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# OUR HOUSEHOLD FRIEND THE DOG.



## Hydrophobia:

BY

BAITHASAR F. JUDY,

*Physiologist and Pathologist.*

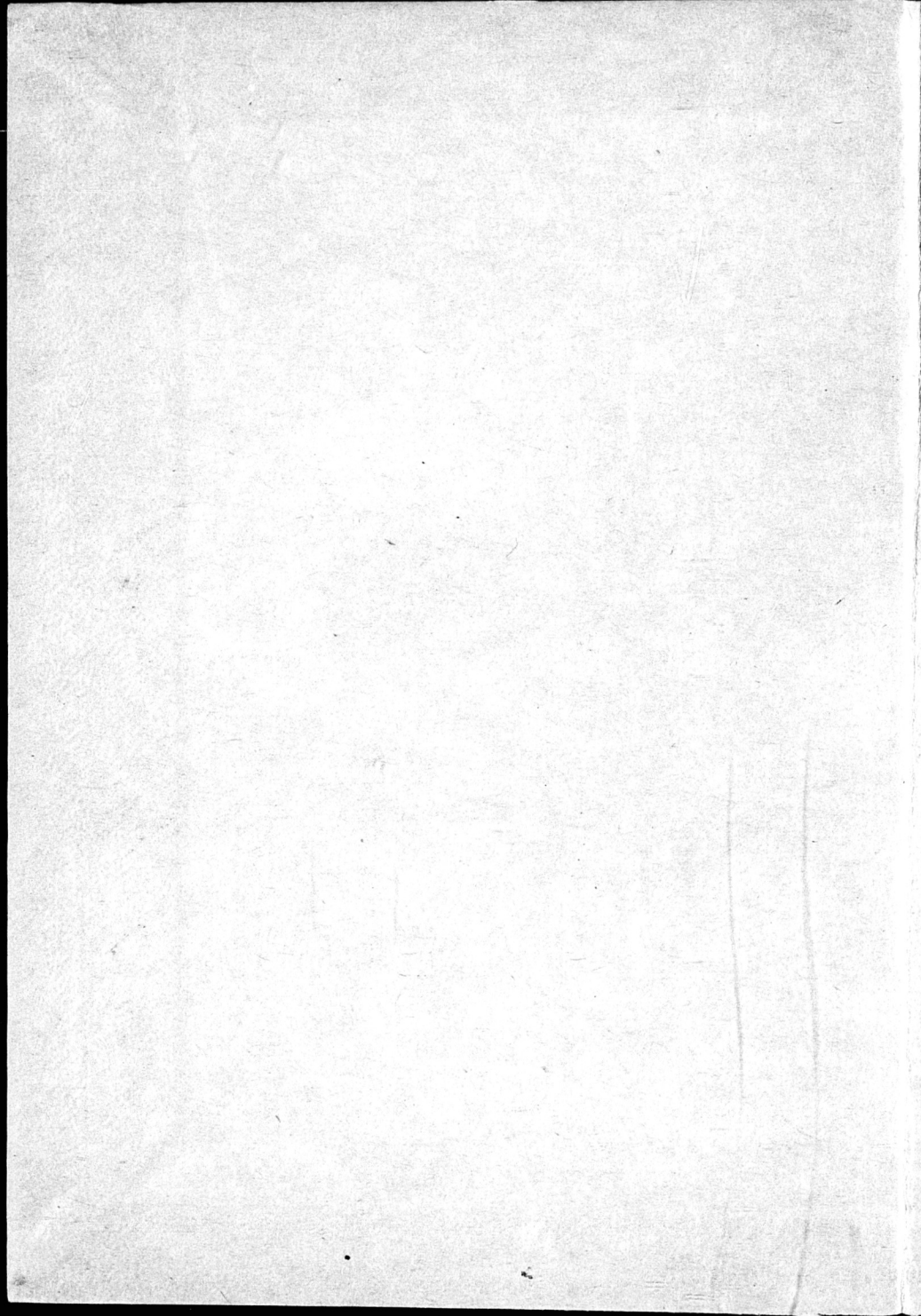
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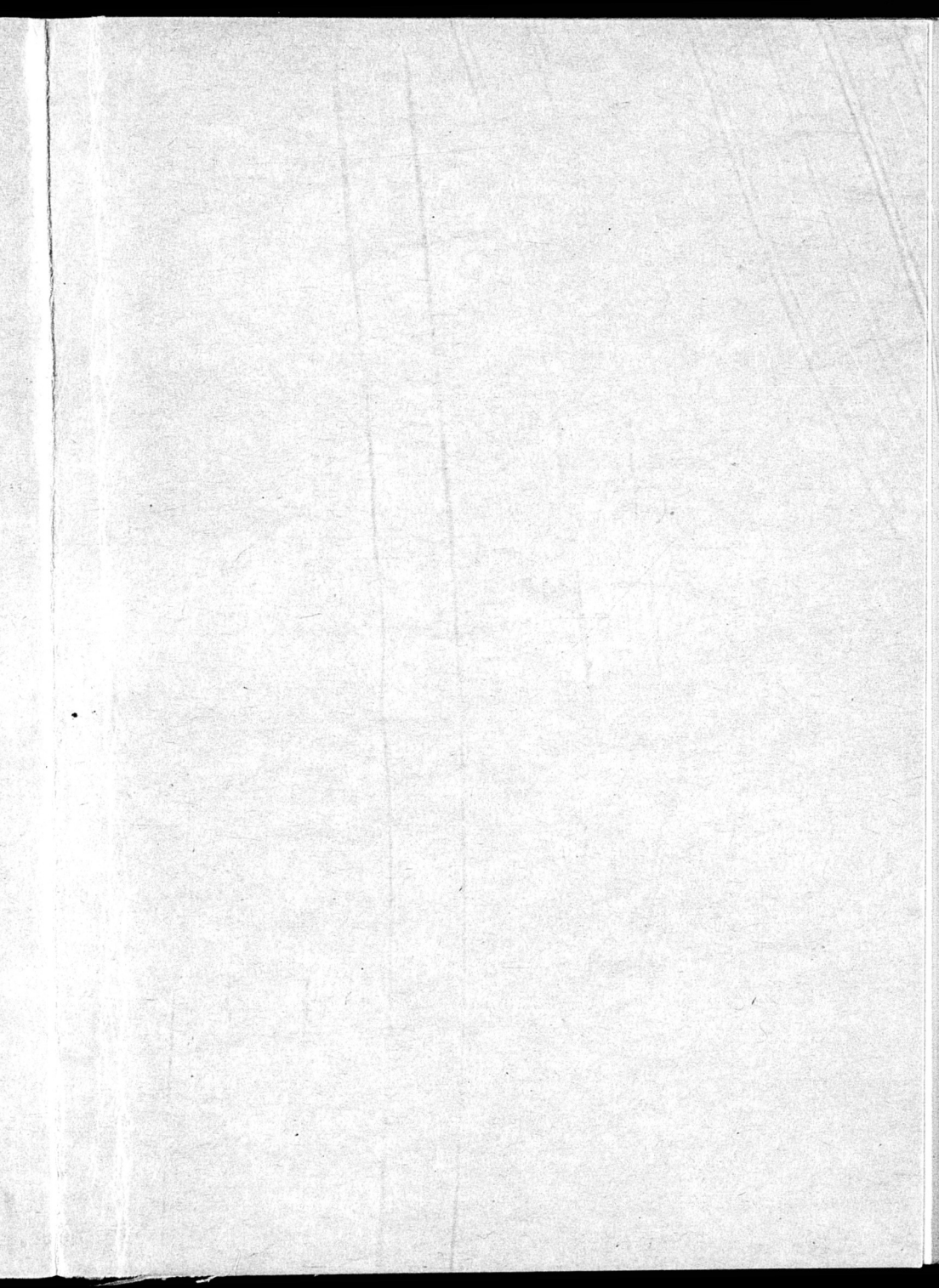
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OUR HOUSEHOLD FRIEND,  
THE DOG.

HYDROPHOBIA:

ITS PRIMARY CAUSE,

WITH RATIONAL SUGGESTIONS FOR PREVENTING  
ITS SPONTANEOUS ORIGIN, AND CONSEQUENT  
TRANSMISSION.

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What is the Cause of Spontaneous Rabies?

HOW IT MAY BE PREVENTED.

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THROUGH the solution of the above questions, it is more than probable that a systematical cure of contagious hydrophobia may ultimately be reached.

It was in the Fall of 1876, I first lit upon the theory which led me to impute the disease to its primary cause. After a careful examination of the reasons which led me to entertain it, I could not avoid the conviction that pathology and fact both corroborate it. If mankind would act strictly in accordance with the deductions consequent upon my theory, this fearful disease might be prevented in the animal world, so that a bite by a dog or a cat might literally be of no more danger than the scratch of a nail.

At present we neither know whether diseased dogs are to be reckoned by tens or by hundreds—why or indeed, whether some species of dogs are more liable to be affected by the disease than others—whether any bite, save that of a diseased animal may cause death—whether spontaneous rabies is less deadly and as much less evident than it is when transmitted;

while at the same time we are ignorant whether it may not be neutralized and overpowered by the force of the animal vitality, or under favorable circumstances, checked or absolutely cured in its nascent state.

Let us compare it with other diseases.

Does death occur sooner or more certainly to a horse affected with the glanders or to the human being who may be infected with the morbid mucus, through a wound on his body? Which is worse? a disease, which consists in a morbid secretion by the mucous membranes having its seat where the secretion of the virus is, or the *effect* of its transmission to the human body through a place deprived of its cuticle? Any medical man must know that such a case of transmitted disease is far more powerful than the original one.

I would be far from ridiculing what I do not understand. Consequently I will not say what I think of "the madstone theory" which was believed in and practised in New York, lately. At least, the following report of it was given in the "Sun Beams," some time in April of the present year;

"A madstone, supposed to prevent hydrophobia, is being used on Robert Peterson, who was bitten in several places by a rabid dog. The mode is to make incisions over the scars that the wounds left, and apply the stone, which clings a while, and then drops off. Several physicians are watching the test, and will report the result for the information of their pro-



fession. A man, bitten by the same dog that bit Peterson, has died."

If such treatment could ever have been successful, it must have been a purely sympathetic cure. In other words, the vital functions of the patient were sufficiently excited by the imagination to neutralize the morbid activity of the virus.

Now, this idea I combat openly. No human being can die from hydrophobia without positive contagion. Nor, when inoculated with it, can the virus be neutralized by the action of sympathy or imagination.

Physicians have experimented with the mucus of a dog, whose bite had caused death to a human being, on the body of a live rabbit by inoculation. It produced no effect. They intended to show, by this means, that the disease was purely one of the imagination. But, how could they be certain that the rabbit was a fair test? Living entirely upon food of a vegetable nature and being endowed with powerful digestive organs, it could scarcely serve as the test of an organic animal poison, generated in the digestive organs of a carnivorous animal.

Do we die of fright in periods of general malaria or contagion? Children, who know nothing about the diseases which may be prevalent, are even more liable to death from them than grown persons. Yet it is to be admitted, that fright may predispose the human being to contagion by weakening his normal vitality and thereby allowing greater activity to the

morbid organism. The effect of fright is opposite to the effect of belief in sympathy. Why should not a correspondent theory be applied to one as to the other, respectively ?

All persons do not develop the same symptoms in the same disease. A delicate and weak organism dies more quickly than a strong and sanguine one. Why should it be different in hydrophobia ? There is a struggle to control the physical functions. The morbid vitality originating in a minute portion of transmitted virus, and increasing gradually in strength and quantity, re-acts against the normal vitality until the patient finally succumbs.

One of keenly impressive organism may suffer mental depression from the time of being bitten until the absolute appearance of the disease. Another may continue apparently uninfected for a long time, until some extraneous occurrence forces his imagination into unusual activity. While a third may forget all about the bite until the disease develops itself, and if a sufficiently long time has elapsed, be positively unable to remember any cause for it.

In each case, the symptoms must differ according to the vital resistance to the poison, of the patient's mental and physical organism.

Sometimes the virus is so quickly absorbed that there is scarcely any time for cauterisation unless it is done immediately after the bite. Sometimes it will lie dormant in the neighborhood of the bite, as long as the patient's vitality is unimpaired, entering

into an infectious activity, as soon as his vital power of resistance is in any way weakened.

In fact, while the distraction of mental occupations may lessen the symptoms, it does not check the actual power of the virus. Imagination plays no material part in the disease, except in hastening the crisis and lessening the resistant power of the patient. The theory of pure fright without contagion is absolutely untenable, when we see so many contagious diseases develop themselves in grown persons and children without either of them being conscious of their condition.

The great difference between spontaneous and transmitted rabies is shown by the fact that nearly all cases of contagion terminate fatally, while many animals which seemed to be sound have inoculated human beings with the germ of hydrophobia. These were suffering from what I call "latent rabies." This exists in the chyle and the saliva, originating spontaneously, and as these are the digestive agents, it may be overpowered in them by the regular digestive functions, if these are stimulated by good food and fresh herbs when available. At this "latent" period of the disease, it only manifests itself in nervousness. We have no recorded test showing whether the mucus of "latent rabies," or indeed any rabies at all transmitted from mouth to mouth would cause death. I myself must believe it would have no effect on a strong and healthy vitality, while it might produce a slow one upon a vitality in any way weakened by

sickness or want of sufficient food. In the former case, it is more than probable the digestive power might dispose of the virus without injury to the animal health.

Many diseases affect the nerves indirectly, especially those diseases connected with the condition of the digestive organs.

Are we then to conclude they lie in the nerves? Certainly not! Why then should they do so in hydrophobia? This theory I hope to break up. If we knew how to cure hydrophobia, now, it would be done empirically. According to my theory, if done at all, it will be done systematically. I believe the cure of contagious rabies to be uncertain but not impossible. The spontaneous kind can certainly be conquered by medical treatment. But everything should be done to prevent its occurrence, and this is the real way as far as possible to eradicate this disease.

The old proverb says, "an ounce of prevention is better than a pound of cure," and with this disease it is worth incalculably more. It will save the family all the anguish, and the medical man all the hopeless effort which cases of this disease must at present invariably produce, while remorse at its spontaneous occurrence, and diffusion will be entirely prevented.

The masses of mankind are to a certain extent indifferent to danger. They are however less so, when they see the possibility of avoiding or conquering it.

Spontaneous rabies in its development is a putrid disorganization of the chyle and saliva, which like

all destructive processes in animal matter, generates a morbid animal organization of independent generative power that interferes with the patient's regular vitality, causing symptoms of more or less pain and occasional spasms.

Regular vitality, the normal power of which this putrid disorganization is the chief antagonist, can be successfully preserved only by the regularity and activity of the bodily functions, or in a diseased state by such antiseptic agents as do no injury to the gastric functions themselves, as well as wholesome and rational food adapted to their condition.

The preference for antiseptic and stimulating agents to all others, arose from the prevalent belief that most of the diseases with which mankind is afflicted were generated by infection or impaired vitality. Investigation into the nature of the gastric functions, only, is necessary to corroborate this theory and explain the nature of spontaneous hydrophobia.

That putrid disorganization is the root of all contagious disease, and is "always ready for action," is a certainty.

Whether sperms in the air, originated in one place or generated by one soil, change their effect or nature by being wafted to another, or whether they are differently organized, settling harmlessly or not according to circumstances, is here a purely accessory theory. I wish to demonstrate that destructive animal agents are always ready for action, and can only be made innocuous by neutralization, by active

and effective opposition of the higher animal's regular vitality, or by antiseptic agents.

When fresh fruits are bruised or crushed, but a brief time elapses before the process of fermentation sets in. I cite this, because it is one of the most striking proofs that the destructive agents of such disorganization, are always at hand, in readiness for a good soil to operate on.

We are told by the scientist that fermentation is due to the existence and interference of parasitical vegetable matter. On the other hand, I say that it is the result of an animal organism. No living vegetable matter could exist in sour juices, so sour as they are in the temperate zone after a cold summer. It would not be destroyed by the action of neutral sulphurous alkalies, nor by silica, nor by mustard, all of which are antiseptics of the kind that only destroy animal microscopic organism.

Now the putrid disorganization of the gastric juice in spontaneous rabies, is due to the fact that dogs, cats, wolves, foxes, and sometimes even poultry have to subsist occasionally on irrational food.

This disease in the carnivorous animal is what we name hunger-typhus in Germany, when occurring in mankind.

It has been named, perhaps rather erroneously, hydrophobia, because the patient, man or animal, craves liquid to quench the burning sensation in its throat or stomach, while the pain which the movement of the inflamed muscles creates, renders the swallowing

any liquid an actual impossibility. The mere sight of water will throw a man in the worst stages of the disease into convulsions, while an animal will run away from it. This pain is due to decomposition accompanied by inflammation, the principal and perhaps unique development of which appears to lie in the stomach and throat, in spontaneous as well as contagious rabies.

In the first stages of the disease, men and dogs crave drink because they feel the burning sensation to which I have alluded. They are astonished to find they are unable to touch the liquid. They try again and again. But the pain of each exertion becomes worse and worse, until the torture of the attempt and failure produces such intensity of agony that the man feels death would be a positive boon.

Food is irrational and unwholesome when it lacks one or more of the constituents which are indispensable to the ordinary regular digestive functions. Food deprived of its juices by boiling, is very bad. The juice or soup is better. Neither alone is sufficient. Ale drinkers get fat, but cattle fed on the refuse from the brewery are emaciated, while a man who might live upon both would generally be in capital condition.

Our nature demands mixed food. The different constituents to build up health, some of which may be wanting in one class will be supplied to the system by another. Moreover taste is an absolute and sure

guide to that we need. Beside solid and extracted substance, the animal organism requires fat.

Its proportions will of course differ according to climate and constitution. Among dogs, it varies according to species. Their only uniformity in eating is that they can never have too much. In hot climates, fat may be nearly although not wholly replaced with sugar or sweet fruits, which most natural food is never devoid of fat.

Every animal needs just as rational and complete food as man, although the constituent parts of it will vary according to its genus. Dogs are no more subject to disease, and to this disease especially, than other carnivorous beasts. They are indeed of the same class although they have been domesticated.

Most dog owners feed their dogs upon what they call "good-enough" food. However this "good enough" food is frequently nothing better than "extracted trash," that ought to be mixed with some fat and flour, bran or bread, being seasoned with salt. Such food as this will keep them alive. But if they get nothing more than this "good enough" food they will hunt in the refuse of butchers' shops, or in the heaps of garbage thrown out from kitchens for a bit of stinking sinew or a stray bone to supply its deficiency. If not, living miserably, running about the streets, emaciated, feeling a burning, craving emptiness in their stomachs, the contents of which are very different from what animal nature positively demands, pu-



trid disorganization must at last commence. This is the beginning of the disease.

At first, it is unnoticed, and may remain so, as long as there is no evident reaction of the generated disorganization against the regular functions, especially the nervous system. Its progress might even yet be readily checked, if good food with fresh herbs, which act as antiseptics, were supplied to the animal. It is no shallow or foolish public belief that dogs are dis-tempered when they are seen picking fresh herbs. They are led to do so by their natural instinct, and not by a ribbon or a cord.

Were the larger carnivorous beasts fed on the same principle as too many of our dogs are, they would speedily go mad. While, if our neglected dogs did not help themselves by picking up half-picked bones, heads of fish, lobster-shells, and other nutritious waste, which they never find under the roof which shelters them, cases of hydrophobia amongst them and ourselves would indefinitely multiply. Dogs "should be fed upon rational and sanative food," with full constituents of meat, mineral and organic extractive matter and fat. If bread, flour or bran are supplied them, these ought to be made suitable not to their owners' fancy, but to the necessitated want of this domesticated carnivorous beast.

So long as a lump of stale bread—"wait, till it gets hungry. Then it will eat it,"—a well cleaned bone, a piece of sinewy meat boiled till all that was good in it is boiled out, or some stale potatoes, are

all that is given it, we may every now and then have a case of spontaneous rabies. Nay! We should, if there were not more than a poor hundred of dogs left alive in the Temperate Zone.

If a dog got roasted waste sufficient for its natural need at home,—I have heard this termed “actual voracity”—and boiled waste in the garbage, they would be much more respectable carriers with the families which own them. But if people do not know how to live on sanative principles themselves, what is to be expected from them by their dogs.

A number of us live on good food, the constituent parts of which are generally amply sanative, because we can afford it. We suit our fancy at our tables. We never think that man has an instinct like that of an animal, which led him for generations to choose his food, before scientists ever preached the principles upon which he had so long been acting. Pshaw! It is not our intelligence but our instinct that leads us to order our dinner. Our taste is the symptom of our natural need for a particular kind of food, and not the result of a mere fancy or of an obstinate will. If a dog could speak, I feel convinced it would often say— “give me fat or soup. I feel I need it. That boiled thing makes me sick.”

Here is a specimen of the “good-enough food” theory, whose shortsightedness and ignorance may produce any evil results.

“Some years ago a French country family was at dinner; one of the sons gave the dog, which was sick,

bread and butter, whereupon the other remonstrated, but without effect; the kindly natured man went on giving bread and butter, because the sick dog would or could eat nothing else, whereupon the other one took a hunting gun, to shoot the dog to save the butter, and in his excitement shot his brother."

It is not a mere sympathy but natural love and a sound common sense looking to our own security which commands us to give our dogs mixed food, containing some fat, no matter of what kind. To show that occasionally, mankind think differently, I will cite the following instance which occurred in my own country, and of which I had personal knowledge. A family had been partaking of their dinner, all but their mother who happened to be out. Some of the meal remained upon the table. "Save it for the mother when she returns," said one of the children who was present. "No!" was the answer. "Give it to the dog, and if the dog won't have it, to the chickens. If they don't like it, the mother will eat it. She never likes food to be wasted."

A large proportion of dog-owners who cannot afford expensive food take no time and trouble to replace its absence cheaply, and at the same time wholesomely. How often we hear a miserable animal complimented because he does not feel hungry. "He does not want meat," says the owner, "because he is not used to it." Now what would the dog say if he could utter his wants. Would he not ask for some of the butter and beefsteak he sees his owner devouring? "What a good

home your dog has," said a lady who was herself fond of dogs, when she saw me one day preparing its feed. "Do not take so much trouble for Ponto," said another when she saw me smashing some heavy beef-bones with an axe. The pores of the bone contain fat and marrowy juice, which before having the outer bony crust broken, the dog cannot reach. When the lady saw with what evident relish the animal licked out this, she thought it worth her while to inquire into my reasons, and I now believe Ponto has no right to complain of her style of feeding him.

Spontaneous rabies seldom occurs with the dogs which run about the streets and supply their own necessities with what they never get at home. It generally develops itself in pets and house-dogs who have only incomplete food or positive trash supplied them by their owners. Their stomachs are filled with a food containing no restorative or nutritive properties. Such a stomach is then only a sack containing this matter, and as nature never stands still, either digestion or morbid decomposition must take place. Such dogs run away on the first chance given them, because they are suffering from latent rabies. It is this which has led medical men as well as the general public to erroneously imagine stray dogs only are afflicted with this malady. Of course, I would not have it inferred that any one is justified in keeping a dog, with the idea of its being fed outside of its home. This sort of supply to its needs is merely a supplementary one.

We have no recorded instance of spontaneous rabies in a butcher's dog. These are never seen running abroad to find food. They get satisfied, at home.

Nor does the disease ever exhibit itself in foxhounds, harriers or any dogs of a pure and therefore valuable breed. Such dogs are always supplied with wholesome and complete food. This supply is the result of pride and instinct rather than knowledge on the part of their owners or keepers, but its result adds proof to my argument.

I should never care for a bite from any well-fed dog even if he were a Spitz, if I had given the animal any reasonable cause for using its teeth. Such dogs never bite without such cause. If however I was bitten by a lean, neglected and poorly fed dog, I should at once employ antiseptic remedies and possibly cauterization.

Here I recall the case in Canal Street, New York. This I think was entirely caused by the food. Boiled bones and the waste of salt pork cannot fail of being insufficient and unwholesome nutriment for the animal. No dog can remain in sound health with such nutriment. The disease of the dog given by inoculation, through a bite, to the horse with which it had previously been friendly was evidently due to irrational feeding. I am of course unable to say that the waste from salt pork was positively its principal means of subsistence. Yet it seems to me, this is more than probable. This dog had been accustomed to live entirely in the stable, although after biting the horse it

disappeared, and this fact corroborates my assumption that dogs kept in one place are far more liable to spontaneous rabies than when free, so long as their masters have no instruction in systematically and sanatively feeding them.

In the next place, I shall show that cold weather and cold climates favor the occurrence of spontaneous rabies. No impartial judge can honestly impugn this deduction of mine, the want of fat being the main cause of the generation of morbid disorganization in the stomach and throat of the dog, at this season.

Dogs are free of the disease, certainly, among people in cold and chilly climates, who live by hunting and fishing. In either case, the animals get a natural and complete food, neither extracted nor fatless.

Another important fact strengthens this theory. Bones and waste fat are frequently burnt in the families of those of moderate means, during the winter, to save coal. Sometimes this is done because they have no dog. More often, because they erroneously suppose much fat may be injurious to the animal. As a natural consequence dogs find less fat in the garbage during the winter, and the most useful constituent of their food is scarcest when most needed. All other constituents can be furnished by a sufficient quantity of common food of every description, but no equivalent substitute can be given for fat.

We all know that dogs live free and homeless in Turkey in Europe, Asia Minor and other Oriental

countries. In these portions of the world, hydrophobia is only heard of, but not known. At the same time in all European Countries with mild climates, such as Italy, Spain, our own Southern States and South America, spontaneous rabies seldom or never occurs, while in the Equatorial Zone such a disease is actually unknown. In these countries, irregular supply is borne without injury through the mildness of the atmosphere, while the garbage and offal upon which dogs sustain themselves, are sufficiently varied for them to select what they most need.

These facts all combine to prove the correctness of the theory that spontaneous rabies is generated in the digestive organs, in mild and cold climates, without any malarious influence, as well as without contagion from decomposed organic matter. Nor are animals empirically doomed to this disease.

Dogs and indeed any carnivorous animal may eat meat when worm-eaten, without injury. A far less powerful agent than the gastric fluid is, will destroy them, and they are digested more rapidly.

The fact that sickness and death has frequently taken place from the partaking of meat-stuffs or sausages packed in boxes, is ascribable to the voracity with which such soft and tasteless food may have been swallowed, to the quantity eaten, or to the unsuitable preparation of the preserved food.

An unwarrantable dread is at present felt, by many, of the Spitz, black and tans, mongrels and aged dogs. Now, species and age are of no account in the occur-

rence of this disease, as is shown in the latter case, by the existence of institutions in England where dogs and cats are taken care of until death comes naturally to them. If better care were not bestowed upon young dogs than is given them when fully grown, rabies would develop itself plentifully among them. Were not a wholesomely complete food given them, they would be unable to find a supply. Their teeth could not crush porous or roasted bones. They would be driven away by other dogs. Teased by children, and their strength being consumed by their rapid growth, they are greatly exposed to the chances of this disease. At the same time, few young dogs or cats look in as good condition as they ought. In most cases, fat as well as salt is wanting in their food. An erroneous idea prevails that such things are injurious to them. On the contrary, the want of them is the real cause of any deficiency of strength or any sickness apparent in them.

The eminent French chemist Regnault gives an average per-centage of the butter in milk, as follows:

The Cow	-	-	-	-	4,0;
The Ass	-	-	-	-	1,4;
The Goat	-	.	-	-	4,5;
The Wife	-	-	-	-	2,6;
The Dog	-	-	-	-	14,8.

Natural food for dogs ought therefore to be very rich with fat. But our imagination basing itself upon nothing more than supposition, which rests almost wholly upon nothing better than imagination



again, has led us to the dangerous practice of giving the dog "good enough food." Young dogs are given a food far below the average richness of the milk of their mother. It almost wholly lacks the constituents this milk possesses in a singularly large proportion. Dogs, young or old, ought always to receive a suitable quantity of fat in their food. Indeed there is little danger of their ever getting too much. If this theory is ever systematically practised throughout the Temperate Zone, I believe the disease must become a thing of the past. The same style of food, although proportionally less rich in fat, is advisable for cats. That dogs, tied up, and fed upon bones, may get fat, is very probable. It is the oily or fatty matter contained in the bone, which is the sole preventative of constipation, and which affords them the requisite constituent part of their natural nourishment.

That nature's food has never been made a standard for the preparation of the food we give dogs, is shown by the use of the, so called, meat biscuits given to feed the dogs at the recent exhibition in New York. I do not believe these contain more than five per-cent of fat when dry, while a bitch's milk, after being dried by evaporation, would be found to contain forty-four per-cent of grease. To render this clear, I will add that the average milk of the bitch contains

of Caseine, Albumine, Sugar, soluble	
and insoluble mineral compounds,	
about	19
of Butter, about	15
and of Water	66

} per cent.

All impartial judges will reject the idea, that this disease is the result of impurity or a sudden change of the atmosphere. It only proceeds from defective nourishment. No carnivorous animal can exist in good health on such food as the dogs and cats, which become rabid, are left to live upon.

But, I believe, great injustice is generally done to the Spitz dog. It is absurd to abuse the stone our own heedlessness causes us to stumble over. I propose to sweep aside all the malice and ignorance which has entered into this crusade against the Spitz. The principle of the disease, with this description of dog, is precisely the same as with other animals of the species. Apparent circumstances only make the facts in regard to the Spitz appear worse. A New York German Evening Paper in a recent article stated that matter scraped off the teeth or gums of a sound Spitz dog was a powerful poison. Such an assertion is a positive and gross error. Once scratched off, it loses its normal vitality. Such statements as this ought to be denounced unless they are corroborated by actual tests.

The journals also state that strychnine has been lately given to some two hundred dogs of all kinds in Yonkers. Whether this was done by some individual fanatically afraid of hydrophobia, by some one who was inclined to speculate in their skins, or by some rascal who had an eye to the property the dogs might be employed to protect, will probably never be known. However, if the last named reason was the inciting

one, the watchful Spitz dog in all probability suffered most largely.

Spitz dogs, black and tans, with mixed breeds of all kinds and descriptions, are kept by every class of our citizens, because they are cheapest and most common, while very large or very small dogs as well as the rarer and more valuable species are in the possession of those who are wealthy and well-off, and are therefore particularly although not always wisely cared for.

Every now and then we come across such a report as this in the daily papers. "A kerosene lamp exploded on such a night, at such a number, in such a street. A member of the family was fatally injured by the explosion." It is however never mentioned that some imprudent or intoxicated person had turned up the wick too high, or imperfectly screwed on the top, or done something else or left something else undone, equally dangerous. Of course, either the lamp or the kerosene are anathematized. But if a revolver discharges its ball before the trigger is pulled, even if it be a new one, we never hear of the manufacturer being considered responsible for the sale of a pistol in which certain springs were too weak or too smooth, to act with certainty. There is a kind of revolver now in the market which is carried in the pocket, and can be easily cocked there. If an accident happens to its owner, do we ever hear the manufacturer censured for it. Man never seems to look for the actual cause, or to place the onus of any

injury done to himself or his fellow, upon the right person. Now, it is well known that small dogs need a proportionally larger amount of nourishment than their huger brethren. Moreover, the Spitz is of a generally more delicate organization. It also partakes of its food so eagerly, that its assimilation and digestion requires a longer time. They therefore demand more attention than other species do. Many of their owners feed them upon soup-meat, which is insufficient as an alimentary diet for any species of dog. A food larger in quantity and better in quality is required by them in consequence of their watchfulness and restlessness.

Moreover, the Spitz, as a rule, is strongly attached to the house he lives in and the members of the family which own him. This must indirectly generate latent rabies whenever it is supplied with the food I have called irrational or incomplete. It is not inclined to run about the streets, or to grub in the garbage-heaps for what it feels is lacking.

But the Spitz-dog is of more carnivorous nature than other house-dogs. Raw fat is absolutely required by it. I say "raw fat," because the fat of a well-roasted or boiled piece of meat is certainly deprived of its most healthy—the liquefiable-portion. There are very many dogs, most specially Spitz-dogs, which will not touch boiled meat or boiled bones, unless compelled to do so by hunger. This fact ought to induce their masters or mistresses to reflect. There is a tale told in Germany of the experience of an in-

ventive father who asserted eating to be a mere habit and a bad one. Believing it might be dispensed with, he tried it upon his child. "Unhappily," he said, with a degree of indignant pathos in his voice, "just when I had accustomed it to live without food, the little one died." Now people of common sense, in their daily life, are very like that father, with regard to their dogs. They will not understand why a dog will not touch a piece of boiled meat. "It is too fat," they say. If it had three times as much fat and been raw, the dog would well-nigh have been fighting for it.

Why do we not feed the larger carnivorous animals in Menageries and Zoological Gardens upon boiled meat? Like dogs and cats they would get used to it, and like the child die. They, however, would have passed almost certainly through the preliminary stages of rabies.

The Spitz and other smaller dogs which become rabid have usually been owned by people of an irregular habit of life, who fancied having a dog but cared little for its comfort. When such poor beasts run away, they can scarcely be traced to their owners, who never kept them under a judicious control. It is probable they may have, a long time, been under the influence of nascent rabies, which was manifested by nervousness and extreme restlessness only. At last the malady breaks out, they leave their owners and snap at every living being they meet with, these only, generally or at least most strongly,

exciting their nervous organization. Every emaciated dog, and heaven knows, enough of them may be met with everywhere, daily, which is seen running along the street or road in a bewildered and timid manner, looking or snapping at everything which lies in its way, is a dangerous animal and ought to be killed, because it is either homeless or uncared for, and during the cold season almost certain to contract latent rabies.

This is my positive opinion in the very teeth of Mr. Bergh and humanitarianism.

There is a little black and tan terrier in my neighborhood. The above description almost photographs it. Besides, is an intelligent little beast. I endeavored to catch it, but its fretfulness almost made me afraid of it. I asked the owner to give it to me, for a friend of mine who wished such a dog in his store during the night. "Why! we have had it so long and like it so well,"—was the answer—"we could not think of giving it away." I then asked him, "why, if he liked the dog, he allowed it to run about, uncared for, day and night, even during the winter." To this he replied that he "had been sick, and did not like leaving it alone with his young children." It is to be hoped, hereafter, such cases as this will be examined into, by the common action of the police and the neighborhood. Our security demands this, which is the only real and effective method for the control of incipient rabies.

Such cases must be the cause of death from hy-

drophobia, sooner or later. If there were not a butcher next door to the man who owns the animal, and a few heaps of garbage in the vicinity, this little dog would have long since developed a case of positive rabies. It is unable to crush the large bones it happens to meet with, as larger dogs can, but as few hungry dogs are in the neighborhood, it has the chance to keep itself within the boundaries of tolerable canine health.

Some dogs need a larger amount of exercise than others. This is rarely thought of by their owners. But a dog which is well fed and cared for, may be readily distinguished by all of us, even though it may spend the largest proportion of his time in the open air.

Whether the length of hair demonstrates a want of more and better food than short-haired dogs require, is perhaps an odd question to consider. Yet I think it a very natural one. The growth of animal hair is a positive consumer of fat and mineral extractive matter. Not only does it require a large amount of this last, but also of salt, which is an invariable promoting agent. It is known that cattle and especially sheep need salt in a large proportion. Should they get an insufficient quantity of it, their hair and wool will be of an inferior quantity as well as quality. Sheep select the most oily plants and herbage for their food. The milky juice of these is a positive necessity for them. Sheep and many animals which furnish a wool of great length flourish best in hot or mild cli-

mates. This in all probability is the result of their food, which is highly nutritive and rich with oily juice and mineral salts, which would be consumed in their organism or furnish fat to their body, if it did not promote the growth and formation of their wool. Naturalists are distinctly of this opinion.

Mr. M . . . says in his humorous Natural History which appears in *Puck*,—"The squirrel lives upon nuts whenever it can get them, and when it can't, upon other oily fruits, This sort of nourishment is so beneficial to the growth of its tail that this part of the squirrel furnishes oil-painters with brushes. It is a very lively little beast when in freedom, climbing, leaping and turning over all sorts of trees, being in fact the first 'Turner' on record."

But, if there was only absorption, the fur must soon, merely become a depot of grease. The hair is an atomizer of fatty matter. Atomized fat undergoes a slow combustion which occasions a positive loss of this element in the body. Among mankind, it may be noticed that those with a thin growth of hair have always a greasy scalp, while those whose scalps do not exude the oily matter, are constantly complaining of the dryness of their hair and scurf. When the hair is long, its capillarity absorbs more fatty matter, which is atomized and exposed to the oxygen for combustion. Now, what must chance with a Siptz dog which has the fatty matter drawn from his body by capillarity, atomized by his hair and given up for combustion, if it has only an incomplete and



fatless food to supply to the waste of this necessary element in his nutrition?

I should perhaps explain to the general reader what capillarity is. Liquids are driven through the delicate tubes or pores of porous bodies by "reciprocal attraction." A drop of ink or oil is blotted up or absorbed by means of capillarity. When oil has spread as far as possible it leaves, after a certain time, nothing but a trace of coloring matter. It is oxidized. A piece of tallow will remain almost unchanged if kept in glass or metal, which disappears when wrapt in paper, through capillary attraction. The paper is the atomizer. Oxygen is always ready to perform combustion. It is therefore perfectly comprehensible that a million or more of hair tubes atomize and offer to the oxygen a large quantity of fat. If hair was as porous as cotton batting, we might occasionally see a Spitz-dog or a sheep in flames, as it has occasionally chanced in a furniture store, where oily masses of cotton sometimes ignite spontaneously, where they are exposed to the heat of the sun.

Nothing is needed beyond such reliable and corroborative facts, to show that a want of mineral and fatty extractive nourishment must produce more injury to dogs with long hair, than to those with short. It has been clearly shown certain ingredients are required as a supply and as complementary agents. Therefore is it not absolutely our own fault that animals whose utility has domiciled them with us, should

by the ignorant and unthinking be denounced as nuisances?

As hydrophobia occurs only in the Temperate Zone, while animals in more southerly latitudes are exempt from it, does it not become clear enough that the formation and subsequent function of the hair require a more complete supply in winter than in summer, and in northern than in southern countries—that a relation between climate and the functions of hair, wool or fur, exists in all animals—that an excess of fat in the organism is required to promote their growth, and that they are such powerful absorbent consumers of fatty matter, that they are actually injurious to the other physical functions of the animal, unless this consumption is made good by further supplies of fat or by fattening vegetable products, such as sugar, flour, starch or bran. These last, however, cannot be forced upon such species or individuals which have a pronounced desire for meat.

Indeed, I dare aver such substitutes are totally unfit to take the place of fatty meat for all long haired dogs, at all events, during winter, because their restitutive properties are far behind what is required by a domesticated carnivorous animal in that season.

As a general rule, let me once more repeat that animals with long hair need better food, proportionately, at all times, with a larger portion of fatty and mineral matter than those with shorter hair. With our dogs and cats, this is an absolute necessity. There is no excuse for our failing to recognize it.

The soundness of health in a dog or cat is evinced by their fleshiness. To deny or doubt this would be to-refuse belief in physiology and pathology as well as to fly in the face of conclusive fact.

Numbers of dogs, more especially the dogs of farmers, have to live on food perfectly unsuitable to them. A dog cannot live wholesomely on what will fatten a hog. What indeed of his necessary food can be given a large dog, whose owner lives upon boiled salted pork for five or six months in the year, if indeed he eats that every day. Farmers, when they look at their hairless stock, ought to see that the food which fattens them cannot produce the same effect on an animal which is covered with hair. Such an animal demands a more generous diet, because that which increases the fatty parts of the hog is in the dog largely consumed in the hair. Why, then, should the farmer sell his grease or fat to the nearest factory or grease-depot in his neighborhood. Ought he not to remember the safety of his farm and his stock may possibly depend on his feeding his four-footed guardians more naturally, and more wholesomely.

Large dogs seldom develop hydrophobia in our great cities. They find plenty of nutritive food abroad, which smaller dogs are unable to obtain for two reasons. In the first place, the large dogs drive them from it, and in the next, if they get hold of a large bone by chance, it has generally been well picked while their teeth are too small and their jaws too weak to crush it and get at the nutritive matter within.

The only reason for dogs becoming afflicted with rabies during the summer months in our large cities, is their number, and the deficiency in nutritive waste consequent upon the absence of a great number of wealthy families, as well as the tendency of those unable to leave for the country, to live upon cold meats which give comparatively no fat waste. Such persons care little for the dogs they own and think anything "good enough" for them. There is also a curious semi-superstition about the dog-days stimulating hydrophobia, which is entirely fallacious. This name is derived from the Dog-star, and simply relates to astronomy.

After dog-owners have a clear knowledge of my theory, a heavy tax which will make the possession of a dog, in a large city, a luxury which has to be paid for, with complete freedom for the animal, would in a few years, as I believe, almost eliminate the memory of the disease.

Few persons may be disposed to believe that sanative principles are as necessary for the dog as they are for ourselves. It is, however, probable, some few may have recognized the fact that neglect of a reasonable sanitary care in its keeping is the principal cause of the disease. These, however, have no principle and no system to guide them, nor do they know to what kind of neglect they have to attribute its origin.

Now, supposing my theory to be correct, which I implicitly believe it to be, its practice is all that is

necessary. There must be rational legal ordinances, and by means of taxation and police-control the number of dogs in large cities may be reduced, while the dog-owners in city and country must be rendered aware of their duties in these respects. If, after such enactments are made, a stray dog, here and there, may occasionally be found homeless, the reduced number of his fellows and the greater care bestowed upon them by their owners, will find him able to find plenty of wholesome food, until he is either killed, or finds a ready friend to house and own him. As for restrictive remedies, such as muzzles or chaining them up constantly, even were the first used at the right season, which they never are, they would be worse than useless. Common sense will ultimately dispense with them.

The practice of carrying an animal far from its home and abandoning it, is both illogical and absurd. If the animal is dangerous, it ought to be killed. If not so, it has a right to its owner's protection when he is leaving his old dwelling and should be taken with him. Vagrant animals would become harmless, because being so much reduced in number, a sufficient quantity of nutritious food might be found by them at all seasons. As for the killing of vagrant curs and cats which apparently have no home, this should be strictly forbidden, except by legally authorized agents.

What I have called irrational or incomplete food, it must be remembered, is boiled meat and bones

which are deprived of fat, extractive constituents and salts.

Dog-owners, of course, will then find dogs somewhat expensive and troublesome companions, inasmuch as their food upon sanative principles must, in a large measure, consist of raw meat with fat, bones or roast scraps and bones from hotels, which ought to be prepared suitably for them, according to their strength and species.

I shall not say much more of the Spitz and other species of dogs which instinctively reject most kinds of food except roast waste, raw meat and bones with fat, as I believe, I have conclusively shown these must have what they positively need. To compel them, by actual hunger, to eat what is objectionable to their natural instinct, is a dangerous practice for which no excuse can be made. But to give this pamphlet a full and complete practical value, it may be necessary to add to it a few directions for the preparation of a cheap and sanative nutriment. It is naturally evident that the bitch, when with pup or nursing her young, demands special attention. She should invariably have more fat with her food and a larger quantity of salt. This ought to be specially attended to, when their principal diet is roast bones or mixed food, so that digestion, assimilation and supply should follow upon the consumption of aliment. The percentage of caseine and albumine, in a healthy and well-fed bitch's milk, is as much higher compared with

the milk of other species of animals as I have shown the percentage of butter to be.

A case which I myself was acquainted with, proves the necessity I am now speaking of. A bitch with pups got so sick that she threw off her stomach every kind of food taken in the ordinary way. I therefore concluded to make a pulp or mash by chopping up and pounding raw meat and fat. This was mixed with a little water and seasoned with salt. A spoonful was given the animal every ten minutes. It refused the third and fourth spoonfuls. Afterwards it took the mash more readily, and some six or seven hours later began to take its food in the ordinary way. The interruption of the digestive process was due to two causes. The ordinary compound food was below the restitutive power its condition required, and would never have been acceptable had the animal been in another condition; while the necessities of consumption had been so far above the supply given it, that it had swallowed bones and food with such voracity, as to make digestion and assimilation almost impossible.

It is difficult to say what would have been the result if the owner had not asked my advice. In all probability, it must have died.

Dog-owners ought therefore to understand that to avoid a rapid and perhaps dangerous exhaustion in such cases, they ought to give the bitch when with pup, as well as after she gives birth to them, such food, in quality and quantity, as is necessary

for digestion and assimilation. There should be sufficient meat and fat, with salt, to supply a milk which is nearly four times as rich with butter and four times as rich with caseine and albumine, as the milk of the cow. It is more than probable, the milk of all carnivorous animals is relatively as rich. There are as many fat-atomizers and fat-burners as there are individuals in the litter.

The farmer's dog has heretofore been considered a harmless and intelligent animal. When, therefore, it assaults anybody without provocation, it cannot but be due to a distempered condition, excited to the highest pitch of nervous irritability by the sight of a stranger. Almost beyond the possibility of a doubt, such nervous irritability results from bad and insufficient feeding.

The bones of boiled salt pork are invariably unfitted for the food of a dog. Even when consumed entirely, their supply of nutriment is totally inadequate. They are so porous, that boiling extracts all their fatty and alimentary matter, and renders them useless as an article of food. The hungry dog contemplates them sadly. They ought at all events to be disguised, by chopping and roasting them with fat, or better, pounded and mixed with salt, bread, flour or bran and grain. Oily seeds are however preferable to grain or bran. It should then be, with the addition of water, mixed as a paste. In this manner, the bones unfit by themselves as food, may possibly be rendered useful, or even tempting.



Beef-bones used for soup, are of a very different structure and do not absolutely need to be roasted with fat, as their tough and glossy coating keeps most of their extractive matter within the bone, in spite of their boiling. The bones of joints, if crushed as fine as beans, yield ten to twenty-five per cent of their weight in fat with a large proportion of extractive matter, although they may have been boiled. Indeed, beef-bones may generally be called rich, when they are compared with others, especially in fat. If crushed and re-boiled, they furnish an extract similar to the best beef tea and may be formed into a food when seasoned with salt and mixed with bread, flour, grain or bran, suitable to the requisite nutritive supply and taste of rather delicate dogs.

Many raw bones of all kinds which are of little or no value to a butcher, would furnish an excellent food, after being broken and chopped up. They might be used either alone, or in compounding a mixed food in either of the ways previously alluded to.

Another fact ought to be noticed. The qualities of jaws and teeth are as varied among animals of the same species as they are in mankind. A thoroughly intelligent dog, whether small or large, may have poor teeth. He therefore positively requires his bones to be smashed or chopped up for him.

By the by, it ought to be clearly understood that mutton bones naturally contain so much less fat, they cannot serve as food, except there is fat left adhering to them. Chopped or broken raw ribs will

however form a very fair food, if they are not entirely denuded of their flesh and fat. In order that it may be well understood, I will repeat the explanation of the effect of bone-food on dogs. The fatty and extractive matter is its only vital and healthy portion. When a dog shows costiveness, this is the effect of the mineral business, but not as is too commonly, erroneously supposed, of the fat. It is therefore safe to have a dog fattened on bones, while it is unsafe to let your dog become lean, from the poor diet on which it is fed.

If a fat, bone-fed dog enjoys any fair amount of freedom, it will instinctively regulate its own appetite. When it needs such, it will take fresh herbage. However, if it is constantly chained up, it must, once in a while, need medicine to be mixed with its food. This should necessarily be tasteless. Were I asked to give a scale of the value of the different constituents of food for dogs, I should do it in the following ratio :

1. Fatty matter.
2. Extractive matter.
3. Raw meat with little fat.

Either may be mixed with bread-stuff\* and salt. The first mixed with bread-stuff forms an excellent diet, but raw meat without fat, or boiled meat are no food to keep any carnivorous animal with hair in a sound and healthy condition.

As dogs eat much less during summer than they do during winter, some advice to their owners as to

\* Indian Corn preferred.

the best means of keeping fat or roast meat for their use in cases where this food might otherwise fail, may not be unadvisable. Raw meat with plenty of fat should be chopped and mixed, in the following proportion, with salpetre and salt :

Raw meat, chopped up,	1 pound,
Powdered Salpetre, about	20 grains,
Salt, about	1 oz.

The Salt and Salpetre should be well mixed before the chopped meat is added.

When the meat is comparatively without fat, one and a half times the quantity of Salt and Salpetre should be used. Roast meat or bones should be mixed with one fortieth or one fiftieth of the quantity of Salt and Salpetre, according to the quantity of fat, and the thoroughness of the roasting. Either of these preparations may be kept in any kind of a vessel or box, and used mixed or unmixed for food.

Were I asked my opinion as to the causes of spontaneous cattle disease, I should unhesitatingly trace them to the same theory. Cattle sometimes get irrational food without fatty matter, while food containing no fatty matter, such as dried up milky juice, is the poorest respectively, in nutritive and soluble mineral extracts, also. Such food is at times given cattle on or after long journeys, when it is most injurious to their condition. Sometimes, also, it is given them in secluded places by stupid or poverty-stricken owners, who actually famish their cattle by means of cheap feed. Now, if good feed is not readily ob-

tainable, oil-seeds or oily cakes ought to be added, not forgetting salt, in order to secure the cattle against spontaneous disease. It ought to be remembered that one ounce of prevention is worth an indefinite quantity of medicine in any case, not simply for our cattle but for ourselves as well.

I am perfectly prepared to meet with opposition to my theory. It is not everybody who is disposed candidly to listen to and to weigh the argument which denounces an abuse that has become, by long habit, almost inveterate. If the talent of scientific observation was of more frequent occurrence, we should not be so blind to our own errors.

Suppose a dog-breeder sells a young dog to a purchaser and advises him not to feed it on meat, because a butcher who had purchased two young dogs from him, fed them on ox-heart during a few weeks, and they died. He, however, could not say whether the butcher gave them any fat with it or not. Still the dog-breeder avows, that the same butcher gave his young dogs this meat because he thought they looked emaciated and miserable. Another dog-breeder sells or gives away a Spitz pup, with the positive injunction to give it no fat at all. Eight days later, the pup is sick. It will eat no bread and milk, so meat is given it. The fat has been carefully removed from it, according to direction. It gets sicker, has diarrhoea, a diseased discharge from its eyes, with a disgust for any food.

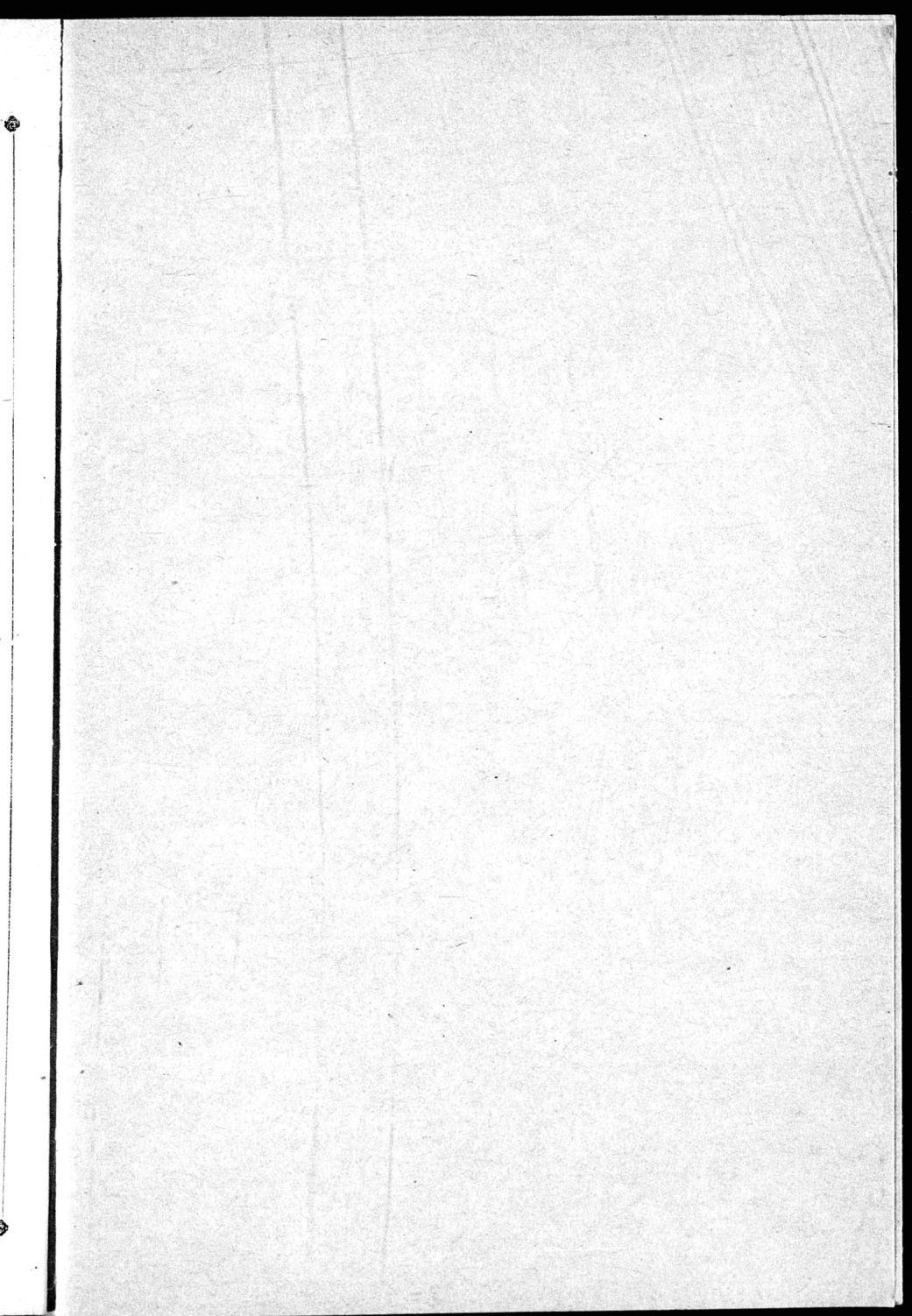
What on earth is there left to feed a young dog with?

A dog so young that it has but recently been removed from its mother's breast, must be fed either with easily melting fat, or with a more solid fat, which has been cut fine and is not separated from the meaty portion. When it advances in age, such care is comparatively unnecessary. Cases of such a class are very frequent and produce the strangest advice from those whose experience ought to have taught them better. In an instance of this sort instead of medicine, sweet oil or butter with salt would prove the most effective remedy. The strangest fact of all is, however, this that we have never yet learnt systematically what nature's food is. So strong is my conviction that nature is always right, I am inclined to pawn my honor that no dog would get sick, if while young it was fed with what squirrels live on in the wilderness. This is certainly very rarely meat. It is, however, the most complete food, besides milk, it is possible to find in a small bulk, and consists of kernels and grains which contain not only fatty and extractive matter, but all mineral salts, which may be found in a tree or plant from its root to its highest branches.

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