

Ethno veterinary Practices in Pre-colonial Kwimba District

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Abstract

Cattle diseases have been in existence since the emergence of the Neolithic revolution and stockowners around the world struggled to keep away such diseases using traditional medicines as determined by their surrounding environment. In African pastoral communities, this struggle remained dominant throughout pre-colonial period as in other parts of the world. Studies on African ethno veterinary practices have been written mainly from scientific view point while historians have scantily documented the role of ethno veterinary practices in the management of livestock diseases. The paper used qualitative method in analysing primary and secondary sources. The findings demonstrate that the Sukuma of pre-colonial Kwimba did not lie hopelessly at the mercy of livestock diseases. The Sukuma used their environmental knowledge to invent several ethno veterinary items and medicines to control diseases and maintain livestock health. Ethno veterinary items were crucial in the preparation and administration of medicinal dosages while ethno veterinary medicines were important in the treatment of livestock diseases and challenges. This paper is a historical response to the position taken by Eurocentric scholars who believe that development in Africa began when the continent came into contact with people from outside, particularly Europeans. The paper is not only important in showing African agency before the advent of colonialism, but also in the preservation of ethno veterinary knowledge of the Sukuma people of Kwimba District.

Key words: Ethno veterinary, Livestock Disease, medicine, Treatment.

Introduction

Cattle diseases have been in existence since the emergence of the Neolithic revolution. Before the emergence of western bio-medicine, stockowners around the world struggled to keep away livestock diseases using traditional medicines as determined by their surrounding environment. Among African pastoral communities this struggle remained dominant throughout pre-colonial period as it was in other parts of the world. The Sukuma people of Kwimba district¹ through their oral histories and memories have proved to possess similar ethno veterinary knowledge due to effective understanding of their environment.¹ This understanding led them to arrive at a conclusion that, disease was part of the environment and thus could only be dealt with by environmental means.¹

Studies on ethno veterinary practices have been written mainly from scientific point of view.¹ Historians have rarely documented on ethno veterinary practices in Africa. A study by William Beinart and Karen Brown, *African Local Knowledge and Livestock Health: Diseases and Treatments in South Africa* is an exception as it details historical analysis of ethno veterinary practices in South Africa.¹ However, the study was conducted at a national level and in the subtropical climate of the world while Kwimba is a district lying within tropical

climate of Tanzania Mainland. Climate variability exerts a major influence on plant population, communities and ecosystem,¹ and these variations account for variations in ethno veterinary practices and experiences as well.

Building on Beinart and Brown work's while using the local agency theory, the paper is a response to a position taken by colonial experts and Eurocentric historians who considered indigenous knowledge as a stumbling block to rational progress in Africa,¹ and never acknowledged pre-colonial developments, believing that progress started with the establishment of colonial rule.¹ However, the importance of African local knowledge in the rise of 'colonial science' in the colonies has been well established by social environmental historians such as William Beinart, Karen Brown and Daniel Gilfoyle.¹ This paper follows the footsteps of the aforesaid scholars. The paper argues that the Sukuma of Kwimba did not lie hopelessly at the mercy of livestock diseases. The Sukuma used their environmental knowledge to invent several ethno veterinary items and medicines to control livestock diseases.

Traditional Medicinal Items

Sukuma oral information suggests that the curative work of healers depended on different traditional medicinal items. The

most common items used by the Sukuma stock owners are discussed below.

The first item was *Imago*. This was a traditional Sukuma wooden receptacle used for preservation and administration of different medicinal solutions to sick livestock. Medicinal solution was usually poured into the container to allow sick animals to drink from it especially those who were unable to graze with others far away and confined at home to ensure their effective treatment. The container was made from tree species that were resistant to varying weather conditions or wood-destroying pests,¹ especially subterranean termites that nest in the soil.¹ Good example of such tree species which were found among Sukuma people included the *nyembe*, (*mangifera indica*¹).¹

The second item was called *Izunzu* (plural *mazunzu*). This was a movable grinding stone with a shallow hollow top which may deepen due to continuous and prolonged use. Using a small portable, rounded and well-polished stone called *ng'homango*; *izunzu* was used for grinding and pounding medicinal leaves, barks, roots and other non-herbal medicine before they were used in powder or aqueous forms in treating sick animals.¹ The use of grinding stone among early pastoral communities in East Africa is well known.¹ Movable grinding stones were used by the

Sukuma for grinding cereals,¹ apart from grinding medicinal herbs.

Lyoch / *choma ya kooela* was the third item. This was a piece of hot iron with two functions: it was used for the treatment of East Coast Fever and cow madness on one hand and for branding livestock on the other hand.¹ Despite numerous side effects such as severe pains caused by hot-iron on the side of animals, hot-iron was highly valued and commonly used by the Sukuma for its medicinal use.

The fourth item was called *Losho luguhe*. This was a very sharp and short knife of approximately, not more than the length of the palm of an adult hand. It was a Sukuma traditional surgical knife used purposely to slice the fetus inside the uterus when a cow failed to deliver due to the big size of the calf.¹

Nonga was the fifth item. This was a snail's shell whose major function was to easy administration of small quantities of powdered or liquid medicinal dosage through nasal route to animals suffering from mental disorder, especially cow madness.¹ On the other hand *nonga* was also used by Sukuma healers to administer medicinal solutions and concoctions through nasal route particularly when trying to 'restore the wits' (*kubeja masala*) of the Sukuma people suffering from mental illness.¹

The sixth item was *Itolo* (plural, *matolo*). This was a gourd (*Lagenaria siceraria*¹) originally used by Sukuma stock owners for oral administration of medicinal solutions and concoctions to sick animals.¹

Another important item was *Inungo*. This was a clay pot used for boiling pounded medicinal leaves, barks or roots in order to prepare required herbal concoction to treat sick livestock.¹ In using the clay pot, the necessary ingredients were prepared, combined and placed in the clay pot; the pot was then heated over a three-stone hearth or on charcoal brazier.¹ After sufficient boiling, the concoction was allowed to cool down and then poured in a *nonga*, *itolo*, *imago* or *izunzu* and administered to a sick animal through oral or nasal cavity.¹

Bolongo was also another ethno veterinary item. These were four to six finger-like pieces of wood usually tied around fractured and dislocated bones of a livestock.¹ The wooden materials were used by livestock bonesetters to support fractured bones from physical disturbances and further dislocation which delayed healing of the fractured part. *Bolongo* was made from any tree species; however, two species were common, *nkoma* (*Grewia Bicolor Juss*¹) and the barks of a sisal stalk, the species were found everywhere and therefore easily accessible.¹

The ninth item was called *Lihwa lya nyuguyu* (*Balanites* Sp¹ thorn). This was a thorn used for piercing hand-picked ticks from livestock. When the thorn was full of ticks, it was fired to ensure complete elimination of ticks.¹

The tenth item was *Bunera bo gatani*. These were fibers from sisal (*Agave Sisalana*¹) used as traditional stitches during livestock surgical procedures such as caesarean surgery or when an animal had an injury that required stitching. When stitching an animal, two fibers were used for soft parts like the vagina and three fibers were used for other parts of the body. The fibers were preferred by livestock healers because they could naturally dissolve and be absorbed by the body as the wound healed.¹

Another item was *Logoye lo gatani*. This was a rope made up by weaving sisal fibers. The importance of sisal producing ropes and string in Tanzania had also been noted by Culson.¹ Before administering any form of treatment to a livestock, the animal should first be tied to a tree or pole to restrain movements on one hand and to ensure the safety of the healer on the other hand.¹ This was followed by other procedures such as rising of animal's mouth upward and holding the upper jaw with one hand to open its mouth¹ and ensure easy, safe, and effective drenching.

The last item was *Nswaki gwi ikonge*. This was a local mouth brush made by

pounding one end point of *ikonge* (*Sansevieria ehrenbergii*¹) plant. It was used to clean mouth sores caused by Foot and Mouth Disease. Once the sores were properly cleaned, traditional medicines for sore treatment were administered.¹

Ethno veterinary Practices

Ethno veterinary practices cover several systems and knowledge of maintaining animal health that is based on beliefs, traditional knowledge, skills, methods, medicinal plants, metaphysics, surgical procedures, technologies, and teachings that are used in healing livestock.¹ The practices were also used in Kwimba district as measures against livestock diseases and challenges as shown below.

Lyoho (Black Quarter disease¹) was a common disease affecting livestock in Kwimba district.¹ Cattle aged between six to twenty-four months were mostly affected by the disease.¹ The disease was locally identified by symptoms such as swelling of the forelimb or hind leg making the infected cattle to limp.¹ Other signs included continuous trembling¹ and large number of flies surrounded the sore caused by swell burst. Stomach inflammation and diarrhoea were also other locally known symptoms.¹ Sukuma local knowledge revealed two forms of treatment to the disease. In the first place, stock owners used the fruits of *salyungu* (*Cucurbita sp*¹). The fruits were sliced, pounded and soaked in

water for two or three hours. The extract was poured in the *imago* or *izunzu* to allow sick animals to drink.¹ The second treatment involved a combination of two medicinal plants. The roots of *mfifi* (*Dalbergia Stuhlmannii Taub*¹) and the leaves of *losonga* (*arugula*¹) were mixed, pounded and soaked in water. The extract was poured in *itolo* and administered to an infected animal for two consecutive days.¹ The pharmacological activities of *Dalbergia* genus¹ and *arugula*¹ were effective against various ailments. Thus, through better understanding of their environment, the Sukuma were able to identify and tap the pharmacological value of the plants in the treatment of Black quarter disease. A major feature of the three medicinal plants (*mfifi*, *losonga* and *salyungu*) in the treatment of black quarter disease was their bitter taste. The Sukuma associated the effectiveness of the plants against black quarter disease with their bitter taste. They believed that bitter medicinal plants were more effective against infectious livestock and human diseases.¹ However, the action of these plants was effective only when infections were identified early enough. Unfortunately, the clinical signs of acute form of this disease were usually not observed because of sudden death.¹

Madundo (East Coast Fever¹) was another disease that scourged Sukuma cattle. The disease was more severe in young animals than in adults.¹ As a

result, the Sukuma concluded that, the disease infected calves severely due to their continuous suckling of excessive milk. The common symptom of the disease was swollen lymph nodes below the infected animal's ears.¹ From Sukuma vantage point, destroying the swells provided quick recovery to the sick animals. Therefore, Sukuma developed three forms of treatment.

The first form of treatment involved incising the swells (lymph nodes) and *inala* (*Euphorbia tirucalli*¹) sap was applied on the incisions.¹ The sap helped to make the swells shrink, dry away and finally disappeared. The disappearance of swollen nodes was an indication of recovery. Plant species in the genus *Euphorbia* were widely used in traditional medicine for the treatment of various diseases.¹ *Euphorbia tirucalli* in particular was a common medicinal plant where the plant's milky juice and stem bark were used for medicinal purposes.¹ The plant's juice was also utilized by the Sukuma stock owners in the treatment of East Coast Fever. The second form of treatment involved piercing the swollen lymph nodes and pounded *bupilipili* (*Erythrina abyssinica*¹) paste was applied on the pierced parts to allow fast healing of the wounds.¹ The medicinal value of *Erythrina abyssinica* is evidenced by the existence of its name in various local languages and high frequency of citation in ethno botanical surveys.¹ *Bupilipili*

was also used by the Sukuma stock owners against lymph nodes caused by East Coast Fever. The third form of treatment involved destroying the lymph nodes by passing hot-iron around swollen lymph nodes without causing sores. The process aimed at making the swells shrink and finally disappear.

Madindili (Lumpy skin disease¹) was a common disease affecting Sukuma cattle. Stock owners identified the disease through hard lumps that appeared on the body and hair around the lumps stands up.¹ Though the local people of Northwest Uganda admitted that not much traditional medicine was known to treat the disease,¹ the Sukuma of Kwimba had a number of options. Once the animal was diagnosed with the disease, the first line of treatment was to prepare a mixture of *maguta ga ng'ombe* (locally made ghee) and *magandaga* (*Aloe vera* sp¹) juice. The mixture was applied on infected parts of the skin for at least three days.¹ The effectiveness of *Aloe vera* against diseases is supported by the fact that the plant contains numerous vitamins and minerals, enzymes, amino acids, natural sugar and agents which are anti-inflammatory and anti-microbial.¹ Sukuma stock owners harnessed the properties of this medicinal plant in the treatment of various diseases including Lumpy skin. The second line of treatment was a mixture of pounded dry *itumbate* (*Nicotiana tabacum*¹), pounded

mwarobaini (*A. indica*¹) leaves, and grounded *nyalaja* (rock salt), and water was added. The mixture was rubbed against affected parts of the skin.¹ The effectiveness of *nicotiana tabacum* against skin infection has also been noted among the Jimma of Ethiopia,¹ who also used the plant to treat skin diseases in livestock.

Malonda ga mu nomo na magolo / bugigi (Foot and Mouth Diseases¹) was another livestock disease. Though the disease was unlikely to cause death to animals, it significantly weakened their health. In describing possible symptoms of the disease, one respondent noted that:

The disease was recognized by symptoms like oral and nasal mucus discharge, appearance of ulcers on tongue, gum, nose and lips of a sick animal. Other symptoms included appearance of black spots on the foot, which finally swelled, burst and developed into open sores.¹

There were two forms of treatment to the diseases depending on the location of the sores. With regard to mouth sores, a respondent describe that:

To ensure effective treatment of mouth sores, the mouth of a sick animal was properly brushed using *nswaki gwi ikonge* (*Sansevieria ehrenbergii* mouth brush) dipped in a mixture of

mabhu (ashes) and grounded *nyalaja* (rock salt) or a mixture of *milage* (firewood soot accumulating on the kitchen roof) and powdered *bupilipili* (*Erythrina abyssinica*). Brushing was supposed to be thorough enough to ensure that all mouth sores got into contact with one of the medicinal substances responsible for healing mouth sores. This activity was done twice a day for at least three consecutive days. The importance of *ikonge* in the treatment of Foot and Mouth Disease made most Sukuma stock owners to plant *ikonge* around their kraals to ensure the plant is easily accessible whenever it was demanded.¹

The second option for the treatment of mouth sores involved the use of fruits of *matula* (*Solanun incanum*¹) plant. The fruits were dried, baked and grounded using *izunzu*. The medicinal powder obtained was applied in the mouth sores using *ikonge* mouth brush for at least two consecutive days. The same medicine was also used to treat mouth sores in human beings.¹ The use of *solanum incanum* fruits for ethno medicinal purposes has also been noted among the people of Borno state in Nigeria who use the medicine for the treatment of human sore throats while in Ethiopia the fruit's juice has ethno veterinary use in tick

control.¹ In the same vein, the Sukuma of Kwimba district used the plant in the treatment of mouth sores in cattle caused by Foot and Mouth Disease.

With regards to foot sores, treatment involved two procedures as noted by one respondent:

The treatment of foot sores in the first place involved washing properly the foot sores with warm *nyalaja* (rock salty) water. The second stage involved pouring large quantities of ashes (mainly resulting from burnt cow dung) across the kraal *mita* (entrance) so that animals with foot sores could stamp on the hip of ashes as they got in and out for a number of days. The stamping allowed the ashes to pervade into the foot sores particularly those between hooves and made them dry.¹

Another condition, which although was rare to Sukuma cows, was *Ndasa* (barren cow). This occurred for two reasons. In describing the reasons, Paulo noted that:

The first reason was accumulation of large quantities of fats in the body of a cow (mature female), making it difficult to conceive. Secondly a cow became barren after being bewitched by jealousy people. Sorcerers bewitched a cow for the aim of reducing the number of cattle owned by a rich

person or for the fear that a large cow would also give birth to a large calf that would also finally grow larger, have a good physical appearance and the owner would benefit by fetching high price in the cattle market.¹

In responding to this problem, the Sukuma adopted several measures. The first measure was to constantly involve a barren cow in doing heavy duties such as carrying heavy loads or pulling ox-carts for at least a year. Heavy duties helped to reduce the amount of fat reserves in the body and by so doing fertilization and conception were easily enhanced.¹ The second option was to administer fertility enhancing medicine famously known as *nengonengo* (*Securidaca longipedunculata*¹) which was used to enhance fertility in infertile livestock and women.¹ Local Sukuma diagnosis associated female infertility with direct ancestral causation and *nengonengo* was used to enhance fertility to the women.¹ Sukuma stock owners believed that the ability of *nengonengo* to enhance fertility in female patients applied also to a barren cow. However, when all the treatments failed to provide desired results, the barren cow was eliminated.¹

Another condition was *Kotaja* / *koholasha* (Brucellosis / contagious abortion¹). Sukuma local knowledge identified three major causes of the condition as:

The first cause was a stubborn bull re-mounting a pregnant cow thus disturbing the fetus and the uterus in general. Secondly, the problem was attributed to inheritance and lastly a pregnant cow could be bewitched by jealousy sorcerers in their efforts to reduce the number of cattle in a homestead and make it poor and less developed.¹

Responsive measures to the condition varied. Kishimba commented that:

A stock owner avoided a pregnant cow from being re-mounted and this was done by reducing the number of bulls. Furthermore, a stock owner looked for protective medicine (*lukago*) particularly from outside Sukumaland to prevent sorcerers from bewitching his livestock. Exotic protective medicines such as those from Mbeya, Tabora and Kigoma region were more effective than local ones since their formulations were unknown to local sorcerers and therefore best protected the livestock.¹

Brucellosis remains one of the most zoonotic disease worldwide causing huge economic losses which arise from abortion of infected animals.¹ In Tanzania, to date, brucellosis causes significant economic losses for farmers

due to decreased production resulting from loss of animals through abortion.¹

Koduma kobyala (Dystocia: calving difficulties¹) was a condition where a cow failed to deliver as expected or delivered with complications such as prolonged labour. This abnormality was a result of several reasons as one respondent noted:

This problem was associated with several causes. For example, the fetus could be extremely large to the extent that its dam failed to expel it through the birth canal. Secondly, the problem was caused by improper positioning of the calf during parturition. Under normal condition, the head and front legs should come out first, but this may not be the case, as the calf's hind legs or back would want to lead out first.¹

Another livestock owner said that:

The problem was caused by sorcerers, who bewitched a cow to make it unable to delivery safely, thus causing death to the dam or the young or both. This sorcery act aimed at reducing the number of livestock of a stock owner thus making him as poor as other members of the community who had no livestock.¹

Robin admitted the existence of sorcerers among the Sukuma and their extraordinary power and ability to cast an evil spell which was believed to bring sickness or even death. Their special powers of invisibility assisted them in maintaining their anonymity within the community.¹ This great power of sorcerers was important in afflicting diseases such as dystocia or sometimes death of livestock.

Another cause of dystocia was a bull re-mounting a cow; a process that ended up in disturbing the fetus in the uterus. When this happened, complications were likely to occur and parturition was never safe.¹ But sometimes, parturition complications resulted from a cow having a small birth canal. If the birth canal was very small, the calf failed to come out easily and caused prolonged labour.¹ Generally, dystocia threatened the life of a dam and the young in general.

In response to the threat, the Sukuma developed measures to save the life of either of the two or both. In describing the first measure against dystocia, Zephania noted that one of the treatments was to pound fresh *magandaga* (*Aloevera sp*), soak them in water for a few minutes and drench one *itolo* of the mixture to a dam. This treatment helped the dam to deliver easily, safely and fast; thus, saving the life of both, the dam and the young.¹ Secondly, with regard to

fetal mal-dispositions, another respondent noted that:

In order to help a cow delivery safely, a free hand was inserted through the birth canal to the uterus to properly arrange and locate the calf so that the head and front leg would come out first. Once the fetus was properly arranged inside the uterus, the dam was now helped to deliver by slowly pulling out the front legs and the head of a calf until the whole body was out. This process was easier if no any sorcery acts were performed to a delivering cow and the vice-versa.¹

Thirdly, when it appeared that the birth canal was very small making it difficult for the calf to come out easily and safely, it was reported that:

Under this condition, a minor surgery was done to enlarge the birth canal. In this procedure, a sharp knife was used to slit the upper part of the vagina in order to have sufficient passage for the calf. The injured part was stitched using a needle and a pair of *bonera bo gatani* (sisal fibers). The stiches finally disappeared as the wound healed. If stitching was difficulty, the wound recovered easily by washing it with rock salty water.¹

Fourthly, when the dam suffered from prolonged labour to a point of becoming very tired, lying, failing to breathe leading to very low chance of survival, it was important to save the life of the calf. This was done by cutting and opening up the womb of the dam to take out the calf from the uterus, and the carcass was finally sold to local butchers or used as meat at home.¹

Fifthly, when it was established that prolonged labour was due to the large size of the fetus and that there was no possibility for safe calving, then, a need for saving the life of the dam was important. One respondent reported that:

In saving the life of the dam, the fetus inside the uterus was destroyed and taken out. A hand with *losho loguhe* (short knife) was carefully inserted inside to the uterus and destroyed the large fetus by cutting it into small pieces, beginning with the front legs, and takes them out. Then, hind legs were also carefully cut and taken out of the uterus. When the size of fetus was greatly reduced to fit the size of the birth canal, then, the ears of the fetus were gently gripped to support slowly pulling out of the destroyed calf from uterus and when completed, the dam was safe. This procedure required extra care as minor cuttings inside

the womb of a dam caused death. Good example of a person specialized in this process is a very old man and a healer, Ng'wananzagamba residing at Mwalujo village.¹

The above quotation shows that the Sukuma had developed various measures against calving difficulties. This development was a result of the fact that calving difficulties caused trauma for both cows and their offspring, increased rates of uterine infections, and per parturient disorders such as retained placenta, metritis, longer calving intervals, lower milk production, and reduced health of cows and survival of newborn calves. Calves that survived the trauma of a difficult birth (dystocia) had higher mortality and morbidity in the neonatal period.¹

Another problem was *Igonga kolemela* (placenta retention). Under normal condition *igonga* (placenta) was expelled at least within the first two hours after calving. But sometimes the dam failed to discharge the placenta on time.¹ For example, the dam retained the placenta for six hours. In this case, it was important to remove it before causing metritis, an inflammation of the uterus which caused infertility of a cow.¹ In resolving the problem, a respondent noted that:

The treatment was made by pounding the roots of *nshenu*

(*Cordia Sp*¹), soaked in water for a few hours and one *itolo* of the extract was drenched to the dam for two or three consecutive days, and the *igonga* was finally expelled. After expulsion, the *igonga* was buried deep in the ground or thrown far away from home to avoid the dam from eating it as this caused low milk or complete cessation of lactation.¹

Ethno veterinary potential of the genus *cordia* has also been captured in Mali where the macerate of the leaves was taken to treat trypanosomiasis.¹

Another problem was *Losalo lo ng'ombe* (mad cow disease). Several signs helped stock owners to identify the disease including, twirling of infected cattle to the point of falling, chasing people, aggressive behavior, and restlessness.¹ Another sign included a sick animal refusing to graze.¹ A number of treatments were opted out by the Sukuma. The first treatment involved the use of a *melo / lyocho* (hot-iron) to scald a sign of a cross at the *lopango* (forehead) of the sick animal.¹ The treatment was associated with severe pains caused by *lyocho* at the forehead of a sick animal. This treatment was common and widely used by the Sukuma stockowners because of its effectiveness against the disease. Apart from the use of *lyocho*, there were also some medicines

which were used against the disease. One respondent explained that:

Mad cow was caused by *igino* (maggot) disturbing the brain of cattle. In order to cure this disease, therefore, it was important to remove the maggot from the brain of a sick animal. The medicine to remove this maggot was made by grounding and sieving dried roots of *ng'watya* (*zanha Africana*¹) in order to have very fine powder. This powdered medicine was administered into the nose of a sick animal to produce a severe sneezing effect. Severe sneezing forced the maggot out of the brain. When the maggot was out of the brain, a quick recovery was evident to the sick animal.¹

The *Zanha Africana*, quoted above, particularly the bark, leaves, root-bark and the roots were widely used in East Africa for traditional medicine purposes.¹ *Zanha Africana* was on the top ten priority medicinal trees among the Sukuma and its potential against mental disorder (psychosis) was well recognized.¹ This potential was harnessed by Sukuma animal keepers in the treatment of mad cow disease. The third form of treatment was pounding dried roots of *luhuha* (*Croton megalocarpus*¹) and water was added. One *itolo* of the extract was drenched

orally to a sick animal for at least a week and a quick recovery was evident.¹ The fourth treatment was the medicine made by pounding the barks or roots of *nemu ya Masai* (*Chenopodiaceae*, *Chenopodium*¹), soaked in water for at least four hours and one *itolo* drenched to a sick animal twice a day for three consecutive days.¹ *Nemu ya Masai* was not easily found in Kwimba district, but it was largely found in a nearby district of Meatu, in Simiyu Region. As a result, animal keepers were forced to collect this medicine from Meatu. When the four treatments failed, stock owners opted for the medicines which were used to treat human mental disorder. One example of such medicine was made up of ingredients from the roots of *mfifi* (*Stuhlmannii Taub*), pungent pepper residues which were fermented out in the sun in a soda-bottle hanging on the ancestral altars. The main ingredient of the medicine was the root of a caper plant (*busisi*), *capparis fascicularis* (DC. var *clacagnoides*).¹ Ethno pharmacological studies hold that the plant has a significant immune-stimulant effect of calming the brain's dopamine system, which may reduce psychotic symptoms.¹ When well prepared, this medicine was administered from a *nonga* (snail shell) into the animal's nose.

Another problem was that of *ng'hundy* (ticks). Ticks were prevalence in Kwimba district, mainly because of the nature of the soil, climate, and natural

vegetation especially perennial grasses and scattered shrubs that dominated the area. Ticks seek a relative humid microclimate in which to mount and then a relatively elevated point on vegetation to await a passing host. Ticks need a strong-stemmed vegetation and shelter from sunlight and wind.¹ A ground cover serves as substrate for the condensation of dew, which may be vital factor in the survival of ticks under the arid condition¹ of Kwimba district. Ticks were more evident in Kwimba district during the dry season ranging from June to around early September than in the wet season.¹ Following this prevalence of *ng'hundy* in Kwimba district, the Sukuma adopted several responsive mechanisms to keep their animals free from ticks and tick-borne diseases. The first mechanism was *kodubola ng'hundy* (hand picking of ticks). Hand picking was a common method of tick control among the Sukuma because ticks were easily visible in different parts of the animal's body, and their presence was also evidenced by liking and rubbing at the point of bite.¹ The task of tick-picking was performed by kids who were informed of the exercise early enough, at least a day before so that they could not go out to play far away from home or engage in other activities away from home.¹ During tick-picking, the infested animal was restrained using *logoye lo gatani* and laid for the safety of the pickers. Pickers began picking ticks in areas where ticks

preferred to hide and suck blood such as around the ears, reproductive organs, and hooves.¹ *Lihwa lya nyuguyu* (*Balanites Sp* thorn) was used to pierce the hand-picked ticks which were finally fired to ensure their complete elimination and the wounds on animal's body caused by tick picking were pasted with fresh cow dung to avoid bleeding.¹ One major weakness of this method was that the exercise was only possible to a few docile animals especially the bullocks used for plowing or dams with calves which were usually milked.¹ The second response to ticks was to ground and soak *itumbate* in water, and the resultant extract was used to wash animals infested by ticks.¹

The last approach involved the use of environment, famously known as *kutobanga*, practiced by the Sukuma people. This was the practice of deliberately overstocking in order to induce short, sweet herbage inimical to ticks, although this practice was associated with dry season hardship, it also ensured that livestock was free from diseases.¹ Vegetation of hardpan soils, which was also found in Kwimba, when stayed for a long time without grazing on it, formed excellent standing hay. With intensive grazing, the areas were replaced by short annuals.¹ The short annuals survived the dry season as seeds, forming an attractive greensward during the early rains without a mat of humus and roots. In the dry season this sward quickly wilted. When intensively

grazed, it resulted in bare, hard or powdery earth with a scattering of chaff which was unfavorable condition for ticks to survive.¹ This ethno veterinary practice, which was discovered through trial and error, made the Sukuma to settle in areas dominated by hard pan soils to avoid ticks.¹ While the pre-colonial Masai of East Africa practiced transhumance to maximize grazing and to avoid seasonal ticks,¹ the indigenous Nguni of South Africa invested in breeds of livestock that were naturally less susceptible to tick-borne infections because these cattle had developed a resistance over centuries.¹ The Sukuma of Kwimba on the other hand deviated from the two approaches and anchored on intensive grazing over the hardpan soil vegetation as a way of destroying tick habitation and keeping them away from infecting their cattle with various tick borne diseases.

Added to the problem of ticks was *Kobenzeka iguha* (borne fracture). Borne fractures were caused by several factors including a herd boy hitting an animal's legs with a hard stick, an animal's foot tramping in a hole or sometimes fracture was caused by cattle fighting in the grazing fields.¹ Intervention to bone fracture depended upon specialized healers, particularly bonesetters who used different plants to bring broken bones to their full functionality. The treatment of bone fracture involved two major stages, which were setting

fractured bone in the first stage and the second stage involved the use of medicinal plants to treat bone fracture. The first stage was compulsory before medicinal herbs were applied on the bone fracture.

In the first stage, bone fracture was properly set with support by means of *bolongo*. The aim of this stage was to ensure that bone fracture was intact, free from physical disturbances and the possibility of any other dislocations which could hinder effective and timely healing. The second stage involved the use of different medicinal herbs applied on the area where there was a bone fracture. One respondent noted that:

The medicine for treating bone fracture was made by burning together the husks of *ng'halanga* (*Arachis hypogaea*¹) and a ripen *ibabayu* (*Carica papaya*¹) which has freely fallen, and started wilting. The resultant *mabhu* (ashes) were added with water and the extract was rubbed in the hands of the healer who made massaging movements around bone fracture. The palms of his hands were supposed to be approximately five centimeters away from fractured part. Touching bone fracture with the medicine caused broken part to run septic. So it was strictly prohibited for the healer to touch

a bone fracture with hands rubbed with the medicine or other medicines of similar nature. Another option involved cutting four pieces of fresh *ilamata* (*Combretum molle*¹) and baked them for a few minutes, and thereafter begins massaging the bone fracture from a distant as usual.¹

Another respondent gave his experience on the medicine used in the treatment of bone fracture by saying that:

Bone fracture was easily treated by mixing pounded leaves of *ntunduru* (*Dichrostacys Glomerata Chiov*¹), pounded leaves of *mponda* (*Commiphora Sp*¹), pounded leaves of *ikale / ikalinga* (*Jatropha Curcas L*¹), sand from *nzela maka* (crossroad) and *minzi malala* (water in a pot reserved for one night) were added. This extract was rubbed in the hands of the healer who massaged fractured part from a distant.¹

As a practice, traditional bone setting was found in almost all communities of the world, massaging being the most important aspect and the plant used to make the massage ointment were said by the practitioners to possess magical powers.¹

Cattle were also afflicted by *Nhondo* (wound). Wounds were caused by fighting; piercing shrubs or trees, and sometimes wounds were a result of bites from wild animals such as hyenas. The treatments of these wounds varied depending on the nature of the wound. The first treatment, however, involved pounding the roots of *nungo* / *nungu* (*Fagara Merkeri Eng*¹) to obtain soft powder which was pasted on the wound. The medicine helped to keep away flies but also helped the wound to heal fast.¹ Hyena bites were poisonous and resulted to septic wound if not well attended and treated. As a result, this kind of a wound required anti-septic treatment to allow fast healing. Firstly, the wound properly washed using kerosene. Secondly, *nungo* roots were pounded and mixed with dry hyena feces. The mixture was pasted on the wound and provided a quick recovery.¹ Another treatment to a normal wound was the application of *mabhu* (ashes) on the wound. The ashes helped to keep away flies and allowed a quick recovery.¹ Stock owners were also aware that wound could be treated by washing it with rock salt water and applying *milage* (firewood soot which accumulated under the kitchen roof above the fire). *Milage* was an important fly repellent and quickened healing of wounds in livestock.¹ Another treatment to wound involved pounding a fresh piece of *nangale* (*Euphorbia candelabrum*¹) and the extract was

applied on the wound of an animal. Then, the extract of *igaka* (*Aloe vera*) was to facilitate further healing of the wound.¹ When healing was noticed on the wound after the application of different medicinal herbs, then, *maguta ga ng'ombe* (local ghee) or groundnuts oil could be applied on the wound to finalize healing processes.¹

Conclusion

The paper has highlighted various ethno veterinary practices in Kwimba district showing that the local people were capable of taking initiatives against livestock diseases and challenges before the advent of colonialism. The Sukuma were the agents of their own development contrary to colonial view that, Africans were static, incapable of initiating development and that development began when the continent came into contact with outsiders particularly Europeans.¹

Building on the work of Beinart and Brown,¹ the paper has established that the provision of traditional livestock interventions was facilitated by various items which were used in the preparation of herbal medicines and administration of dosage to sick animals. The items were locally made and used in grinding and pounding medicinal herbs, preparation of concoction, drenching of medicinal solutions, supporting bone fractures and surgical procedures to mention a few. Furthermore, the Sukuma

developed various measures against livestock diseases and challenges using medicinal herbs invented through trial and error and better understanding of their local environment. The herbs played a significant role in the treatment of diseases caused by environmental conditions and those caused by sorcerers. However, the coming of colonialism during the last decade of the 19th century coincided with bio-scientific knowledge that finally diverted the Sukuma of Kwimba District from their traditional livestock management system into a model approved by white veterinary experts. This diversion greatly contributes to the disappearance of Sukuma ethno veterinary knowledge. Thus, there is a need to inculcate this knowledge to the young, document ethno veterinary practices and if possible establish a local museum in order to preserve this valuable ethno veterinary knowledge.

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