

## WALKING DISEASE AMONG HORSES DISCUSSED BY STATE VETERINARIAN

Cause of Disease Obscure, Poisonous Weed at One Time Suspected; Mules are Immune With Result Farmers Turn to Mule Raising.

By W. H. LYTLE, D. V. M.

For several years past a malady of horses has appeared from time to time, causing severe and unusual losses. The disease has been labeled by the Eastern Oregon wheat grower as the Walking Disease largely because walking symptoms were frequently met with and the term is so descriptive of some of the symptoms that for the want of a better understood name we will allude to it here under the same caption.

Various experiments have in the past been carried out to prove or disprove various and sundry theories as to the cause and exact nature of the disease, none of which have tended to throw any considerable amount of light upon the disorder. At one time lupine, a poisonous weed or plant in certain stages of growth, was suspected as being responsible for the losses. At another time the infestation of bots was thought to be possibly in some manner connected with the trouble. Early in the investigation of the malady a blood infection was suspected. All of these suspected causes have been largely disproved by experiment. Lupine was fed in great quantities to susceptible horses without apparent harm, likewise bots were removed from slaughtered, ailing animals and fed to susceptible horses without developing the disorder and lastly blood was removed from the jugular vein of an ailing animal and injected into the circulatory system of another horse without untoward results. These experiments, while not sufficiently extensive enough to be entirely conclusive, nevertheless throw a certain amount of light upon the disease as most likely not due to.

It might here well be mentioned that mules seem to be immune to the disorder, hence in the absence of any specific cause being discovered and knowing no satisfactory and effective treatment, the best advice that could be given the unfortunate farmer or stock grower was to go out of the horse business and buy and use mules. Mules are good farm animals but owing to their non-reproductive nature are more or less in the same class with the tractor and automobile when they are once worn out, they have left no progeny to take their place, hence mule farming has made wheat farming more expensive than horse farming and has left the only possible means of financing the industry to the procedure of buying them when two to three years of age, working them two years and growing them out and then selling them when five or six years of age. This has proved fairly satisfactory but this year mules are not selling well and the farmer is left with expensive non-reproductive animals on hand. Hence the wheat farmer would gladly go back to the broad mare in order to diversify a little if it were possible to avoid the Walking Disease trouble of past years.

Within the past two years many of the mystery diseases of medicine have been connected up with mineral deficiency and nutritional disturbances. At this time it would seem that the so-called Walking Disease is due to a

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Lady Limerick has been suggested as the bearer of England's wreath which British women will send to this country for the dedication of the Tomb of the Unknown American Warrior. She lost her son in the war and endeared herself to American soldiers through her canteen and other war work.

protein and mineral deficiency in the diet existing over a long period of time, thus leading up to a very chronic condition which is only sufficiently minutely removed from what might be termed satisfactory animal health to affect those animals that have a somewhat heavier drain upon their system. For instance, mares that have given birth and nursed colts throughout the spring and summer and have done considerable work throughout the year suddenly take down and die. It is obvious that the supplying of the mineral foods and other necessary nutriment to the colt in the mare's side is a source of heavy drain upon an otherwise heavily taxed economy and there is good reason for believing that the chief reason why mules do not become affected is first, because they do not bear young and hence the females are not subjected to the mineral draining caused by the demand of the foetus; secondly, the mule is a very hardy animal, not given to worry, does not perspire as freely as the horse and hence does not, because of this, use up as much of these essential minerals, which are mixed with all of the juices and secretions of the body. The mule's extreme hardiness is regarded as the chief rea-

son for his immunity to the Walking Disease trouble, his system may be capable of better and more thorough assimilation of all foods. Wheat hay is known to be deficient in lime or calcium phosphate and certain vitamins found principally in the leaves of certain plants and because this is used as the principle roughage food throughout the whole Inland Empire district it is thought that the real cause of the so-called Walking Disease troubles has its origin in an essential mineral and vitamin deficiency. It should be stated that there has been much experimental work done in this connection within the past year and now it is definitely known that there are some nine essential minerals that must be had in certain minimum amounts, either from mineral stores reserved within the body or from foods. When some of these are not available, marked disturbances of bodily functions take place and death frequently results. Certain of these nine minerals if entirely withheld will produce death in a short time as a month.

A careful observation of Walking Disease outbreaks will reveal that twice as many mares that have foaled colts during the year die, compared with those which have not, together with those geldings and mares that are making a considerable growth and have worked quite regularly and heavily throughout the year, and those animals that are forced to rough it with but little whole wheat to be had from the header dumpings will be found the ones to show Walking Disease trouble. Milk cows fed on wheat stubble and pasture are also found to suffer from the disorder.

The treatment from a medicinal standpoint, if the essential mineral deficiency presumption is correct, would be to supply these in the form of a stock tonic or lick; this should comprise Sulphur, Ferrous Sulphate, Magnesium Sulphate, Calcium Phosphate, Potassium Bicarbonate, Sodium Bicarbonate and Sodium Chloride. This mixture should be placed in a box under a shed, away from the destructive tendency of the weather, where the animals might have access to it.

In addition to the nine essential minerals, Calcium Manganese, Sodium, Potassium, Iron, Chlorine, Iodine, Phosphorus and Sulphur, are two other chemically unidentified substances designated by McCollum, the discoverer, as Fat Soluble A and Water Soluble B. By some these two as yet unidentified substances are further split up into vitamins. This much is already known regarding Fat Soluble A, it is found in animal fats, fresh leafy vegetables, the grains are poor in it. Water Soluble B is found in yeast, egg yolk, germs of seed, leaves of fresh immature plants. Both of these products are necessary to growth and life. They are both to be found in the leaves of immature plants, both are to be found in yeast, hence the best ration to supply these products would be well leafed second and third cutting of alfalfa hay and the most concentrated form of essential vitamins to be had would be in yeast cakes. One yeast cake in warm water should be given night and morning to badly ailing animals. Alfalfa hay should be fed to the entire band. This could well be mixed with wheat hay or other mature and non-leaf bearing forage. Alfalfa hay contains an unusual amount of calcium phosphate and other minerals and by feeding this the mineral requirements of the body may be kept up to more than the normal requirement. Alfalfa hay contains much protein balances well with wheat hay and makes a very satisfactory balanced ration for horses. I have really never found a case of Walking Disease in a band of horses that had access to alfalfa hay, though it be but part of the time. Along with this ration treatment of ailing bands of horses should be carried out a vaccination treatment to protect them from Hemorrhagic Septicemia, a disease that is widespread and frequently attacks animals only when they are in a run down condition.

Within the last month several reports have come from the wheat districts of Eastern Oregon that this trouble is again appearing. We attribute the start of this disorder to the wet fall. Practically all shattered wheat in the field and that in the header dumpings has sprouted and its food value has been largely destroyed, hence animals that have been

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