AN

INAUGURAL DISSERTATION

ON

Milk Sickness

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Milk Sickness.

Although this malady is so common in many parts of our country, so alarming in its progress, and so very fatal in its termination; yet it is very remarkable indeed, that a subject of such vital importance, should through the laps of ages, have excited so little interest, or have elicited so little from the pens of those who are best qualified to investigate its pathology, and suggest the best means for its prevention and cure.

While innumerable papers, pamphlets and books, have been pouring forth from almost every section of the United States, filled with facts and speculations, on the causes, preventives, and remedies of almost every other disease, to which those regions are subject; yet this great destroyer of our property, and cause of human

suffering, has all the time lain wrapped in mystery, and has been passed over, almost entirely unnoticed by the literary class of mankind.

On a careful examination of the text books, and indeed of all the works which have come under my eye, I have seen but little written on this troublesome disease,

Thus as this is a subject, so deeply involved in doubt and obscurity, if I should fall short in satisfying the mind of the reader, on the points to which, our attention is here directed, my effort can only be numbered, with those, of the few, who have made the attempt before me.

Symptoms— There is a mild form of this disease which may partially affect persons or beasts for weeks or even months, and yet with care they may escape its violence: But if from over exertion or any other cause, they become heated, and especially if they drink much water, the disease

assumes, at once its more violent form.

It is proper to state, that the symptoms are alike, in man and beast, except the additional one of vomiting, which is seldom wanting in some stage of the disease in man, and never present in cattle.

In the mild form above mentioned, there is commonally little more than lassitude, partial loss of appetite, nausea or slight vomiting, on exertion slight palpitation, and difficult respiration, costiveness, and in almost all cases, the subject of disease is attended with a peculiarly fetid breath - almost if not quite pathognomonic of the disease.

Soon after a sufficient amount of the poisonous food has been taken, the symptoms are very alarming, in some instances the stomach is immediately emptied of its contents, and thus nature many times performs her own cure in a short time. Others under like ir-

cumstances may not manifest any signs of the complaint for several hours - in the latter case, there is generally great heat in the stomach, mordinent thirst, uneasiness in the precordia, vomiting, pale and shrunken features, cold extremities, extreme anxiety, obstinate constepation, spasm in the neck and extremities, cadaverous sweats; and if not soon arrested, blue vomit comes on in many cases, hiccough, and great disproportion between the pulsations of the heart and arteries, and death closes the scene. Other symptoms occasionally occur, but these are the most prominent and important.

Causes - Great diversity of opinion is entertained relative to the cause of Milk Sickness. However as I have seen so very little written on the subject, I will not therefore attempt by any special reference to authors, a refutation of their views, but merely from

observation and experience, together with the best authenticated facts deduced from those who have long been familiar with the complaint; endeavor to support my own views as to the causation of the malady, and then point out the best means in my power to prevent, and also the most proper course of treatment for the disease.

The principle doctrins entertained as to its causes, and those only which we will now partially examine, are the three following

1st Epidemic Malaria or Miasm

2nd A poisonous vegetable eaten by beasts

3rd Mineral substances of some kind, the latter of which, the writer advocates, and this I believe to be effected in herbivorous animals mostly by eating vegetable materials, on which poisonous mineral exhalations have settled.

This gas may possibly in part be taken into

the lungs of such animals, by respiration, while in the act of procuring their food; and many persons, who are well acquainted with the circumstances, are of late fully confirmed in the opinion, that the malady is occasionally produced, especially in cattle, and some times in man and other animals, by the use of water which contains the poison. It hardly need be mentioned that cattle, sheep and deer are liable to the disease, from feeding on the ground which affords the cause. And carnivorous animals both wild and domestic who prey upon the flesh of those that die of the affection, are equally subject to it.

It is also readily and with much certainty communicated through the milk of animals laboring under its influence, to their sucklings, to other animals, and to persons who use the milch, flesh or butter, of

such beasts. We will now notice some of the arguments of those who believe this vil to be the result of malaria. We are told its principal time of prevalence is when its localities are driest, through the summer and autum - this is true, but it is equally true according to the best authorities, that the combined influence of heat and moisture must be present, and some think there must be exercised on a due proportion of vegetable material in order to generate this distemperature of the atmosphere; hence as dry weather can not produce malaria, and as heat and moisture are not always present under suitable circumstances, and certainly we have not always a considerable amount of vegetable matter, and as these are essential to the production of malaria, I think we may fairly infer that epidemic malaria is not its cause.

But admitting for a moment that malaria can produce the complaint in beasts, will any person believe that identically the same disease could be communicated to their young, to man and various animals of different species, through the medium of the flesh and milk of those suffering with the malady? - That it certainly is produced in this way, there can be no doubt to any one who has ever seen it - if there be one two or ten, of a family who partake largely of such food, in a short time they are all invariably attacked with the precise symptoms peculiar to the disease, whereas all those who do not use it, though placed in like circumstances, of similar habits, are equally sure to escape its effects. These facts alone would appear sufficient to convince most persons that malaria could have no agency in

causing the milk-sick complaint either in man or beasts.

As a further refutation of the doctrin under consideration, we would ask, if it be of such origin, why should it not be developed among beasts during the prevalence of malarial epidemics in common with our species, and not be confined to particular localities? or why should not man on the other hand be liable to it in its true characteristic form, from this (alledged miasmatic influence) in common with beasts, in those particular localities where it occurs? That such things never do take place I am well satisfied, for I know several families who live adjacent to, and on the grounds where this disease is generated, and never heard of one being affected only from the use of the food or water as already mentioned.

Another circumstance which goes very strongly to disprove this doctrine is, that I am well acquainted with no less than two localities, the most unfavorable to the production of malaria – the first is in the immense mountains of Cocke County Tennessee, far distent from a river, marsh or lagoon, on the north side of a high mountain, covered with a dense growth of pine &c, – with a beautiful rivulet of pure water runing through the ground, and in a neighbourhood where malarial fever is not known – The other is in Hawkins County Tenn – a small area on the South side and summit of a large sloping and dry ridge, with sparse growth of any kind, and no water – they are alike productive of this disease in cattle, and a terror to the neighbourhoods in their vicinity.

We now come to speak of the second supposed cause of Milk-sickness, which we have told you is a poisonous plant.

In support of this position it is said that the disease only prevails during the growth or existence of vegetable material, under the belief that a plant is the cause, which could not be procured at any other season - but this proves nothing more in my estimation, than that a due proportion of herbage should be found on the ground where the cause is, to contain and communicate the requisit amount of mineral poison to herbiferous animals, who become its subjects. We are also told that as the latter part of the summer and fall is generally the most troublesom time of this complaint, that it must be derived from a vegetable source. because

most plants are better matured in the advanced part of the season, than at any earlier period, consequently when this supposed plant is eaten, it exercises with more certainty and violence its deleterious effects.

Were it truely a plant, this supposition would be a very rational one; but on the other hand, we can say with great propriety, that it must be a mineral, because at the dry or advanced season of the year, it is known to all, that mineral waters are in their highest state of purity; at which time they are of course the more capable of emiting their poisonous exhalations.

We might add that if such a plant did exist, that the above season would be the best time for finding it, when most herbage is in a state of decay,

which renders the ground partially barren, and exposes to view many plants, which at other seasons, are not so readily discovered- notwithstanding which it has ben diligently sought for, by many without success.

By those who advocate this doctrine, we are asked, if it be the result of a mineral, especially water, why should not man receive the disease through this medium, as well as cattle and other animals? My reply is that they sometimes do- for I had under my care in the summer of 1854 a man laboring under this disease, who said he had used no food, which could by any means have produced the malady, his wife also gave me the same information.

His residence was almost surrounded by a poisonous district, and he was a man of intemperate habits, I could account

for his disease in no other way, than that he while at work in this ground, was not careful to go to the spring out of which his family drank, but being thirsty from intoxication and fatigue, would quench his thirst from some impure water running from this poisoned ground.

But this malady is rarely produced in man by the use of water, because the water is generally so nauseous and unpleasant, that they seldom use it, for we generally see mineral water and pure water close neighbours, here they have no compulsion. On the contrary this is not the case with cattle, for all know that they prefer filthy, stagnant and mineral water, to water of the best quality.

We now come to a point on which the vegetable advocates differ, for while we are told by one side, that milk-sick re-

ions at first settleing very troublsom, were rendered much less so after the food became scarce on the ground; on the belief that this poisonous vegetable was eaten out, or so very scarce as seldom to be found by animals. The others tell us that some places of this character, at first richly covered with pea-vine and other nutricious food, do not produce in beasts this complaint; but as this fine herbage grows scarce, that cattle become less choice in the collection of their food, and consequently, with their carelessness occasionally get hold of the poisonous plant.

We believe that in the first case, owing to the lack of food, beasts disincline to graze there, or if they do, they do not obtain a sufficient quantity of vegetable material, to convey a deleterious

amount of mineral poison to the stomach. In the latter case, it is not because they become less choice in food, and eat a poisonous plant, but because, while this highly nutricious, and juicey vegetable is eaten in such abundance, the poison is in some degree carried off by the secretions; which we will further explain when we speak of preventives.

The mountain laurel is thought by some to be the specific article, but this is a very wide mistake, for I know a milk-sick region which I am sure has no laurel near it; it is surrounded by a fence, and is well defined

If a vegetable be the cause of this disease; I should like to know how it is that beasts who procure their food on those localities through the

night and early in the morning, while the dew is on, become subjects of the malady so much more certainly than if they obtain it from the same during the day, which I am certainly informed is an indubitable fact. It can not be presumed, that they would more readily find this poisonous plant in the night than in the day, or at one time of the day than another; but I think it will be admitted by all, that poisonous mineral gases might be found in greater abundance, on herbage in the night and morning, than at any other time of the day.

From all the foregoing circumstances, I am fully satisfied, that there is no such plant; but in addition to this, it is very strange that so poisonous a vegetable should not have been disti-

nguished from others of less virulence: we admit that chemists, and other scientific men have not devoted much labor and time to the search of it, but others less competent have, and we must acknowledge, that the virtues of plants, have as often been detected by the illiterate, as the scientific, at least so far as to have distinguished such a one, as this is supposed to be.

It has been sought for in vain; and even many of the western tribes of Indians, to whome milk-sickness has been familiar "time immemorial", have with all their diligence, patience and sagacity sought for it, with like success, or <u>want</u> of success. But a much stronger reason yet presents itself, which is, that the

cause of the malady has never been known to transcend its first ascertained limits on any district when it prevailed, however small or great the compass may have been. Then it is hardly rational to suppose, that a vegetable of this discription should remain without, in some way disseminating or spreading over so circumscribed a boundry as five, ten or fifteen acres of ground, or being discovered; especially when the adjacent soil to every appearance, is equally well adapted to the growth of the same kind of vegetable, as that contained within such district.

In proof of these views, I will mention one out of many places of this discription, with which I am acquainted. There is a lot of ground

some three or four acres in Hawkins County Tenn, on the farm of Mr. Kite, which he ascertained by watching his cattle, to contain the certain cause of milk-sickness; this small spot of ground, he fenced off, enclosing in the same lot his spring and one or two acres of ground on the opposite bank of the creek from the poisoned ground as he called it.

He stated that he frequently allowed his cattle to run on the ground near the spring, but if he suffered them to cross the water, and graze on the opposite bank, and hill side, his cattle were sure to get the poison.

Other farmers in the neighbourhood of Mr Kite, have been able to define, and enclose this source of disease and death, with like success- scrupulously guarding those districts, and thereby have

almost driven the disease from the neighbourhood, except when their stock brakes into these grounds.

We are told by some that for this very reason, it can not be of mineral origin; because they say if minerals be enclosed, their exhalations would have no difficulty in flowing in the atmosphere, beyond such enclosure, and settling them on herbage, which would still be eaten. This is a very plausible argument, yet I should think that when the definite extent to which such exhalation had been certainly ascertained to be carried by the air for many years before the enclosure was made, that whether this cause be in the center or at the circumference of an area, it would hardly be carried further after being enclosed than it

ever had been before. That the limits of this poisonous material, be it what it may, can and have often been discovered, and enclosed, to the suspension of its injurious effects, is incontrovertably true. By those who oppose the mineral doctrine, we are told, if it were true, that man as well as beasts would often meet with the disease, by the use of fruits, and culinary plants, on which these exhalations had settled. But no one I think, would presume that this poison was absorbed either by the fruit, or plants, and entered into their composition, but only settled on their surfaces; then we all know that fruits are rarely eaten without paring or washing or at least having the foreign matter rubbed off their surface, insomuch that a dangerous amount

of dew, or exhalation, would hardly be swallowed. As for culinary plants, there would be much less danger, in their use, than in the former article; as they are never used without being prepared either by washing, or other dressing, any of which would be sufficient to divest them of all such poisonous matter.

This malady is mostly found, in the neighbourhood of large beds of mineral, of various kinds. In many parts of Tennessee and Virginia where this disease prevails, we find great quantities of Iron oar, of an impure quality - the same thing is true in other States also. But to do the subject justice, I must acknowlege that the malady is some times found in districts, where no mineral has

yet been discovered. It is certainly true that, in a large majority of instances, that we find some mineral.

Preventives – We will now notice the best preventive measures to this disease.

That clover and other very juicy nutricious matter of the grass kind acts in this way, there is not the least doubt – but it is evident that clover is far superior to any other, by its well known properties of increasing the secretions in the animal economy, its influence is thus exercised on all the various secretory organs of the system of animals that feed on it; not only on the salivary and mammary glands, but also on the whole mucous tissue of the alimentary canal, and the urinary organs.

The beneficial use of this article is clearly proven by pasturing stock on it, even upon the Milk-sick ground, the abundant use of which almost and sometimes quite exempts them from the malady; and more especially those that secrete much milk; and under such circumstances in fact, their milk may often be used with impunity, when the cow is young and healthy; however their sucklings, are very apt to die with it, if they get no other nutriment.

In such instances some have supposed that the escape of beasts from disease depended on this ground being clovered off, by which means they thought the poisonous plant had been destroyed. This I do not believe to be true, for the use of the clover is no doubt the cause of the prevention,

and (as I promised to explain) I will mention that pea-vine and other very juicy food, in new settlements, act on the same principle that clover does; by increasing the secretions, hence as it becomes scarce, beasts are more liable to the complaint for lack of this abundant secretion, and not (as is supposed) from their growing less choice in the selection of food, and thereby eating a poisonous plant.

It is probable that vegetable matter may exercise some influence in preventing the occurrence of this complaint in the early part of the season, at which time we know that grasses, and other herbage are much more tender, and capable of augmenting the secretions. Other rich grasses, such as blue-grass bord-grass and timothy might in some degree pre-

vent the violence of the complaint while they are very young and tender, but none I think is equal to clover.

It is further stated, that on some districs the ordinary cultivation of the ground, such as Corn, wheat and oats, does not destroy the poison, but that clover has this power, as is proven by a return of the poison, as soon as the clover is destroyed, and stubble substituted for it.

Treatment - In this disease as in many others, I have often heard it said, that every thing has ban tried without success. This however is not true, and is more the result of alarm in such cases than reflection, for the practitioner when called on in such emergent cases, generally in stead of taking a philosophical view of the case, only looks at it in the abstract;

and in place of treating it according to the indications, he is endeavoring to suggest to himself some specific - thus he and his friends are commonally baffled, and disappointed in their designs and efforts. If called to a case at the outset of the disease, the first indication is to evacuate the stomach of its poisonous contents - secondly if the action of the heart be strong, and the pulse full and tense, blood must be taken in quantity proportionate to the circumstances; and thirdly, so soon as the emetic has ceased its operations, and the stomach is sufficiently tranquil to retain it, a purgative should be administered. The most safe and efficacious emetic that can be given in these cases is Ipecacuanha in decisive doses, followed by copious draughts of

warm water; and instead of the offical Ipecacuanha, the Euphorbia Ipecacuanha or American Species is said to be much preferable, its superiority over the former is believed to be owing to its purgative powers. It was first introduced through necessity, in neighbourhoods where medical aid was not convenient, and the emetic properties of this plant had long been known; in this way it became a popular remedy in this disease, still being used by the common people and physicians almost invariably, in the treatment of this malady; it being always found on or near these districts of country. Owing to the prostration of the system, it is thought best to give the Ipecac. with a little Brandy or wine, as it will in this way evacuate the stomach at once, and more effectually.

If this treatment can be adopted soon after the poison is taken, little else will be required in most cases, than to follow it with a good dose or two of Calomel, or very often Olive Oil will answer every purpose; indeed the country people tell us this is all they want to cure a case after an emetic.

But if the case be obstinate, it will be found necessary to keep the bowels open with some pretty active purgative. The Comp. Cathartic Pill of the Dispensatory is probably the best that can be given.

Mineral emetics have generally proved unsuccessful in this disease, by increasing the heat which is so common in the stomach of such patients, and Calomel has not always given satisfactory results, but such failures, I think, may generally be ascribed to the improper

for nothing is more common than to see patients treated in this way recover perfect, and permanent health.

In all instances the patient should be kept very quiet, and free from all exposure of any kind, until all his recuperative powers are perfectly restored, Strictly observing a temperate course, abstaining from gross diet, and exciting drinks. This treatment would seem to be clearly indicated, from the evidences of inflammation found in the primae viae of beasts, on post mortem examinations, and reasoning from analogy, we would expect to find similar evidence, in the human subject, dying of Milk sickness.

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