opium to allay the pain may be given, but cautiously, and the less of any medicine the better. Diarrhœa will not unlikely follow, and must be treated as directed under that head.

Sunstroke.—I have seen in no writings on dog diseases allusion made to dogs being liable to sunstroke, but I have seen cases I consider to be sunstroke—one, a fox terrier bitch, in New York, which I was called in by a friend to see, and her life was saved by the application of ice to the head, and sedative treatment afterwards.

Some readers will recollect the Burton-on-Trent show, 1878, when during the judging the heat was almost tropical, followed by a storm, sudden and short, that nearly carried away the tent. During the heat a bull dog, and, I think, also a pug, was overpowered by the heat and had fits. One (the bull dog) I think, died. I thought then and since it was sunstroke, from the suddenness of the attack, the stentorous breathing

and quick collapse. In such cases quickly remove the dog to a retired place, as cool as accessible, where air is free, and apply ice, if possible, or the coldest water obtainable, to the head.

Surfeit.—See MANGE.

T.

Teeth.—The dog has, when the set is complete, or in kennel parlance, when he “has a full mouth,” forty-two teeth, made up of twelve incisors or cutting teeth, four canines or fangs, and twenty-six molars, double, or grinding teeth.

Some of these constitute what are ordinarily called the milk teeth, and are deciduous—that is to say, they are after a few months cast, and give place to permanent ones.

The incisors—six above and six below—form the front teeth; those in the upper jaw are the larger, and both above and below the centre teeth are the smaller, the outer or corner cutters the strongest; these appear at the age of from four to five weeks, and give place to the permanent incisors at three to four months.

The canines or *fangs* also make their appearance when the pup is from four to six weeks old, and these are replaced by the permanent fangs about the age of five or six months—they are considerably elongated and pointed; the upper ones are the stronger.

The molars.—Of these, twelve are in the upper jaw, and fourteen in the lower; the first (that is, of course, the four, two upper and two under) are not deciduous, and make their appearance at about three or four months; the second, third in the upper and fourth in the lower are, like the incisors and canines, deciduous, appearing at the fourth or fifth week, and giving place to the permanent ones at five to six months; the fourth in the upper jaw is much the strongest, and in the lower jaw the fifth is the largest and strongest. The fifth generally appears from the fourth to the fifth month, the sixth at the age of from five to six months, and the seventh in the lower jaw from five and a half to seven months. Most of the molars, whilst adapted for grinding or crushing bones, &c., are terminated by acute lobes suitable for tearing flesh.

Temperature and Pulse.—As indications of health or departure from the normal state the temperature and the moisture or dryness of the nose—the integument forming the walls of the nostrils—are very delicate indicators, but, if I may say so, they tell too much, and are too general, and do not enable us to discriminate. When the nose is dry and hot we know the dog is out of sorts, but we have to search for other symptoms to determine what is the matter. The pulse and general temperature are important aids to diagnosis far too much neglected.

The first thing a medical man does when he visits a patient is to feel the

pulse, and if there is a suspicion of fever of any kind, the temperature of the body is carefully taken; this course, if followed with the dog, would assist the owner in treating his animal in all inflammatory and febrile cases, such as distemper.

The pulse in the dog varies from 90 to 100 beats per minute, the heart's action being quicker in highly bred, nervous dogs, such as are some strains of setters and pointers, and some of the finely bred toys, and for this reason the owner should make himself acquainted with the pulse and temperature of his dog in health, in order that he may be able at once to detect departure from the normal state. The pulse can be felt inside the knee, but, especially in small dogs, it is better to count the heart beats. If the left foreleg is held up so that the elbow is slightly bent, the point of it will indicate the place where the hand should be held flat over it.

The temperature is gauged by placing one of Weiss' clinical thermometers above the elbow and between that and the body, and keeping it there for three and a half minutes. I have not made extensive experiments, but it is very simple, and any medical friend who cares for dogs will do it *con amore* if the veterinary surgeon has not a thermometer, and the temperature in health should be made a note of for use in treatment should the dog become ill. I advise this, not knowing whether individual dogs, which differ so widely in size, &c., may not vary in natural temperature, for on this head I can find no information in the works of any writer on dogs, and I have access to all, I believe, in our own language. My two Skye terriers register 97deg.

Ticks.—See PARASITES LIVING ON THE SKIN.

Tongue, Worming.—See WORMING, &c.

Tumours of Mammæ.—See LACTEAL TUMOURS.

U.

Udder Tumours.—See LACTEAL TUMOURS.

Unpleasant Breath.—This is often complained of, and arises from decayed teeth, which should be removed, or from a bad state of the stomach, which latter should be treated by giving a dose or two of physic, and afterwards tonic pills.

Uterus, Inversion of.—This sometimes occurs after pupping, and also from great weakness. The uterus is turned inside out, and part of it is seen to protrude at the opening of the vagina.

For treatment it should be returned as gently as possible, and mild astringents afterwards injected, but the whole treatment is most advisedly left to the veterinary surgeon.

V.

Vagina, Prolapsus of.—See PROLAPSUS.

Vermin.—See PARASITES LIVING ON THE SKIN.

W.

Weakness in Eyes.—Tears, or watery discharge from the eyes, are natural to some breeds of dogs, notably Blenheims and King Charles spaniels, and, in that case, should not be interfered with; but the weakness may arise from slight inflammation, in which case give light diet, a purge if the dog is gross and fat, and use the following lotion for the eyes.

Lotion for Weak Eyes.—12grs. sulphate of zinc; $\frac{1}{4}$ oz. of laudanum; 6oz. water—bathe freely.

Womb, falling of.—See PROLAPSUS.

Worming the Tongue.—There is a very old-standing idea still existing in some isolated nooks and muddled brains, that a dog has a worm under the tongue, and that the removal of it, called “worming,” does great good, and among other things prevents the dog biting, should he ever become mad. The operation consists of cutting the bridle of the tongue and pulling out a small ligament, which, by contraction, curls like a worm. It is scarcely necessary to say that the operation is as cruel as uncalled for, and should, with “cropping,” be sent to the limbo of obsolete stupidities.

Worms.—These parasites are a very fertile source of annoyance and loss to dog owners. They are the cause of great mortality in kennels, particularly among puppies.

The varieties of worms infesting the dog are very numerous, far more so than dog owners in general have the slightest idea of. A variety has been found in the eye, another in the nasal sinuses, where it causes great irritation; the cruel thread worm finds its way into the heart, producing a most painful death; some are found in the blood, the liver has its parasite, so have the kidneys and urethra, and with those of the stomach and intestines dog owners are all too familiar.

It is outside the scheme of this handbook to go into minutiae on these, but I strongly advise intelligent owners of kennels to consult for their pleasure and practical benefit the works of Dr. Spencer Cobbold on parasites, wherein much interesting and useful information on the subject will be found. It was long the practice of writers on, as well as owners of, dogs to roughly classify the worms infesting dogs, as the mawworm, roundworm, and tapeworm, and I followed the same in the previous edition, and shall keep up the semblance of it still.

THE MAW WORM.—Pieces of flat, milky-white substance, from half to

one inch long, and evidently possessing life, are often seen passed in considerable numbers with the excrement, and these have long been called "maw-worms," but are proved to be mere semi-independent segments of some of the larger tapeworms, so that we must give the maw-worm up as a perfect and complete worm, although the name will no doubt long be retained.

The maw-worm, as we may as well continue to call these segments, at least serves one good end. In it we have most palpable evidence of tapeworm in the dog, the expulsion of which should be our immediate object.

THE ROUND WORM.—These exist in great variety, the most commonly met with measure from two to eight inches in length, and are of a pale pink colour, round in shape, and pointed at both extremities. They chiefly exist in the smaller intestines, sometimes crawl into the stomach, and are vomited, and one variety is frequently passed *per anum* coiled together in balls. They cause great constitutional derangement, interfering with digestion and the natural action of the bowels, and greatly reduce the dog's health and strength.

THE TAPE WORM is a long, flat worm, divided into joints, the head being thicker than the rest of its body. It inhabits the smaller intestines, and is still more destructive to health than the round worm. One variety sometimes attains the immense length of from six to nine feet, and may sometimes be seen hanging from the anus of the dog, causing the animal much annoyance, and presenting a disgusting appearance.

The general symptoms which guide us in deciding whether a dog is infested with worms are an irregular and frequently a ravenous appetite, coexisting with considerable emaciation, the food taken seeming to do the dog no good. Contrary to this general fact, however, dogs sometimes remain fat and sleek long after the fact becomes known by ocular demonstration that they are infested with these parasites. The breath is often offensive, and the nose dry and hot. The coat presents a rough, harsh, unhealthy appearance, standing open, or, as it is called, staring, and is more or less destitute of its natural gloss; the belly is often enlarged and hard, and the evacuations are frequent or irregular, small quantities of *fæces* being passed, the first portion hard, the latter consisting of frothy mucus, and should a worm or part of one be observed, all obscurity as to the dog's being "out of sorts" is at an end. In puppies, fits are often caused by worms.

Health is impossible to the animal in which these parasites exist to any extent, hence the necessity of taking prompt measures for their removal; but, although the vegetable and mineral kingdoms have been ransacked for remedies, and one thing after another extolled as the best and most certain of cures, the expulsion of worms from their fastnesses is by no means in all cases easy; for, as has been very aptly remarked, "although we can force poison down the throats of the animals, we cannot compel the worms to receive it." I have found in practice, without being able to discover an explanation, that a vermifuge successful in one case will fail in another which appears identical in all circumstances.

The following list includes most of the anthelmintics or agents which destroy or expel worms with which I am acquainted: Powdered glass, granulated tin, horsehair cut fine, cowhage or cow-itch. These act mechanically, and none of them are very reliable. Cowhage is the best of them; it should be given in doses of a small teaspoonful for a dog 50lb. or 60lb. weight, mixed with treacle into a stiff paste, the dose repeated every fourth or fifth morning till three doses have been given. Besides tin in mineral substances, arsenic, mercury in the form of its chloride, and calomel, are resorted to for the destruction of worms, often ending in the destruction of the dog, and such very dangerous agents are best left alone. Common salt too comes into the mineral class, but as it acts powerfully as an emetic on the dog, the only way it is likely to reach the worms is when administered as an enema, and in this case care must be taken not to use the solution too strong, a teaspoonful of salt to three pints of water is strong enough. The unlearned are specially given to reason that if a weak dose does good a strong one will do more, but such is not the case, and often produces grave results when tried.

The vegetable world furnishes a numerous list of vermifuges, of which I may enumerate the following, each having its advocates: wormwood, garlic, cowhage (the stiff brown hairs which cover the pods of the climbing plant *Macuna pruriens*), Barbadoes tar, Venice turpentine, spirit of turpentine, Koussou, Indian pink, stinking hellebore, santonine (the active principle of worm-seed, *Artemisia contra*), areca nut, also called betel nut, savin, tobacco, pomegranate bark, male fern, and kamala. Of these, wormwood, garlic, cowhage, pomegranate bark, and tar, are but little to be depended on; the dose of pomegranate is twenty to thirty grains of the bark, finely powdered, and it may be tried if other remedies have failed.

Koussou, or Cusso (*Brayera anthelmintica*), the flowers of a tree growing in Abyssinia, and said to have been used by the natives as an anthelmintic for some centuries, has been much extolled for tapeworms; it is given as an infusion, $\frac{1}{4}$ oz. infused in quarter pint of boiling water, allowed to stand till cold, and then strained, forming a dose for a large dog. It is, however, uncertain in its action, and not very safe, and the same remarks apply with greater force to Indian pink, a United States plant (*Spigelia Marylandica*), stinking hellebore (*Helleborus fetidus*), also called bear's-foot, and Settiswort, tobacco, and savin (*Juniperus Sabina*); all of these should be discarded as very unsafe, especially in the hands of those unaccustomed to deal with medicines. There remains of our list turpentine and Venice turpentine—the first is a good vermifuge, but apt to inflame the kidneys; to prevent this, an emulsion should be formed by mixing it with yolk of egg and olive oil; the dose for a medium sized dog is a teaspoonful. Venice turpentine is a milder remedy, it may be given in doses of a drachm made into pills with flour or with areca nut powder. Santonine is an excellent remedy, and has the advantage of being easily given, the dose for puppies being two to five grains. Areca nut is, perhaps, the most generally useful worm medicine we have. It may be given with perfect safety to dogs of any age, even the most delicate. The best plan

is to buy the nut and grate it freshly as required; in purchasing see that the nuts are sound, which you may tell by appearance and weight—if you find one light and worm-eaten, reject it. It may be given mixed with fat, and placed well back on the tongue; but if freshly mixed with a little savoury broth the dog will generally take it readily; if allowed to stand long in the broth it becomes bitter. The dose is two grains to every pound weight of the dog, but no dog will require more than two drachms. The oil of male fern, or, as it is now called, ethereal extract of male fern, is a very effective remedy in tape worm. It is obtained from the roots of *Lastrea Filix Mas* (male shield fern), and is the most convenient form for administering the drug. The powder of the root has been used as an anthelmintic from a very remote period. The oil or extract is very irritating, and very frequently produces vomiting, and as a preventive of that it is often advisable, after giving the dose, to tie the dog's head up for an hour. The following formula, however, softens greatly its irritating effects, and I would recommend it to be kept ready mixed, as in a well stoppered bottle and in a cool place it will retain its good qualities a long time, merely requiring to be well shaken before a dose is measured out.

Oil of Male Fern Emulsion for Tape Worm.—Take oil of male fern $\frac{1}{2}$ oz.; powdered gum acacia, 1 oz.; pure glycerine 1 oz.; water to make 10 oz. It should be mixed by a chemist, who will make a much nicer emulsion than a person unaccustomed to dispense could do. It should be kept in a glass stoppered bottle, and well shaken before used. The dose for a dog such as a mastiff is two tablespoonfuls.

Kamala is comparatively a new remedy against worms in this country. It is a product of India, and is a dry, reddish-brown powder, obtained from minute glands adhering to the capsules of *Rottlera tinctoria*; the dose is the same as areca nut. I am rather surprised that it is not even referred to by "Stonehenge," who gives a numerous list of anthelmintics, nor by any other writer on dogs that I have had an opportunity of consulting. In my own experience I have found it a most useful remedy for both round and tape worm, and I can strongly recommend it. It is mentioned by Squire in his "Companion to the British Pharmacopœia," and I believe I am right in saying it is the substance of some of the advertised worm powders which are charged a ridiculously high price. Kamala can now be bought at per lb. what it cost per ounce ten years ago, and any chemist can supply it at about 6d. or 8d. per ounce.

There are general rules to be observed in giving worm medicines to dogs—the animal must be prepared for it, as it is of no use giving it them on a full stomach; a strong and mature dog should be kept without food for twenty-four hours before giving a vermifuge; weakly dogs and young puppies a less period, but sufficient to empty the stomach; with young pups, omitting the evening meal, and giving the worm medicine in the morning generally answers. My practice is to give a tablespoonful of olive oil to the dog in the evening before giving the vermifuge; and the worm medicine should always be followed in a few

hours by a purgative, for which purpose there is nothing better than the "buckthorn mixture" (see "Canine Materia Medica," p. 102). Many of the worm medicines advertised have jalap and other purgatives combined with the anthelmintics, but that is not a good plan. Another point to be observed is the repetition of the dose. It is in almost all cases needful to repeat worm expellants two or three times at intervals of four or five days, and in every case the dog should be kept confined, that the effect may be observed. In the case of tape worm the remedy or remedies selected must be persevered with until the head of the worm is expelled, and in all cases the worms and all discharged fæces should be either burned or mixed with some powerful disinfectant, and deeply buried, to prevent propagation of the parasites by their ova.

Wounds.—These vary in kind, and need different treatment, according to the case.

CONTUSED WOUNDS OR BRUISES.—Bathe and cleanse from dirt, and, unless of a very severe nature, leave alone. If severe, and there is stiffness, repeat bathing with warm water, and rub with a stimulating liniment.

CUTS.—Where the tissues are severed as with a knife, showing a gap with clean (not ragged) edges, close as quickly as possible with strips of plaster or a few stitches, according to the extent of the wound.

PUNCTURED WOUNDS OR STABS.—The difficulty is to know how deep they are, and whether any important organs are involved. If there is reason to suspect internal injury, consult a surgeon.

CORN OR LACERATED WOUNDS, presenting a more ragged appearance, are more difficult to manage. If from bites, cauterise with lunar caustic thoroughly.

Y.

Yellows, the.—See JAUNDICE and DISTEMPER.

CANINE MATERIA MEDICA.

MEDICINES USED IN CANINE DISEASES.

THE list of medicines used in the diseases of the dog will always be considerably restricted by the peculiarities of his organisation, the stomach being easily excited, and irritating matters instantly rejected; the list of medicaments is, however, being gradually enlarged by the addition of those drugs which a more extensive experience and a closer study of the animal's organisation have proved valuable, many of the newer drugs being used to the exclusion of time-honoured agents, now proved to be worthless, or even dangerous.

In giving the following list, my aim is to make it practically useful to the dog owner, by stating the properties, doses, and modes of administering or applying as plainly as possible, as I believe the owner is, in many cases likely to prove the best doctor for his dog.

At the same time it must always be remembered that a knowledge of drugs is not a knowledge of disease; and I hope that whilst in the previous portion of this work I have endeavoured to help those desirous of treating the diseases of their dogs rationally, I have not failed to point out where it would be dangerous for the amateur to interfere, and I now repeat as a good general rule—where there is evidence of serious illness, and the symptoms are not clearly pronounced, where you cannot pretty plainly trace what is wrong, to give medicines haphazard, even though in correct doses, is but to complicate the case, and most cruelly punish the already suffering dog. Therefore it is much wiser in such cases, where the animal is valuable, or highly valued, to have the benefit of a veterinary surgeon's skill and experience, or otherwise to depend solely on kind and sensible domestic treatment. The vast majority of cases, however are not of such serious nature, and may be undertaken by any sensible person who will give attention to the symptoms and a careful selection of the remedies advised. Before proceeding with the alphabetical list of medicines, a few explanatory remarks will be required to clear the way and to save much useless repetition. In giving medicines in their simple forms—that is, uncombined with others—if you are not provided with a set of dispensing scales and weights (which may be purchased retail for 2s. 6d. com-

plete), or in the case of liquids, with proper measures, get the article accurately divided into correct doses by your chemist. Never give medicines, however simple and safe you think them, by the rule of thumb. In all mixtures, pills, &c., requiring skill and care in their preparation, and especially where a powerful drug enters into the composition, let the chemist dispense it. The little extra cost will be more than compensated for by the greater and more certain efficacy of a properly prepared remedy.

Many drugs become inert or greatly deteriorate by keeping, especially when exposed to light and air; therefore, buy such drugs only in quantities for immediate use, and from those whose judgment in selection and whose fair dealing can be depended on; for, unfortunately, there are too many who think or act as though they thought anything in the way of medicine good enough for a dog or horse, and I speak within bounds when I say there are many tons of the most worthless rubbish annually vended as veterinary medicines.

TERMS.

The following classification of drugs, with explanations, is given, because the terms have had to be used to avoid verbosity :

Alteratives.—Medicines which, being given in small and often repeated doses, gradually bring about a healthy state of the system without sensibly augmenting the secretions—such as arsenic and its preparations, iodide of potassium, some mercurial preparations, &c.

Anæsthetics.—Drugs which deprive of sensation or feeling, as ether, chloroform.

Anodynes.—Medicines which assuage pain, as chloroform, opium, &c.

Anthelmintics, or Vermifuges.—Agents which destroy or expel worms. For full list see article on WORMS.

Antiseptics.—Medicines which resist or check putrefaction, as charcoal, creosote, carbolic acid, chlorides of lime and soda, &c.

Antispasmodics.—Medicines which overcome inordinate muscular action, and from their sedative effects allay spasm and resist convulsions, as chloroform or opium.

Aperients.—See *Cathartics*.

Astringents.—Agents which contract muscular fibre, and are used internally to check diarrhoea, hæmorrhage, and diabetes, externally to stop bleeding, and diminish the discharge from wounds, such as catechu, alum, gallic acid, &c.

Blisters.—Agents used as counter-irritants in internal inflammation. Strong liquid ammonia is a good and quick blister for the dog; it may be applied on a cloth or sponge held on the part designed to be blistered for ten minutes or so. The following is a mild blister :

Mild Blister.—Take lard 4oz., beeswax $\frac{3}{4}$ oz., powdered cantharides $\frac{3}{4}$ oz.; melt the wax and lard together, and stir in the powder as the ointment gets cold.

This should be rubbed well into the skin, or spread on a piece of linen and kept bound on till the pustules rise. Spirit of turpentine acts as a blister; wring a piece of flannel out of hot water, sprinkle with turpentine, and apply to the part. In applying a blister the hair should first be cut off as close to the skin as possible, and where Spanish fly or other poisonous substance is used, the dog should wear a wire muzzle the while. Apply to the blistered parts pure olive oil or spermaceti ointment.

Cardiacs or Cordials.—Medicines which increase the strength, stimulate the stomach, and animate the spirits. Cordials are often given to greyhounds and other dogs when severely run. The formula given under the head of Cardamom Seeds (p. 102) is a very good one.

Carminatives.—Medicines which expel wind, such as carraway seeds and oil of peppermint, ginger, &c.

Cathartics, Purgatives, Aperients.—Medicines which cause alvine discharges, and so cleanse the stomach and bowels. Laxatives are mild aperients.

Caustics.—Agents which destroy or decompose the parts to which they are applied; used for the removal of warts, proud flesh in wounds, by searing the parts to prevent the absorption of virus in case of bites, &c. The most active are nitrate of silver, nitric acid, carbolic acid, chloride of zinc, the hot iron or actual cautery.

Demulcents.—Agents which soften the effects of irritants, by sheathing the surface, such as glycerine, gum acacia, &c., used as a vehicle in giving such irritating articles as spirit of turpentine, oil of male fern, and many others.

Diaphoretics.—Medicines which produce perspiration or sweating, as sweet spirit of nitre.

Diuretics.—Medicines which increase the discharge of urine, as nitrate of potash, Venice turpentine, balsam copaiba.

Emetics.—Medicines which cause vomiting. Agents producing this effect on the dog are very numerous, his stomach being very easily acted on in this way; when at liberty he eats the dog grass (*Triticum repens*) for the purpose of producing vomiting. Sulphate of zinc, emetic tartar, and common salt are useful emetics, and ipecacuanha wine, though dearer, is much easier in its effects.

Emollients.—Agents which soften and relax the parts to which they are applied, as poultices, fomentations, olive oil, camphorated oil, and various ointments.

Laxatives.—See *Cathartics*.

Narcotics.—Medicines which tend to produce sleep and assuage pain. Opium is chiefly used for the dog.

Purgatives.—See *Cathartics*.

Stimulants.—Medicines which produce an immediate, though transient,

increase of strength; given in collapse, exhaustion, or in excessive debility when fever is not present. Ammonia, tincture of cardamoms, whisky, sherry, &c.

Stomachics and Tonics.—Medicines which excite and strengthen the stomach. Tonics are specially called for in debility following fever, distemper, and other lowering diseases. Those mostly used for the dog are rhubarb, gentian, Peruvian bark, quinine, iron, &c.

Styptics.—Medicines which arrest bleeding through an astringent quality, as acetate of lead.

Tonics.—See *Stomachics*.

Vermifuge.—See *Anthelmintics*.

DRUGS.

Acetic Acid.—Used in making Mindererus' spirit, which enters into fever mixture, distemper mixture, &c.; also as a cooling lotion, combined with sal ammoniac and spirit, for application to swellings and bruises, to reduce local inflammation where the skin is not broken.

Cooling Lotion.—The following is the formula:—Take sal ammoniac 4oz., strong acetic acid 10oz., boiling water 10oz., methylated spirit 2oz. Powder the sal ammoniac and dissolve in the boiling water and acetic acid, and add the spirit.

Before applying the lotion it must be mixed with eight or ten parts of cold water, and the part kept constantly wetted with it until heat, pain, and other inflammatory symptoms have disappeared. N.B.—An intermittent use of such lotions by causing reaction often does more harm than good.

Acid, Gallic.—Astringent and Styptic.—Given in diabetes and for internal hæmorrhage. Dose, three to eight grains. The following powders are a useful form in which to administer it.

Styptic Powders.—Take gallic acid 3gr., powdered alum 4gr., powdered opium $\frac{1}{2}$ gr., to make one powder. One to be given twice or thrice a day.

Aconite.—The common name of this plant is monk's-hood, and both the leaves and root are used in medicine. The liniment of aconite of the British pharmacopœia often proves of great value in assuaging the pangs of rheumatism, and the tincture added to the distemper mixture is, in cases where there is nervous excitement, of great value. It must always be given with great caution. The dose of the tincture is from one half to three drops, according to age and size.

Æthiop's Mineral.—This is a very favourite medicine with the regular "dog doctor," by whom it is given for almost every disease. Although formerly prescribed as an alterative in glandular affections and outaneous diseases, it has been proved quite inert, and is now discarded. It is

merely mentioned here to warn against faith in the virtues ascribed to it by the vulgar. I would also warn against a mistake which I once knew to cost the life of a valuable dog, that is, confounding Æthiop's mineral with Turpeth mineral—another mercurial preparation, much more active and poisonous in much smaller doses than may be given with impunity of the other. Æthiop's mineral is black in colour, and Turpeth mineral is a bright yellow. The latter article, I may remark in passing, was at one time held to be a preservative against hydrophobia.

Aloes.—This is one of the safest and best purgatives for the dog, the dose is from ten grains up to twenty grains, the dog requiring a proportionately much larger dose of this drug than man; it is, however, always advisable to try the effects of the smaller dose first, as the lives of many dogs are sacrificed to a rash boldness in administering over doses. Aloes are generally given in conjunction with other purgatives, as jalap, rhubarb, &c., and they enter into the composition of most aperient pills made for the dog. The following is a useful mild aperient bolus:

Mild Aperient Bolus.—Take aloes socotrine, $1\frac{1}{2}$ dr.; powdered jalap, 2sc.; powdered ginger, 1sc.; Castile soap, $\frac{1}{2}$ dr.; make into twelve balls. Dose, one or two. Or for small dogs, into 24 pills.

Alum.—Astringent; dose four to eight grains, given in diabetes and internal hæmorrhage (see *Acid, gallic*). Alum is also given in cases of obstinate diarrhœa, in conjunction with opium, and it may be advantageously given in such cases as a clyster, dissolved in gruel. Burnt alum is a very mild caustic applied to fungous growths.

Ammonia, Aromatic Spirit of (Spirit of Sal Volatile).—A diffusible stimulant and antacid. It is useful in colic, and is given in cases of depression of the vital powers. The dose is from ten drops to a small teaspoonful. It must always be largely diluted before it is given.

Ammonia Muriate.—Sal ammoniac. For uses, see *Acetic acid*.

Ammonia, Solution of Acetate of (Mindererus' Spirit).—Given in febrile and inflammatory disorders, distemper, pneumonia, &c. The following is a mixture for distemper which may be given in any case where feverishness or inflammation is present:

Distemper Mixture.—Take chlorate of potash 2dr., sweet spirit of nitre 2dr., Mindererus' spirit 1oz., tincture of henbane 2dr., water sufficient to make 4oz. Dose, from one half to three teaspoonfuls.

Ammonia, Strong Liquid.—This is used as a blister to the dog (see *Blisters*). Diluted with three parts of distilled water, it forms the spirit of hartshorn of the shops, which, with other articles, is used as a liniment for sprains, bruises, rheumatism, &c.

Liniment for Sprains.—Equal parts of spirit of hartshorn, turpentine, rape oil, and laudanum, make a generally useful liniment for the above purposes. If in a glass-stoppered bottle, it will not be impaired by keeping.

Antimonial Powder (True James's Powder).—This is given as a febrifuge and diaphoretic in doses of from four to six grains; it is preferred to tartar emetic, as not being so likely to excite the dog's stomach. It is by some relied on as a cure for distemper.

Antimony, Tartarated (Tartar Emetic).—This, as its name implies, is an emetic. On the dog's stomach it acts very quickly; but, indeed, vomiting appears to be quite a natural act in the dog, and no doubt it is attended with beneficial results when he is his own doctor and applies to his natural physic, the couch or dog grass; but this habit in the dog has been used to his injury, and the use of emetics shamefully abused, and from being treated as a panacea for all dog ills, has done much harm. Emetics are, however, of use, and it is not bad practice to give one on the first appearance of distemper or jaundice, and in cases of poisoning they are our sheet anchor. The dose of tartar emetic, as an emetic, is from one to three grains given dissolved in warm water, and the dog freely drenched with it. It is also used as a febrifuge in doses of one-eighth of a grain to half a grain; but for this purpose the James's Powder, another preparation of antimony, is to be preferred.

Areca Nut.—Also called betel nut. This is one of the best vermifuges we have. Never buy it in powder; select the heaviest nut, reject such as are worm-eaten, and grate the dose required on a nutmeg-grater. The dose may be taken as two grains for every pound the dog weighs. It should be given on an empty stomach, and followed, in from one to two hours, by a dose of castor oil.

Arnica, Tincture of.—This is applied externally as a stimulant in sprains, bruises, and rheumatic lameness, and also for dispersing tumours. It should be used as a lotion diluted with from ten to twenty parts of cold water. So highly is arnica held in esteem in Germany as a remedy for bruises, &c., that the common people name it the "fall plant," and their more learned neighbours *Panacea lapsorum*. One other circumstance may be mentioned in connection with the arnica plant; it is said to be eaten by no animal except the goat.

Arsenic, Fowler's Solution of.—This is, I believe, the only way in which arsenic is given to the dog. It is an alterative, and, as such, is of great value in some cases of mange, and other obstinate skin diseases. The dose is from two to eight drops. It should always be given on a full stomach, and it must be withheld for a week or so if it has produced redness of the eyes, running of watery fluid from the nose, and a loathing of food. I generally give it with a tonic to prevent this last result. Give each dose in a teaspoonful of tincture of gentian or Peruvian bark, immediately after a meal.

Belladonna.—Deadly nightshade. This is a narcotic and sedative of very powerful action, and, like aconite, must be used with great caution. The tincture is the most useful preparation of it. Dose, from two to six drops.

Benzoin, Tincture of (Friar's Balsam).—An excellent application to cuts, tears, bites, &c. It should be applied as soon as the parts are cleaned from dirt, &c., to stop bleeding and protect the exposed surface. The tincture is also given in chronic coughs. Dose, ten or fifteen drops on sugar.

Bismuth.—The subnitrate of bismuth has a soothing effect in stomach

disorders, and in long-continued diarrhoea is often most beneficial. Three to ten grains of it may in such cases be given twice a day in chalk mixture.

Brimstone.—See *Sulphur*.

Bromide of Potassium.—This is very useful in epileptic fits and to allay excitement. It may be given in doses of from five to twenty grains, and where a dog is subject to fits, continued for two or three weeks. It has, however, a debilitating effect.

Buckthorn (Syrup of).—This is a time-honoured purgative for the dog, and a very good one, although it has got into disrepute, as I believe, through the rubbish that is too commonly sold under the name; for since it became obsolete as a medicine for man, druggists have been less careful in its preparation. The syrup should be made from the fresh juice of the berries of buckthorn (*Rhamorus catharticus*), a shrub or tree which grows plentifully in our woods and hedges. As it is so frequently required in the kennel, and can be easily made, and as many who live in the country may prefer to gather the berries (which are ripe in September and October) and make their own, I subjoin directions how to proceed. Having collected a sufficiency of berries, take the readiest and best means that suggest to press the juice entirely out of them, to assist which a little water may be added towards the last. Set aside the juice for a week and then decant the clear, straining any that may be thick at the bottom. To every three pints of juice add $\frac{1}{2}$ oz of bruised ginger, and boil slowly down to a quart; when cold, strain into a clean pot, add 3lb. of lump sugar; place on a slow fire, and stir till the sugar is dissolved and the syrup has just boiled. When cold, pour into a stone bottle, and keep it, lightly corked, in a cool cellar. The average dose is one tablespoonful, and to prevent griping a teaspoonful of syrup of white poppies should be added. The popular mixture of buckthorn and castor oil has already been noticed as Mild Purge on p. 10.

Calomel.—Acts as an emetic and purgative; it is at all times an uncertain and unsafe medicine for the dog. Youatt and others say it should never be given in larger doses than three grains. Country farriers and others often give it in much larger doses—indeed, by the rule of thumb—and the consequence is the death or utter ruin of many valuable dogs. As a remedy in the yellows and other affections of the liver, podophyllin, or “vegetable calomel,” is safer and more effective.

Camphor.—Calmative and antispasmodic. May be given in cases of excitement and restlessness, and also in severe diarrhoea. The dose is from two to eight grains.

Cantharides.—See *Spanish Fly*.

Cardamom Seeds.—Possess similar properties to carraways. The following is a useful cordial and stimulant for greyhounds and other dogs when severely run:—

Cordial Ball.—Take powdered cardamom seeds 1dr., cayenne pepper $\frac{1}{2}$ sc., oil of carraways (English) 10 drops, oil of cloves 5 drops, powdered gum acacia $\frac{1}{2}$ dr., made into a paste with honey or syrup. One-fourth for a dose, given wrapped up in an ounce of lean mutton.

Carraway Seeds.—Stomachic and cordial.

Carron Oil.—A most useful application to scalds or burns. It is made by mixing equal parts of raw linseed oil and lime water.

Castor Oil.—Purgative. Dose, from a teaspoonful to a wineglassful. It is a mistake to give very large doses, as such are apt to create vomiting and are useless, the excess being carried off by the bowels.

Cayenne Pepper.—Stimulant and stomachic.

Chalk, Prepared.—Antacid in its effects; it is particularly useful in diarrhoea, for which it may be given alone if nothing better can be conveniently had. Dose, as much as will lie on a shilling.

Chloral Hydrate.—Antispasmodic and soporific. May be given in cases of fits, also when the dog suffers great pain. Dose, from five to twenty grains, according to size of dog and the result it is desired to produce. The larger dose would induce sleep.

Chloroform.—Principally used as an anæsthetic in painful operations. It also acts as an anodyne and anti-spasmodic in colic, &c. As such it is generally given in the form of chloric ether, the dose of which is from ten to thirty drops in water or other fluid.

Cinchona, or Peruvian Bark.—This is a well-known medicine, and, as a tonic, suits the dog admirably. It is especially useful after distemper and other lowering diseases, and works wonders in getting dogs into high-class condition for shows or work. The following preparation of the bark is most convenient, being in a concentrated form, and will keep good for years:

Concentrated Bark Tonic.—Take concentrated decoction of yellow cinchona bark, compound tincture of bark, equal parts; dose, one or two teaspoonfuls twice daily in water, as a drench.

Clysters or Enemas.—These agents are mostly in the liquid form, and are administered for various purposes, as the softening and removal of hardened fæces, the allaying of spasm or colic in the bowels, the destruction of worms, for checking diarrhoea, and more rarely for nourishing the body. The forms for clysters will be found in the parts of the work treating of those ailments in which they are used. The means of injecting the clyster is usually the common bladder and pipe sold by druggists at 1s. each, or what is greatly better, an indiarubber bottle enema, which gives the operator greater power, and is itself less trouble, being self-filling.

Cod Liver Oil.—This well-known medicine is given to the dog in cases of debility and emaciation supervening inflammatory attacks, and to arrest the progress of chronic diseases of the respiratory organs. It is also given in scrofulous affections. The finest Pomeranian I ever saw, had, when a pup, free access to the droppings of a cod-liver oil tank, which he was in the habit of lapping regularly with every evidence of enjoyment. Excellent for ricketty and weakly dogs; but it is injudicious to give it to strong growing pups of the larger breeds, as it makes fat, and the pups get so heavy the legs often give way. Dose, from a teaspoonful to a tablespoonful. Large doses are a mistake, for the

stomach cannot assimilate much at once, and the overplus is carried off by the bowels.

Copper, Sulphate of (Blue Stone).—Externally applied, it is a mild caustic; internally administered, astringent and tonic; dose, from $\frac{1}{2}$ grain to 2 grains, but it is apt to cause vomiting. In applying it to proud flesh in sores, choose a crystal with a smooth surface, which wet and rub on the part, or scrape a little into fine powder and dust over the sore.

Cowhage or Cow Itch.—The stiff brown hairs growing on the pods of the plant *Mecuna pruriens*. It acts mechanically in expelling worms, but is an uncertain remedy. The dose may be a teaspoonful given in the morning fasting, and repeated three consecutive mornings, the last dose followed by a dose of castor oil.

Cream of Tartar.—A cooling laxative and diuretic medicine. Dose, ten to twenty grains, given daily.

Dandelion.—Given in jaundice, and other liver affections. The extract is the most convenient form, or the decoction made as follows may be given: Fresh dandelion roots, sliced, 6oz.; water $1\frac{1}{2}$ pints; boil slowly down to half a pint. Dose, half a wineglassful.

Digitalis.—See *Foxglove*.

Enema.—See *Clysters*.

Epsom Salts.—Purgative. Dose, one to three drachms. A convenient form for giving the salts is the ordinary black draught of the shops.

Ergot of Rye.—Useful in cases of protracted parturition. Five to fifteen grains may be given in a little warm water with a teaspoonful of brandy added. The dose repeated in an hour if needed.

Ether, Spirit of Nitrous (Sweet Spirit of Nitre).—Diaphoretic and diuretic. It is given in distemper, fevers, influenza, &c. Dose, half to one teaspoonful. The following is a good form of fever mixture, and may be used in the earlier stages of distemper:

Fever Mixture.—Take powdered nitre 1dr., sweet spirit of nitre $\frac{3}{4}$ oz., Mindererus' spirit 1oz., camphor julep $6\frac{1}{2}$ oz., mixed. Dose, two tablespoonfuls every four or six hours.

Ether, Spirit of Sulphuric.—A diffusive stimulant and anti-spasmodic. Dose, half a drachm to one drachm. In colic it should be given with equal parts of laudanum, and it must always be largely diluted with water or other liquid.

Fern—Male Shield Fern (*Lastrea Filix-Mas.*)—Anthelmintic. Male Shield Fern has been known and used as a remedy for worms since the first century of the Christian Era. The root, which is perennial, is the part of the plant used in medicine, and the best form in which to give it is the ethereal extract, the powder being very bulky, and also because there is often a difficulty in obtaining it fresh. It becomes inert by keeping. The dose of the powder is from one to three drachms. The dose of the ethereal extract or oil of male fern is from ten to forty drops. It is apt to irritate the stomach and produce vomiting, and should therefore be given in an emulsion, a form for making which will be found in the portion on Worms. Male fern is one of the most certain remedies for tape worm.

Foxglove (*Digitalis purpurea*).—The dried leaves of this well-known plant form a valuable therapeutic agent, but too powerful and dangerous to be trifled with, and its administration should be left to the professional man. It is a sedative. Dose, from half a grain to two grains.

Gentian Root.—Stomachic and tonic, and as such one of the most valuable canine medicines. The plant (*Gentiana lutea*) affording this medicinal root is a perennial which grows on the Alps and other mountainous parts of Europe. Gentian is given to the dog in the form of powdered root; dose, ten to twenty grains, or, which is more convenient, in form of the extract, dose of which is two to six grains. The following is a useful stomachic pill in indigestion:

Pill for Indigestion.—Take extract of gentian, 1dr.; powdered rhubarb, 1dr.; powdered ginger, $\frac{1}{2}$ dr.; mix, and make into thirty pills. Dose, one to three once or twice a day. Extract of gentian is also an ingredient in the tonic pills.

Ginger.—Cordial and carminative. Dose, two to eight grains.

Iodide of Mercury (Green).—This is almost a specific in red mange; it should be used in the form of ointment, one part of green iodide to seven parts of lard. Where the disease has spread over a large surface, it is advisable to take one portion of the diseased skin at a time, and rub the ointment well into each part on successive days. No loose ointment should be left on the hair. If this be properly done, any little the dog may lick off the skin will merely act as an alterative, and thereby assist the cure. When using green iodide of mercury ointment for red mange, it is advisable to give, internally, Fowler's Solution of Arsenic.

Iodide of Potassium.—An alterative and stimulant of the absorbents; its effect is to reduce glandular swellings, enlarged joints, and scrofulous tumours; it is given in doses of two to five grains in water or compound decoction of sarsaparilla, and, like all alteratives, must be continued some time to produce effect. When given internally, an ointment, made with one part iodide to seven parts of lard, should at the same time be applied daily with friction till the swelling be reduced.

Iodine.—In form of tincture this is used to disperse glandular swellings and chronic enlargements. The part should be painted with it daily.

The green iodide of mercury is not to be confounded with the red or biniodide of mercury, which is a powerful blister and, as such, is used for the ox and also for the horse, on account of its leaving no blemish.

Iron.—A tonic in anæmia or want of blood. The preparations of iron chiefly used are the sulphate (purified green copperas) and the saccharine carbonate. The dose of the sulphate is from half to one grain, given with gentian, &c. The following is an excellent form of pill for dogs recovering from distemper and other lowering diseases:

Tonic Pills.—Take quinine, 1gr.; sulphate of iron, $\frac{1}{2}$ gr.; ginger, $1\frac{1}{2}$ gr.; extract of gentian, 2gr.; made into one pill. Dose, one or two twice a day.

The dose of the saccharine carbonate of iron is from five to fifteen grains; it may be given in a little honey, and placed well back on the tongue.

Jalap.—A brisk purgative ; dose, from ten to twenty grains.

Kamala.—Vermifuge. A fine granular powder, orange-red in colour, consisting of minute glands adhering to the capsules of the *Rottlera tinctoria*. The dose is one and a half grains to two grains for each pound weight of the dog, up to a maximum dose of one and a half drachms, for large dogs. This is an excellent worm medicine for the dog.

Kouso.—The flowers and flower stalks of *Brayera anthelmintica*, a rosaceous plant which grows in Abyssinia, and has there been long used as an anthelmintic. Dose, quarter ounce infused in two ounces boiling water till cold.

Laudanum.—See *Opium*.

Lead, Acetate of (Sugar of Lead).—A solution of this, two or three grains to the ounce of distilled water, is used as a wash for the eyes, &c. Internally it is given as an astringent and styptic in bleeding from the lungs, bloody urine, and in dysenteric diarrhoea, when the evacuations are tinged with blood ; for the latter purpose half to two grains may be given with laudanum. "Stonehenge" prescribes the following :

Styptic in internal bleeding.—Acetate of lead, 2gr. to 3gr. ; tincture of matico, 30 to 50 drops ; vinegar, ten drops ; water, one ounce ; to form one dose, which must be given two or three times a day.

Lead, Extract of (*Liquor plumbi diacetatis*, or Goulard's Extract).—Used as a sedative and cooling lotion, as follows :

Cooling Lotion.—Extract of lead, 1dr. ; spirit of wine or brandy, 2dr. or 3dr. ; distilled water, one pint.

A valuable liniment for excoriated surfaces, or after the application of a blister, is made thus :

Liniment for Excoriated Surfaces.—Extract of lead, $\frac{1}{2}$ oz. ; olive oil, 3oz. ; mix by well shaking.

This liniment is also an excellent application for canker of the ear ; when the discharge is offensive a few drops of glycerine and carbolic acid should be added.

Lime.—Freshly burnt (unslaked) lime is used in making the lime and sulphur or mange lotion, a form for which has been given in a chapter on Mange.

Lime water is made by putting a piece of unslaked lime into a vessel of cold water, shaking it briskly, and allowing the undissolved lime to subside, when the clear lime water can be poured off. Carron Oil (the *Lini-mentum calcis* of the old pharmacopœias) is made by mixing equal parts of lime water and linseed oil, and is one of the best applications to scalds and burns. It takes its name from having been long used for that purpose at the Carron Iron Works.

Magnesia.—Laxative. Given with milk of sulphur for piles ; dose, one to two scruples. If continued too long it is apt to form concretions in the bowels.

Mercury (Quicksilver).—The preparations of mercury used in canine practice are principally : Calomel ; dose, from half to two grains. Grey powder (mercury and chalk) ; dose, one to four grains. White precipitate

(ammonic-chloride of mercury), rubbed into the coat to destroy lice and tick.

Olive Oil.—Laxative. Dose, one, two, or three tablespoonfuls.

Opium.—Narcotic and anodyne. Dose of the powder, half to two grains.

Opium, Tincture of (Laudanum).—This medicine is of great utility; it is given in diarrhoea, colic, coughs, &c., and enters into the compositions of many lotions and liniments. The dog requires an exceptionally large dose of laudanum; for a large dog, a teaspoonful; smaller dogs, and young ones, in proportion.

Phosphorus and Phosphates.—Phosphorus, in the form of compound phosphorus pills, is often of great benefit in cases of general debility, and proves of great service to dogs kept at stud.

Pomegranate Bark.—The powder is useful in expelling worms. The dose is from twenty to thirty grains.

Potash, Chlorate of.—A saline alterative. It has the effect of counteracting putrescence of the fluids in typhus, &c., and is of great value as a remedy in distemper, for which the following mixture is recommended:

Distemper Mixture.—Take chlorate of potash, 2dr.; Mindererus' spirit, 1oz.; sweet spirit of nitre, 2dr.; tincture of henbane, 2dr.; water, 2½oz.; dissolve the potash in the water and add the other ingredients. Dose, from a teaspoonful to a tablespoonful, given every four hours, in a little additional water or gruel.

Potash, Nitrate of (Saltpetre).—Diuretic and diaphoretic. Dose, three grains to ten grains. Meyrick recommends it in doses of five grains to ten grains, with a teaspoonful of flowers of sulphur, as an alterative in skin diseases.

Precipitate, Red (Nitric Oxyde of Mercury), Poison.—It is used externally in form of ointment to old and indolent sores, which it stimulates to healthy action. To make the ointment, mix one part with seven parts spermaceti ointment.

Precipitate, White (Ammonic-Chloride of Mercury), Poison.—Used to destroy ticks, lice, &c. To effect this purpose it should be well rubbed into the coat and skin in a dry state, and brushed out in a few hours; it is advisable to muzzle the dog while the precipitate is on him, and he should be kept dry the while; the precipitate should not be used where the skin is much broken.

Quinine.—Tonic. Dose, one to three grains.

Rhubarb.—Purgative, stomachic, and tonic. Chiefly used for the dog as a stomachic in digestion, &c. Dose, two to eight grains.

Sal Ammoniac.—Used in solution as a cooling lotion to bruises and inflamed parts.

Salt, Common.—Emetic. Give one or two teaspoonfuls in quarter to half pint warm water. It is also resorted to as a vermifuge, but is uncertain.

Santonine (Worm Seed).—The seeds of Tartarian Southernwood is an

old and favourite worm medicine. Santonine is the active principle. The dose is from one to four grains.

Sarsaparilla (Compound Decoction of).—An uncertain alterative. A good vehicle for giving iodide of potash.

Senna Leaves (Infusion of).—Given as a purgative, with Epsom salts, in form of black draught.

Silver, Nitrate of.—The fused form (lunar caustic) is the best and safest caustic. This is sold in convenient wooden pencil cases, which can be carried in the waistcoat pocket, and all having much to do with dogs should be provided with one for their own protection. Nitrate of silver is given internally in chorea. Dose, one-twelfth to one-eighth grain, made into a pill with bread crumbs.

Spanish Fly.—Used as a blister, which see; also in the form of tincture (cantharides), added to stimulating liniments, to increase and quicken their action. It is also used as a stimulant to the growth of hair, for which purpose one part may be added to seven parts of glycerine, and the mixture well rubbed into the skin once or twice a day.

Sulphur (Brimstone).—Laxative. Dose of the flowers, a teaspoonful; equal parts by weight of milk of sulphur and cream of tartar form a useful cooling medicine to dogs in confinement, dose, half to one teaspoonful daily. The practice of putting a lump of roll sulphur in the water placed for dogs is valueless, sulphur being insoluble in water. Sulphur vivum, or black sulphur, is the residue left from the sublimation of sulphur; this is by many people preferred to pure sulphur as a local application, but wrongly so, as it is comparatively useless, and often contains traces of arsenic.

Sweet Spirit of Nitre.—See *Ether*.

Syrup of Phosphates, commonly called Chemical Food, consists of phosphates of soda, lime, potash, and iron, made into a syrup with sugar. It is excellent in rickets, weak legs, and general debility; dose, from a half to two teaspoonfuls, according to size and age. It should be given two or three times a day in food.

Turpentine, Spirit of.—Turpentine is given as a vermifuge, but there are safer remedies. When given it should be in form of emulsion, with yolk of egg, mucilage, oil, &c. Venice turpentine, a combination of spirit of turpentine and rosin, is safer, but less effective. The following is useful as a

Liniment for Stiffness, Sprains, and Rheumatism.—Turpentine, rape oil, hartshorn, and laudanum, in equal parts.

Zinc, Sulphate of.—Used as an astringent lotion, given internally in chorea; dose, one grain to three grains in a pill twice a day. In doses of fifteen grains to twenty grains it acts as a speedy emetic.

MODES OF ADMINISTERING MEDICINES.

SOME medicines are really taken with the food, and when this is the case it saves much trouble and needless alarm and irritation to the dog.

In a little savoury broth or porridge most dogs will take castor oil, olive oil, cod liver oil, syrup of phosphates, Fowler's Solution of Arsenic, &c., and many powders, such as areca nut, kamala, santonine, &c.

Where powders are refused in the food they should be mixed with a little butter, lard, honey, or syrup, and placed well back on the tongue. To do this, force the mouth open by pressing the lips against the teeth and gums, and the medicine can then be placed on the tongue by an assistant. With large, powerful, and restive dogs the mouth can be held open by means of a towel twisted round the upper jaw. With small dogs an assistant is not needed, as they can be held tightly between the knees whilst giving the medicine. As soon as the medicine is placed on the tongue the dog's mouth should be closed and held shut till he is seen to swallow, but the mouth must not be so held as to interfere with his breathing through his nostrils.

In giving a pill or bolus the same method should be adopted.

In administering liquid medicines which the dog will not take voluntarily it is necessary to drench him. To do so the ordinary plans are to use a spoon, or recourse is had to an earthenware or strong glass bottle, such as a ginger beer or soda water bottle. With the spoon the medicine is generally spilt, and the use of the bottle is fraught with great danger, and that from two sources: first, the medicine is delivered from the bottle too fast, and in a manner that makes it impossible for the dog to swallow, and choking is the result; and, secondly, there is very great danger of the bottle being shivered to pieces between the dog's powerful jaws, lacerating the mouth, throat, &c., and causing serious and dangerous wounds. To obviate these evils, I some few years ago invented a dog medicine measure and drencher, an article included in *The Field Dog Medicine Chest*. It consists of a glass bottle, strongly made, of about 3oz. capacity, the mouth just wide enough to be easily covered with the finger; the bottom is drawn out, and forms a rounded nozzle, over which is stretched and tied a short flexible indiarubber tube, into the extreme end of which is inserted a bone tube about $1\frac{1}{2}$ in. long. The bottle is graduated to correct measurement of teaspoonfuls, and tablespoonfuls, and in case of a number of patients, several can have their allotted doses given without re-measuring or re-filling the bottle. To use the drencher, the flexible tube is doubled up until the quantity required has been put into the bottle; the forefinger of the right hand is then placed on the mouth, which completely controls the flow of liquid through the tube, which is now loosed, and the left hand of the operator left at liberty to insert the end with the bone tube in the back part of the dog's mouth; the operator, having full command of the contents of the bottle, can, by raising his fore-

finger, let it run out by degrees as he sees the dog swallow it. Candour compels me to admit that this, like many other inventions, is better in theory than practice. It is, however, of value, particularly in giving medicines and strengthening food, such as beef tea, to dogs that are greatly exhausted by disease and have difficulty in swallowing. The drenchers can be purchased from Messrs. F. Green and Co., wholesale druggists, Birmingham, who get them up.

Another way of giving liquid medicines is to gently raise the animal's head and form a pouch by drawing outwards and slightly upwards the lips and cheek at the corner of the mouth, and gradually pouring the medicine into the funnel thus formed. This is a good way of giving medicine, but slow, and requiring patience.

The dog's stomach being very sensitive, many medicines are at once rejected, and to prevent this it is sometimes necessary to tie him up for half an hour after giving the dose, with his head in a slightly elevated position; but by giving such irritating medicines as turpentine, oil of male fern, &c., in a demulcent, as previously advised, this course is frequently unnecessary.

DISINFECTANTS.

THE value of disinfectants as health preservers is becoming more and more appreciated, and their value in the kennel can scarcely be overrated.

Of course it is all important a kennel should be well drained and kept clean, but still, to keep it perfectly free from putrescent effluvia and to destroy specific contagion, disinfectants must be resorted to.

It would be tedious, and it is quite unnecessary, even to enumerate the various disinfectants. I will, therefore, briefly refer to a few I consider most suitable for the kennel, omitting several excellent in themselves, but too dangerous to be trusted in the hands of many who have the cleansing of kennels.

One thing of importance in the use of disinfectants must be noted: It is wasteful, and defeats the object of their use when thrown down in quantities irregularly; the equal distribution of them over the whole surface of the kennel at regular intervals is both the cheapest and most effectual way of keeping disease at bay.

Carbolic Acid has been for many years popular. Calvert's and M'Dougal's are the two best makes, and care must always be taken to use it properly diluted.

Chloride of Lime.—One of the best kennel disinfectants; it should not be mixed with a little water and thrown down in a half solid form, but when the kennel is of considerable size, get an old petroline barrel, put 7lb. into it and fill up with water; stir it well and apply the clear liquid with a rose watering can. Of course the strength must be kept up by adding fresh chloride of lime from time to time.

Jeyes' Perfect Purifier is a non-poisonous disinfectant, well suited to kennel use.

Sanitas is the name given to a comparatively new disinfectant, obtained by the atmospheric oxydation of turpentine, and containing peroxide of hydrogen and camphoric acid. It was discovered by Mr. Kingzette, and is manufactured by the Sanitas Company, London. I have used it for a long time, and believe it to be a thoroughly efficient disinfectant and the best suited to kennel use.

Sulphurous Acid Gas.—When there has been distemper or other contagious disease lingering in a kennel for some time, this may be used with advantage. It consists simply in burning the flowers of sulphur. Take a common frying pan, or some such iron vessel, get it red hot, if possible; on it place the sulphur, which must be set fire to and burnt, the vessel being placed on bricks in the centre of the kennel floor, and, all the doors and apertures closed, the fumes will penetrate to every crevice. The dogs must not be returned to the kennel until it has been thoroughly freed from the gas by ventilation.

TREATMENT IN CASES OF POISONING.

PERHAPS none of our domestic animals are so liable to suffer from the effects of poisonous substances as the dog; his restless and inquisitive nature, and that inveterate habit of routing in every accessible hole and corner, lays him open to it, whilst the sporting dog, on duty in places where unsportsmanlike practices prevail, is exposed to special danger.

Dog-poisoning is either the result of design—where some envious or malicious and cowardly person is the perpetrator—or it is the result of the ignorance of persons administering to the animal drugs of the nature and action of which they are ignorant; or from accident, which, properly interpreted, in most cases means culpable negligence on the part of those having to use poisonous substances for the destruction of vermin or other purposes. To this last cause the majority of cases of poisoning may be traced, for although the proverb says “Familiarity breeds contempt,” it does not apply here; for whereas there are none so careful of poisons as those who have the daily handling of them, and best know their baneful power, yet by many of the general public they are used and left about with quite a shocking carelessness.

Against the malicious poisoner it is difficult to provide—being rarely forewarned, we cannot be forearmed; against the ignorant practices of the empiric the dog owner can defend himself if he will; and against accidental poisoning much can be done by using reasonable care when it is necessary to employ poisons, and by keeping them properly labelled and in proper places when not in use.

It may be of service to some readers to briefly refer to some of the more common and popularly known poisons from which our dogs are most likely to suffer, and I think the following will cover the great majority of cases: Arsenic, cantharides, carbolic acid, corrosive sublimate, phosphorus, and strychnine.

As a general rule for distinguishing between the evidence of poisoning and the symptoms of disease, the suddenness of the attack must weigh largely; and by tracing where the dog has been, and what he has or is likely to have picked up, a pretty accurate conclusion may be arrived at.

The first step to be taken in most cases is to freely empty the stomach by means of emetics, as tartar emetic, sulphate of zinc, ipecacuanha wine, or, if none of these are at hand, by drenching with lukewarm water, and afterwards giving the antidotes indicated, if procurable; but, under any circumstances, give demulcents, such as boiled flour and milk, starch, gruel, milk and eggs beaten up, olive oil, &c., in considerable quantities. A dose of castor oil may also be given, and, if the dog suffers much pain, a dose of opium or laudanum every three or four hours. Where great depression and weakness follow, stimulants, as ether, wine, or brandy, should be given in small quantities at frequent intervals.

Arsenic is used in wheat dressing, and also to poison rats, mice, and

other vermin, and, in this way, it is frequently met with in and about country houses.

Symptoms: Great heat and pain in the stomach and bowels, sometimes accompanied with swelling—the belly being very tender to the touch—great thirst, frequent vomiting, and retching, more or less discharge of a frothy saliva, frequent evacuations of fluid dark coloured matter, often marked with blood; the animal soon loses muscular power to a great extent, showing an indisposition to move; the tongue, lips, &c., become red and swollen, and the breathing more and more laboured and painful.

Antidotes: Ferrugo or hydrated sesquioxide of iron, twelve parts of which combine with one of arsenic, forming an insoluble compound; also light magnesia, which will remove 1-25th its weight of arsenic from its solution in water.

Cantharides.—This is given by ignorant men for purposes which are defeated; and, being an acrid, irritant poison, produces dangerous results, frequently causing inflammation of the urinary organs.

Symptoms: Violent thirst, copious discharge of bloody mucus from the stomach, mixed with which may be seen the shiny green particles of the flies; there is great pain in the loins, swelling and inflammation of the genital organs, pains in the bowels, and bloody stools and urine.

Antidotes: When this is known or suspected to have been given, an emetic should at once be resorted to, and the dog should afterwards be drenched with demulcents, and a dose of opium given every three or four hours.

Carbolic Acid.—This produces baneful effects, even by absorption through the pores of the skin, when too freely used. It causes great prostration, with trembling of the whole frame.

Symptoms: Extraordinary depression of the vital powers; there is general shivering and almost constant trembling of the limbs, and a palsied motion of the head. Bleeding at the nose is a frequent symptom, and the discharges from the bowels are also often stained with blood; the countenance of the sufferer is expressive of a most helpless and painful state.

Antidote: The proper treatment consists in placing the dog in a warm bath, using friction the while, and administering stimulants, such as ammonia, ether, brandy, &c., which should be given in water or gruel.

Corrosive Sublimate is used for a variety of purposes about farms, although for most of the purposes to which it is put a non-poisonous article would answer as well or better; it is also used for destroying vermin. Corrosive sublimate, phosphorus, and strychnine each enter into the composition of paste and powders largely sold for the destruction of vermin, and it is when so used, being placed on bread and butter, bits of meat, &c., that they are most likely to be picked up by the dog.

Symptoms: Violent vomiting and purging of stringy and offensive matter, the belly distended and painful to the touch, the urine suppressed, cramp and twitches in the limbs, and frequently paralysis ensues.

Antidotes: Tartar emetic, as an emetic; white of egg, followed im-

mediately by infusion of galls; milk or gluten of wheat. Of the chemical antidotes, the albumen of eggs is by far the best; the white of one egg is sufficient to neutralise or render insoluble four grains of solid bichloride of mercury.

Phosphorus.—*Antidote*: Calcined magnesia, with diluents and demulcents given in quantity.

Strychnine.—*Symptoms*: Severe, acute pain, making the dog utter sharp cries; frequent twitchings and jerkings of the head and limbs, the fore and hind legs are drawn towards each other, and the back is arched; the fits of cramp and twitching are intermittent, but are readily brought on by a touch or even a sudden noise; foaming at the mouth is also a frequent symptom.

Antidotes: An emetic, which should immediately be given, and afterwards butter, lard, or other fat in considerable quantities.

The subject is too abstruse to be dealt with fully here. I merely attempt to point out a general line of treatment to be adopted till professional aid can be obtained—when that is considered necessary—and which will tend to alleviate the animal's sufferings should it fail in averting fatal consequences.

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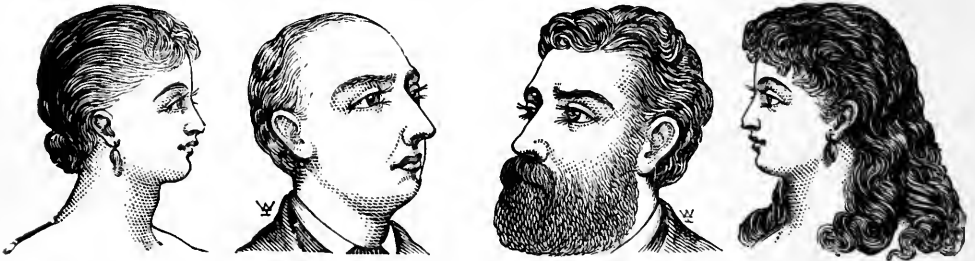
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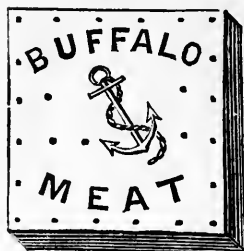
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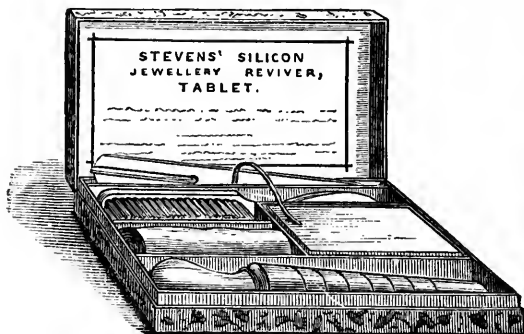
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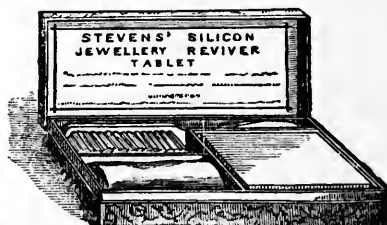
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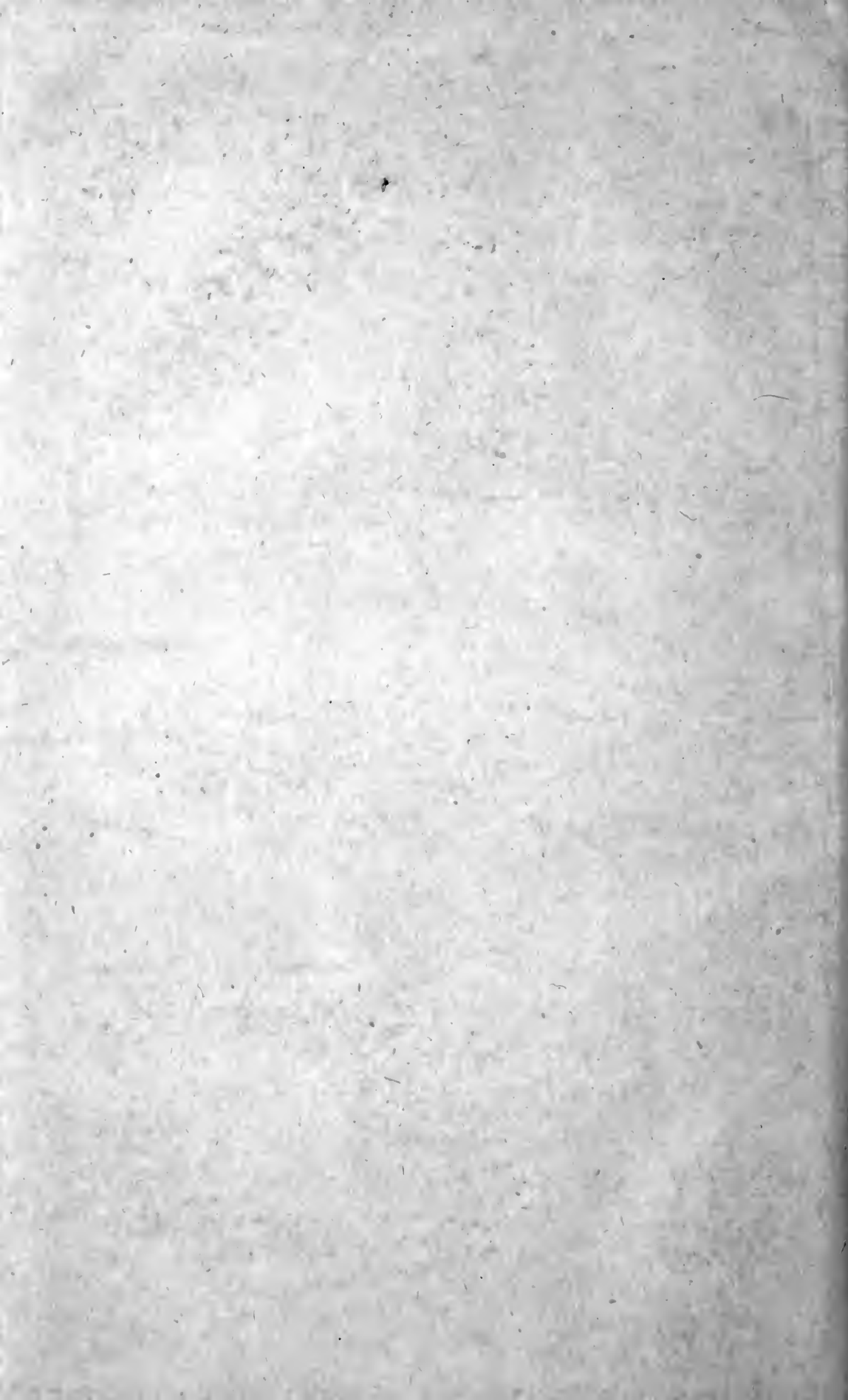
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