lame is formed; these are all deadly parasiticides. However, in the absence of quicklime, slaked lime will do, only it should be as fresh as possible. Slake the lime, pass it and the sulphur both through a fine sieve and at once mix them with a little water, to the consistency of cream. Boil about 50 gallons of water and pour the mixture slowly in, keeping the water on the boil the whole time. This aids the chemical combination very much.

*(To be continued.)*

**Disease "Nenta" in Goats**

By Veterinary Surgeon Soga.

I commenced the investigation of this disease on the 31st of July last, when, accompanied by Mr. P. Weyer, I visited several farms on which there were cases of Nenta. The disease was not so severe as it will be later in the season.

I visited Yogelstruis Kral, Mr. P. Weyer, also Goelblaars Kral (Mr. Schumann). At these farms I had an opportunity of seeing goats in all stages of the disease—from the first day's affection to the third week. On the former farm I saw twenty-eight affected out of a herd of one hundred. It was on this pasturage that I selected the herbs for experimental purposes.

I also paid a visit to the farm Braak Poort (Mr. Huter); here again, there were Nenta goats. Mr. Huter kindly gave me a diseased goat, which we conveyed to Darlington and on the following morning I made a post-mortem examination. To insure a thorough examination I killed the animal by incising left and right carotid arteries. The result of this incising left and right carotid arteries is summed up in this report. I had opportunities offered whilst at Darlington, of re-visiting the above-mentioned farms, and repeatedly taking note of the progress of sick stock.

Diverse are the opinions given as to the cause of Nenta; most farmers hold to the opinion that the disease was caused by an herb, but here again opinions differed as to the particular herb.

All thanks are due to Mr. P. Weyer for having signalised the plant; this gentleman had made several experiments with various herbs stated by farmers to cause Nenta, but with no signal success.

There are undoubtedly many herbal poisons, but there are very few which produce the ante and post-mortem conditions as induced by the Nenta plant.

Accompanied by Mr. P. Weyer, I proceeded to the veldt where I saw the plant on subsequent occasions, whilst gathering the herb for experimental purposes, opportunities were offered me for noting its habits. Certain portions of the veldt are suited for its propagation; on some parts of Darlington Estate it cannot be found at all, on these parts there is no fear of goats contracting Nenta, but in camps where the herb is to be found, stock take the disease indiscriminate of the quality of the goat.—old boer goats and well-bred Angoras.

For experimental purposes Mr. P. Weyer generously gave me eight goats on which to try the action of these suspected herbs.

The first herb I experimented with was the Nenta bush or plant; for convenience, I cut the leaves into small pieces and bruised them. Each goat, irrespective of size, received two ounces daily. They had been selected from a flock grazing on the estate known to be free from the disease. These goats, prior to receiving a dose of the herb, were submitted to a careful examination by thermometer the previous day.

I shall here give a list of the goats (as transcribed from my notes), in the order in which I dosed them, considering it necessary so to do.
After seeding, the plant is denuded of leaves, and remains so till the following season, i.e., from January to May, likewise there is an abatement during these months of the disease in goats. However it can be easily understood that where the herb is plentiful goats may during these quiescent months digest portions of the stock, which will account for the odd cases during these months.

Nonorchids resist the disease to a great extent, either by natural ingestion or by artificial.

The following description of the plant is furnished by Professor MacOwan, F.L.S.:

The plant sent to me by Mr. Soga for identification is *cotingdon varium* Nera. It is a low-growing leguminous plant of the Karoo gebroken veldt, whose properties recall the accounts given of the *Karoo gebroken veldt*.

The average of the districts of otherwise valuable pasture useless. There is much confusion of cord and the bones. (Arteries charged with blood, the nature of this distended with blood.)

**Symptoms of Nenta as evinced by Natural and Experimental ingestions of the plant.**—These are many and various, and may be divided into ordinary and extraordinary.

In the early part of the season when Nenta is not prevalent, only two or three in a flock daily taking the disease. A few goats that have eaten the herb during the day or the previous few days, when they are returning to the kraal make every endeavour to be first, so sooner are they in the kraal than they lie down. Others that are more severely affected travel along with great difficulty, staggering gait, tucking in of hind legs, severe shivering, dangling of the head, a prominent arching of the back in many cases, the opposite in some cases, hurried breathing, a constant endeavor on the animal's part to keep the head steady, when an attempt is made to extract food, the mucous appearance of having no papillae.

During the latter half of the season, one section very dark, not above normal. Medulla much affected, medulla dark bluish appearance, corlet, dark brown.

Lungs have dark patches upon them, pulmonary artery distended with blood.

Heart. Arteries charged with blood, the nature of this coagulated blood is such that in taking hold of the exposed vessels and gently pulling, a splendid cast of the vessel and secondary is had.

Brain. — Cerebrum and meninges normal. (Meninges of Cerebellum in some cases slightly congested). The posterior aspect of the *tentorium cerebelli* "membrane, dividing Cerebrum from Cerebellum," was very much congested.

**Post-mortem appearances.**—Either from a case of induced Nenta, or by a natural inhibition of the plant.

**First Stomach Rumen.** — Unhealthy, having the inter-papillary spaces packed with dry food, giving the stomach the appearance of having no papillae.

**Second Stomach, Reticulum.** — Containing a large quantity of food.

**Third Stomach, Omusum.** — Unhealthy, contents usually dry; when an attempt is made to extract food, the mucous membrane spreads. No inflammatory appearance.

**Fourth Stomach, Abomasum.** — Containing liquified food, in some cases slight inflammation.

**Duodenum and Intestines.** — Contain very large quantities of food. Intestines in parts dilated. Postal Vein and intestinal vessels full of blood which can be extracted with ease, giving a good cast of the smaller veins.

Liver very dark in colour, diseased, very friable.

Spleen, one section very dark, not above normal.

Kidneys much affected, medulla dark bluish appearance, corlet, dark brown.

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Medulla Oblongata with coverings. Medulla normals, coverings slightly congested.

The spinal cord with coverings healthy, all but in one case a small portion of the anterior fourth of the lumbar portion of cord.

There was an extensive congestion extending the whole length of the cord between the outer coverings of the spinal cord and the bones. (Dura mater).

**Treatment.**—Preventative and general.—Knowing that the disease Nenta is due to a specified cause, our duty is to remove that cause where practicable.

Eradication could be carried out on some farms, there being no more difficulty experienced in destroying this herb than in burweed.

Many farmers have stated to me that it is too difficult a matter to eradicate the herb. One can only say to this, that by permitting the herb to remain there will always be war waged against its ravages in stock, and certainly, these can be minimised by eradication where practicable. The average loss on six farms annually in this part of the district is about eighty head of goats, half this number of goats paid for eradication would materially help. Say, the farmer gave a goat for every bag of the herb, or perhaps two bags. For every pound of the herb destroyed, I may safely say five goats are saved not only from death but from sickness. It will therefore behove every farmer on whose pasturage the herb grows to make every endeavour to have the plant eradicated, and thus minimise his annual loss.

**General Treatment.**—To be successful, the animals must be taken when first seen or suspected, and placed in small camps where they can have plenty of shelter; walking aggravates the symptoms; these animals must not be excited in any way other than absolutely necessary. Administer at once a dose of physic—

Epsom Salts, 4 ounces,
Chloride of Ammonia, 40 grains,
in a cupful of cold water. Should there be no movement of the bowels in 48 hours, give a second dose.

Epsom Salts, 2 ounces, in a cupful of water.
Bleed the animal freely from the jugular vein, which can be done by clipping the hair off the neck low down, press open the vein with the left hand, so that it may dilate, open it with a sharp lancet or pen-knife, draw away from a quarter to half a teacupful of blood. Should the operator fear doing this, he may bleed at the tail.

Whilst experimenting with goats I found that raw linseed oil aggravates the cases, making the animal infinitely worse. Epsom salts is the best locative, conjoined with Chloride of Ammonia. This dose gets rid of compaction of the third stomach.

After having purged the animal with the above dose, give twice a day,

Nux vomica pulv., 20 grains,
Annon. Bromide, 20 grains,
in half a cup of cold water. Nux vomica does not mix well with water, but if well stirred it mixes tolerably.

On a subsequent occasion I tried the following with beneficial result: —

Chloral Hydrate ½ oz.
Creosote 10 drops
Boer Brandy 1 oz.

This dose I gave four times a day. I also tried subcutaneous injections of strychnine 1/60 of a grain dose four times a day, but I find the first dose best.

Should the animal not care to feed, bran 4 ounces.
Meal 4 ounces must be made into a wash and given to the animal, by aid of a spoon daily. This inability to eat is due to paralysis of the muscles of mastication. This symptom does not last very long.

In dosing goats great care must be taken, the animal should be in a lying position, the operator with the goat between his legs, with his left hand he catches the goat by the mouth, opens this by catching hold of the upper jaw with his thumb and forefinger, the latter being inside on the palate, with the third and fourth fingers, he presses down the under jaw, the bottle he holds in his right hand, pours in no more than a large tablespoonful at each time. the tongue must not be touched, should the animal cough the head must be lowered at once, till the animal ceases to cough.

With care nearly all cases will have recovered from the seventh day to a month from the date of affection.

After recovery some little time should elapse prior to allowing the goats to proceed with the healthy flock to feed, as they are not quite fit for so long a journey.

Until an antidote is found one must be content to treat the disease as symptoms show us. Tobacco is recommended by some farmers, and rightly so, because in its action it is antagonistic to some of the symptoms shown by Nenta. Coffee is also stated to be a good remedy. These latter I have never tried.

Respecting another medicine which I used in four cases, viz., Hydrate of chloral, I may state that it acted exceedingly well in cases of weakness, also in regulating the urine, preventing this frequent micturition seen in the worst cases.

In spite of medicines, I cannot but say that it is next to useless to fight with effects. Satisfied that we have the cause, let that be removed. Eradication of the herb where practicable, is also stated to be a good remedy. These latter I have never tried.

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