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# INDIAN CIVIL VETERINARY REPORTS.

## PUNJAB—THE HAZARA DISTRICT.

From J. A. NUNN, *Veterinary Surgeon to Punjab Government.*

To THE COMMISSIONER OF *Settlements and Agriculture,*  
*Punjab, Lahore.*

No. 349, dated Camp Shahpore, 24th November 1883.

SIR:—I have the honor to forward you the following report on the Hazará district, in accordance with the instructions conveyed to me in your Circular Memo. No. 916 of 16th July 1883. I regret that I was unable to collect the information and furnish this report sooner, but, in the first place, I could not commence before the 20th of August, on account of the difficulty in obtaining carriage in Rawal Pindee; Secondly, the very rough mountainous nature of the country in most of the district, especially in Northern Hazará, rendered it extremely difficult to get about; and, Thirdly, in September I was ordered down to Hissar, having to serve as a member of a Committee on the Cattle Farm.

This Committee was at first ordered to assemble on the 10th September, but, was afterwards postponed till the 20th, on account of the illness of Colonel Robinson, the Superintendent of the Farm and President of the Committee, and I had left Hazará on my way to Hissar before I received the news of this adjournment. I trust therefore, that, taking these circumstances into consideration, it will not be thought that I have taken a longer time than was absolutely necessary. I commenced my tour in the Abbottabad Tehsil on the 20th August, and was engaged on the 21st and 22nd translating and going over the vernacular report submitted by the Tehsildár; on the 23rd I visited Kakool village in the Abbottabad Tehsil; on the 24th I was engaged in Abbottabad with official correspondence, and commenced translating and going through the vernacular report of the Tehsildár of

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Mansahrá. On the 25th I visited the village of Thanna, 7 miles in a westerly direction from Abbottabad. On the 26th, I marched to Sultanpore, 11 miles from Abbottabad on the Hussan Abdal road. On the 27th, I visited the villages of Jungra and Chundá, and on the 28th returned to Abbottabad. I left Abbottabad on the 29th for Murree, *en route* for Hissar, at which place I had received orders to be present on the 10th September, but on the 6th I received a telegram, from the Commissary General at Simla, informing me that the Committee on the Cattle Farm had been postponed till the 20th. I therefore returned to Abbottabad on the 7th arriving there on the 9th, and on the 10th proceeded to Mansahrá. On the 11th I visited the village of *Hamshará* where formerly there had been a Government bull, and on the 12th, the village of Buffa. On the 13th, I went to the villages of Chukluja and Kooshálá in the Jágir of Mohamed Hussain Khan, and inspected five good calves by a Government bull, as far as I could determine a half bred Mysore; in the evening I returned to Abbottabad, *en route* for Hissar, from which place I did not get back till 4th October, and on the 5th went out again to Mansahrá. On the 6th I marched direct from Mansahrá to Balakote, a long and difficult journey the road in some places being very bad, and although I started my camp, with a police guard, the evening before, they did not arrive in Balakote till 3 P.M. and as my mules were completely tired out, I was obliged to halt in Balakote on the 7th. On the 8th and 9th I marched to Kawai and Jared, and reached Kagan on the 10th; I halted on the 11th, and went into the hills to inspect some of the Kagan sheep, which are famous all over the north of India. I left Kagan on the 12th, returning to Jared or Kawai, 13th; Balakote, 14th; Garlu Habile Ulláh, 15th; Mansahrá, 16th; Abbottabad, 17th; and Haripore, 18th. I halted in Haripore on the 19th, inspecting stock the property of Qazi Faiz Allam Khan and Nadir Khan in the morning in Haripore, and in the afternoon those of Khan Zamán Khan of Khalabád. On the 20th I went out to Riháná village, and on the 21st to Kote Najili Ullá. On the 22nd and 23rd I marched from Haripore, *viâ* Khanpore, to Rawál Pindee, from which place, I had to march my camp across country to Bhera in the Shahpore district. By this, it will

be seen that, although occupied from the 20th August till the 23rd October 1883, I was only actually 34 days in the district.

The principal people from whom I obtained information were the Tehsildars of Abbottabad, Mansahrá, and Haripore, the Naib Tehsildár of Mansahrá, Mirza Beg Moonshj of Mansahra Tehsil; Ahmad Khan; Akbar Khan, and Karam Deen, Lumberdars of Kakool; Shar Nur Lumberdar, Mam Ulláh Khan and Nadir Khan (late Sowar, 19th Bengal Cavalry) Zimindars of Thanna. Jamál Khan and Karam Khan (Lumberdars), Mir Khan Zimindar, and Noor Mohamed Saroj, Contractor of Sultanpore, in the Abbottabad Tehsil. Qázi Faiz Allum Khan of Secunderpore near Haripore, Zamain Khan of Kholabad, Nadir Khan of Darwesh, Shah Khan of Riháná, Mukaddam Golám Mohamed of Kote Najihulla. In Mansahrá Tehsil. Mir Allum Khan, village Shahilya iláká Gorhiam, Jummo Khan Mansahrá, Mohamed Hussein Khan ditto; Mulla Habib, village Uttar Shisha iláká Mansahrá, Lohari, village Chair iláká Mansahrá. Khan Mohamed village Jáha iláká Shinkiyari, Abbás Khan village Jhodial iláká ditto, Mohamed Akbar Khan village Hamshirajan iláká ditto, Shero Zamán village Tarangri Bálá iláká Bair Kund, Lál Khan Calakote, and Dalli Mokaddam ditto, I enclose a skeleton map of the district, Appendix A. with the places, I visited marked in red ink and the dates.

*Question, No. 2.*—The district of Hazárá is divided into three Tehsils, *viz.*, Haripore in the south, Abbottabad in the centre, and Mansahrá in the north, a large portion of which is composed of the Kagan valley a mountainous glen, running in a north-easterly direction, bordered by Kashmir on the east, and Chilás and Yagistan on the west, containing an area of about 800 square miles. The greater portion of the district is mountainous, broken up into narrow valleys with mountain torrents running at the bottom of them, and there are three large plains; *viz.*, I., the Hazárá plain, occupying the centre of the Haripore Tehsil which in its main portion is 12 square miles, but including all the valleys that run off it, 200; its elevation, varies from 1,500 feet above the level of the sea at its south-west portion, to 2,800 feet at the north-east. II., the Rush or Orash plain, in which is situated the cantonment of Abbottabad, and the head quarters of the district; area, 15 square miles, elevation 4,000 feet. III., the Phakli plain, in the Mansahrá Tehsil, area 8 square miles, elevation 3,000 feet. The mountains of Kagan run up to 15,000 and 16,000 feet. The climate is most varied, probably more so, than that of any other district in the province, the southern portion, or Haripore Tehsil being as hot as the plains of the Punjab in the warm season, the central being temperate, whereas the northern is cool and in the winter several feet under snow. It will be readily understood, from these remarks on the climate and physical

features of the country, that the breeds and management of cattle and live stock present very great differences, in fact between the small rough mountain cattle of Kagan and the large plough bullocks of Hari pore "some of which are by Government bulls" the difference is most striking. During my tour in the Kagan valley I noticed a large number of small pony mares, admirably adapted for mule breeding, and that for pack purposes all the people made use of mules.

It appears that there is a large export trade of piece goods and hardware, such as copper and iron cooking vessels and brass "*lotas*." These are brought up from the Punjab by merchants for sale in Chilas and the *neighbouring territory*, and they take the route through the Kagan valley to avoid the heavy duty that would be levied on them in Kashmir. These merchants hire transport, and this gives rise to a large local demand for mules, some of which are fine animals. The nearest Government donkey stallion however is at Mansarhá, and the road to that place (as I know from experience) is so difficult that the people will not bring their mares when in season to him, but make use of country donkeys. If a large donkey stallion were available in Kagan, I think that in a short time a large number of transport and artillery mules would be produced. The people would not be put to the *slightest* loss or risk, as any animal not bought by Government would be utilized by the local carriers, and those that were would be a *source* of handsome profit, a gun mule for a mountain battery being worth from 200 to 300 Rupees, and difficult to get at that price. I would propose at first only to send one donkey to the Thaná of Balakote, for the spring and summer months, in charge of the Thánádár, and bringing him back into Mansahrá or Abbottabad for the winter. If the experiment was successful arrangements might be made for more to be sent further up the valley. I have written to the Deputy Commissioner of Hazará on this subject. I do not think the Kagan valley would be well adapted for breeding cattle, as the country is very cold and covered with snow in the winter, but, if any attempt were made in this direction, a scotch Kylee, polled Angus, Radnorshire polled, or Kerry bull should be used, all those at Hissar are too large, even the smallest of them, the Mysore. A half-bred Guzerat Mysore bull was formerly stationed in Kagan but the

people did not like him, as he was much too large to cross with their cows, and, from the severity of the climate and scarcity and rough nature of the grazing, fell away very much in condition. This bull was removed from Kagan and is now in charge of Sháh Khán of Riháná in the Haripore Tehsil. The Haripore Tehsil is well adapted for raising cattle, and the people do so largely.

*Question No. 3. CAMELS.*—There are 286 in the district, viz: 3 in Abbottabad and 283 in the Haripore Tehsil. They have come into use altogether since the British occupation, as formerly, owing to the absence of roads, they could not be used. Now however the people in Bedang, Tarbeyla, Khálsá, Sarai Sháh, Kote Najibullá, Khánpur, Kandi Kahal, and Ghunda Ghur are beginning to use them, a few are bred in the district, but most are purchased at Kálábágh on the Indus in the Bannoo district. A fact worth noticing is, that the inhabitants of Hazara call these camels "*Beloochies*," but they are large thick set animals with long dark hair, just the same as I saw when in Afghanistan, and were there called Bokhara camels. I think it is more than probable that these camels are brought from Afghanistan to Kálábágh, but, never having been in the Bannoo district, I cannot say. They will carry from 6 to 7 maunds; riding camels are very seldom used and vary in value from 50 to 100 Rs.

*BUFFALOES.*—In the Haripore Tehsil but few are bred, most being purchased from Swát and the Trans Indus states, or else from the large fairs at Amritsar and other places in the Punjab.

The cow buffaloes, brought from down country are always at first found to fall off very much in their milk, on account of the difference in climate and pasturage as compared with the plains. The Swat buffaloes are distinguished from those of the Punjab by their large heads and massive horns. In Abbottabad a few more are bred. In Mansahra, down country buffaloes are never kept, as they cannot stand the cold of the winter and are unable to climb the steep hill sides to graze. The Hazára buffalo is a much smaller animal than the Punjabee, standing about 50 inches high, the limbs, heads, and muzzles are much finer, the hair longer, and the horns generally turned backwards. The cows are always kept for milk, which is manufactured into "*ghí*;" Tanaul and Balakote villages in Mansahra being celebrated for this production.

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The males in Haripore and Abbottabad are used for turning persian wheels, and in Mansahra and Kagan for pack purposes; but not, as a rule, till they are 3 years old, up to which time, they are turned out to graze. Buffaloes' manure is commonly used, but it is not such a strong manure as that of goats and sheep. Buffaloes are seldom used for ploughing as they are too slow, and when they are one is yoked with a bullock. This is only done by poor people, who cannot afford to keep a proper pair of plough oxen, value from 20 to 80 Rs.

OXEN.—There is the greatest difference in the cows and bullocks of Haripore and Mansahra or Kagan the latter of which are small hardy animals able to climb the steep sides of the hills in search of grazing, like goats. They vary in height from 50 to 55 inches and are red or black in colour with rough hair, partaking more of the nature of Welsh or Kerry cattle, than anything I have elsewhere seen in this country. In Kagan a large number of bullocks are used for pack purposes, but in Abbottabad and Haripore most are used for ploughing. A marked feature of these hill cattle is the very small size of the hump, compared with those of the plains.

The cattle of Haripore appear to be a very mixed breed owing to the facilities for importing from the Punjab and the Government bulls that have been present in the Tehsil for some years. Heifers are occasionally used for ploughing but milch cows seldom if ever. The small country cows are worth from 12 to 25 Rupees, and oxen about 50 Rs. if good; some of those in Haripore by Government bulls have, however, been sold for 180 to 200 Rs. a pair.

SHEEP.—The best sheep are found in the Kagan valley and more resemble Dart-moors or Ex-moors than any others. They are rough hardy animals, generally white (although I have seen some black) and without horns. The wool is fine, and of a very close texture, and from it is made some of the very best "puttoo," in the Punjab. This is made only out of picked wool, the coarser locks are woven into large grey blankets and "Numdahs." The ewes are kept for breeding and wool, only the males are eaten. A cheese called "Ainch" or "Kalari," about 1½ seers in weight, is made out of the ewes milk. Few sheep are kept in the Haripore plains, but a large number in Bedang, Kondal, Tarheylá,

Khári, Gandgar, Sarai Sháh, Búgráh, Kundi Káhal, and Khán-pore. These sheep are nearly all black or grey in colour, and their wool is much valued for weaving into black blankets. Their value varies from 2 to 4 Rs. for a ewe or wether, up to 10 Rs. for a Ram; they are about 24 inches high.

GOATS.—These animals vary very much in the hills and plains, those of the latter being small with close black hair, about 24 inches high. Those of the former are some of them very large, running to as much as 36 inches in height at the withers, they are generally of a white or piebald colour, and the hair is very long at the quarters, and down the hind limbs as much as 9 inches in length. There is a breed of goats in the Abbottabad Tehsil without horns, with very short ears and fine hair, which is, I believe, very rare, and brought from the independent territory trans Indus. Goats hair is used to make "*Saletas*" for camels, "*Tobras*" or nose bags, "*Tharas*" or pack saddles for bullocks, and ropes. A large number of goats are kept in Bedang, Kondal, Tarbeylá, Khari, Gundgur, Baghra, Kandi Káhal, and Khanpur, in the Haripore Tehsil, which the inhabitants of the neighbouring districts come from long distances to buy. Only the bucks are eaten, and the people generally use the milk themselves, reserving that of buffaloes and cows for the manufacture of Ghee. The manure of both sheep and goats is much valued and in places flocks of sheep are folded on the land at night; farmers sometimes even hiring flocks of sheep from the stock owners for this purpose. The value of a goat varies from 2 to 8 Rupees.

HORSES.—Have only been lately bred, since the Government have placed stallions in the district; and chiefly in Haripore Tehsil, from which a considerable number of remounts for the native army is annually procured. I saw both here and in Abbottabad during the course of my tour several promising colts by Government stallions, but which were unfortunately being ruined by the abominable native custom of keeping them tied up by head and heel ropes, and a sharp spiked native bit in their mouths.

At Ulláhiwál in Yagistan there a celebrated breed of ponies, a few of which find their way into the Mansahrá Tehsil, and are highly valued, fetching from 150 to 400 Rs., as they are very sure footed in the hills and have a fast ambling pace that is much esteemed by natives. I was shewn one specimen in Mansahra,

and it very much resembled a Yárkandi pony only the head was smaller and more thorough bred looking. They stand about 14 hands high, and are very stout built and strong limbed. Ponies are also imported from Kashmere, but they are not so valued as the Yagistánee, being said not to stand the climate or heat of the valleys so well; they are worth from 12 to 100 Rupees and are used for pack purposes in the hills, carrying from 1 to 2 maunds; horses are only ridden by rich and influential persons for show and display. Country breeds vary in price from 100 to 250 Rupees, and those by Government stallions from 150 to 400 Rupees. In Kagan I saw a number of small stout square built ponies, admirably adapted for mule breeding, of which I have made mention in Para. 2. In the village of Bálákote alone, as I was informed by the Thánadár, there were 300.

**MULES.**—Are largely used all over the district for pack purposes, and in the hills for riding. Since the introduction of Government donkey stallions, they have much improved, and the people have taken to mule breeding as an industry, those fit for Artillery purposes find a ready sale at a large profit. In para. 2, I have mentioned a plan for placing the services of a Government Donkey stallion at the command of the inhabitants of the Kagan valley, which if successful, might hereafter be much extended. The ordinary load for a mule is from 2 to 3 maunds, and their value is from Rs. 60 to Rs. 250, or those fit for Artillery to Rs. 300 or more.

**DONKEYS.**—Are all very small, but strong stout animals, carrying from 1 to 2 maunds. In Bálákote a few much larger ones are brought down from Kohistán. They are chiefly in possession of the Ghujars, who in the summer drive their flocks up to the highlands round Loolusar Lake at the head of the Kagan valley, and, when the snow falls, gradually work downwards to the low lying hills about Rawal Pindée and Jhelum. In the Haripore Tehsil, since the Government donkey stallions have been there, the people have taken to importing donkey mares from Thall, in the Kohat district, which when put to Government stallions produce a good cross. The price of donkeys varies from 6—10 Rupees.

**FOWLS.**—Are of the ordinary country species, except at Tarbeyla, and in the Nawáb of Umb's territory where there is a breed with dark feathers, called by the people "Peshaurie."

Question No. 4.—In Mansahrá Tehsil, animals as a rule get nothing but grazing and “*bhoosa*,” either white or “*missa*,” generally the former, except in Balakote, Bhogurmung, and Kagan, where there is none available; in the “*ilakas*” of Mansahrá, Pakhli, and Tanaul, about  $\frac{1}{2}$  to 1 seer of some sort of grain, whatever is cheapest, is given, except in the months of July, August, and September during the rains (when the grass is springing and is exceptionally good) when it is discontinued. Grass is cut and made into hay all over the district for winter consumption, in September or October, and in northern Hazará up to the time the snow falls the animals are left out to graze. During the summer the owners of sheep about Bhogurmung drive their flocks over the border to a place called Chor in Yagistan, bringing them back when the snow falls. The people of Kagan in the winter drive their sheep downwards into the low hills; a man going in charge of those of each village. In course of my inspections in former years I have frequently met immense flocks of Kagan sheep in the hills of the Murree and Kahutá Tehsils of the Rawal Pindée district, several hundreds in number (and in a letter, a copy of which was forwarded under cover of my No.  $\frac{37}{V}$  of the 15th February 1883, to the Military Secretary, Punjab Government) I pointed out what a large influence these flocks have in the spread of disease about the country, one Lumberdar informing me that no less than 300 sheep and goats had died, close to his village, the skins of which were sold three for a Rupee. Milch cows and buffaloes, when in milk get from 1 to 4 seers of mustard seed oil cake (*Khal*) which is broken up and mixed with parched barley (*Ardawah*) and Mothi laye (*Caroxylon Fœtidum*). Plough bullocks from the middle of May to the middle of June when doing the hardest work are given 1 to 2 seers of arđawah at 12 noon, and pack bullocks get the same ration when working. In Abbottabad the method of feeding is the same except that cotton seeds (*Bisaula*) are used.

In Haripore the mixture of mustard seed oil cake and Arđawah is continued up till the middle of October, and white bhoosa is often added, when the mixture is called *Ghótá*. From October to May *Kherty* (the dry stalk of the Sorghum Vulgare) and green “*moth*” (*Phaseolus aconitifolius*) is given. Camels are

turned out to graze, but when working some people give them from  $\frac{1}{2}$  to 1 seer of any grain available.

The different GRASSES I collected, I sent to your office for disposal, and I give below a list of them. I much regret that I am not a sufficiently skilful botanist to classify them scientifically, but, from reference to the "*Plants of the Punjab*" by Dr. Stewart, I have given the Botanical names, as far as I could determine them; I would, however, suggest that, if possible, they be submitted to some one who is competent to give an opinion on them. Those that I have collected specimens of I have put in italics, the others are the names which were given to me by the Tehsildars in their reports. The botanic names I have given in brackets (in so far as I have been able to determine them):—*Kattal*, *Dab* (*Eragrostis Cynosuroides*); *Barú* (*Sorghum Halepense*); *Savánk Suriálá* (*Heteropogon Contortus*), *Khabbal* (*Cynodon Dactylon*); *Munyárá*, *Chhanji*, *Barun*, *Dadrah*; *Pilwanh* (*Andropogon annulatus*); *Chitkhari*, *Iundar*, *Pharah*, *Biran*, *Dagrah*, *Buji Babbar* (*Eriophorum comosum* or *E. Cannabinum*), *Chhinjya*, *Bhedghai*, *Chhant*, *Ros*, and *Dabh*, *Chamera*, *Pirjou*, *Mallah*, *Ránjah*, *Dila* (this name applied to 3 sorts of grass, viz., *Arundo Phragmites*, *Cyperus tuberosus*, and *Seirpus Maritimus*, vide pages 250, 264, and 265 of "*Punjab Plants*") *Shattal*, *Sanjana*; *Kai*, *Chitkhari*, *Gidár*, *Kangna*, *Mallaghas*, and *Rausa*.

Question No. 5.—I regret that I was not able to find out many of the PROVERBS OF THE COUNTRY relating to the management of their stock, as the people talk a language which is a mixture of Panjabee, Kashmiri, and Pushtoo, and the two last I am ignorant of. The only two I could ascertain, was, one relating to the fertility of the valley of Chor in Yagistan, in which it is said, "that a thin horse will be ready to sell in a week," and another, referring to the difficulty of ploughing a field with a buffalo and a bullock yoked together, which says "an old man who marries a young wife is as great a fool as he who ploughs with a bullock and a buffalo," relating I presume to the fastness of one and the slowness of the other.

Question No. 6.—The list of NAMES OF DISEASES from which the animals of the district suffer is no less than 40 in number, and the treatment and supposed causes in many cases fearful and wonderful, indeed in many cases the marvel is not so much that

any of the patients treated after the regimen given die, as that any of them survive such handling. In the reports submitted to me by the Tehsildars, in but few instances were any of the symptoms of the diseases given, and those only in the most meagre manner. I questioned many head men of villages, stock owners, Zimindars, officials, &c., and the usual reply given, was that the animal was (*behosh*) senseless, the blood bad, and either diarrhoea or constipation present. In some cases I have been able to recognize the disease and have given it its scientific name, but in others it was impossible. It appears to me, from the experience I have had while employed on special duty in the Punjab, that the average native, even "those who have to do with animals," is incapable of recognizing or taking note of the symptoms, progress, and changes that take place in a case of sickness, and I received the most conflicting and contradictory statements. I do not think that without actual personal inspection of a case of each disease mentioned it would be possible to recognize them with any degree of certainty, and to do this a much longer stay in each district would be necessary than I had time to afford. I am perfectly certain that many of these diseases are merely different names for the same complaint when it attacks different animals of the same species, such as cows, oxen, bulls, and calves.

I submit a list giving the vernacular names, and their proper designations as far as I could determine, but, for the reputed causes and local treatment, I have thought it better to give a translation of the Tehsildars' reports.

No.	Vernacular Names.	English Names.
1	Bari Zahmat ..	Rinderpest.
2	Sirhi ..	Do.
3	Phaldie ..	Do.
4	Mori ..	Do. in camels.
5	Galghotu ..	Gloss Anthrax.
6	Merún ..	Do.
7	Munhkhur ..	Foot and mouth disease.
8	Gari ..	Anthrax, Black-quarter, (and in Abbot- tabad) Gloss-Anthrax.
9	Pihlá ..	Anthrax.
10	Pharún ..	Do.

No.	Vernacular Names.	English Names.
11	Táká	Rheumatism, but (in Abbottabad) used for Tetanus in buffaloes.
12	Kalnikári	Tetanus.
13	Chándni	Do.
14	Bar	Do.
15	Ahgar	Do.
16	Khúk	Strangles.
17	Húk	Do.
18	Pharikki	Splenic, or Heat Apoplexy in goats.
19	Buddhi	Do.
20	Khárish	Mange, Scabies, or any skin affection.
21	Pán	Do.
22	Hadda	Bone Spavin.
23	Mútráh	Bog Spavin.
24	Chakaul	Ring bone.
25	Mir Haddi	Splint.
26	Peváh	Canker or Thrush in the foot.
27	Súl	Colic.
28	Dard	Do.
29	Gogir	Do.
30	Kaná	Any running from the nose, Catarrh and Glanders.
31	Ros	Corn in the foot.
32	Mal, Mil, & Ranj	Red water (Hæmato-albuminuria).
33	Sukrá	Impaction of Omasum (Fardel-bound) in Sheep.
34	Thanpáká	Mammitis.
35	Paláká	Fowl Cholera.
36	Sukha	Husk in Fowls.
37	Pilchhi	Husk in Calves and Lambs.
38	Zahrbad	Lymphangitis (in Horses).
39	Thandi	Small-pox in Sheep.
40	Tiddi	Do.

The following is a translation from the Tehsildars' reports on the different diseases, the names of the tehsil from which the information was derived, is given opposite each paragraph.

1. *Bari Zahmat*.—(Abbottabad) only attacks buffaloes, cows, and oxen, the animals stop eating and drinking, and dysentery sets in; the disease is incurable, and no medicine is given, but "fakirs" are employed to pray, and charms are used, a common one, is a lamp made out of the hoof of a dead horse filled with Cherpine



oil (*Pinus longifolia*) and a wick made out of a piece of yellow rag; as long as this lamp is kept burning, it is believed that Rinderpest cannot attack the cattle in the house; it is also believed to ward off Small-pox in human beings.

2. *Siri*.—(Abbottabad) attacks buffaloes, cows, oxen, and sheep and goats. It commences with dysentery and is incurable. (Haripore) very contagious and virulent, if it attacks one animal in a village the whole of them die; it is incurable.

3. *Phaldi*.—(Haripore) is said to be caused by eating plants that grow on lands covered with Reh; there is no treatment and the animal dies from debility.

4. *Mori*.—(Haripore) attacks camels, there is no treatment.

5. *Galghotu*.—(Haripore) attacks all horned cattle, in the same manner as "*Khunak*" or mumps in man, respiration is altogether stopped, and it is generally fatal. Treatment is firing over the swollen part. (Abbottabad) attacks buffaloes, cows, oxen, and horses. The animal chokes and stops eating and drinking. This disease is said to be incurable in horned cattle, but with horses the leaves of the "*Beinfsha*" (*Viola Serpens*) tree are used as a poultice. (Mansahra) said to attack all sorts of animals in the throat, ulcers form on the outside, and the animal stops eating and drinking. The disease is considered to be incurable, some people apply actual cautery to the throat, but generally without success.

6. *Merun*.—(Abbottabad), is said to attack buffaloes, oxen, cows, sheep, and goats, in the same way, as "*Galghotu*," the treatment is the same, only from this they are said to often recover.

7. *Munhkhor*.—(Abbottabad) attacks buffaloes, oxen, cows, sheep and goats, vesicles form in the mouth and feet, which break and give exit to pus and the animal stops feeding and drinking. In those in which the mouth is attacked, "*Urd*" flour (a species of *Dál*) is made into cakes with mustard oil and forced down the animals throat. Those in which the feet only are affected, are made to stand in running water, these are said to quickly recover. (Haripore) matter forms in the feet and the tongue becomes sore. The attack lasts about 10 days. Cakes made of "*Urd*" flour are given hot, and the ashes of the leaves of the "*Jawd*" tree (*Prosapis Spicigera*) are applied to the feet. For 24 hours the sick beast is made to stand in

water. (Mansahra), the disease attacks the animal in the foot and mouth; ulcers are found on the tongue, and boils on the feet between the hair and the hoof. Treatment is generally, cakes made of "Urd" flour given to the animal to eat as hot as he can bear it, so that the vesicles in the mouth may break; for the feet, the ashes of the "Chhandur" tree are applied, and the animal made to stand in water. Sometimes small worms (*i.e.*, fly blows) are found in the feet, which are then treated by a poultice made of lime and peach leaves. The animals generally die of starvation during the time they are sick, as they cannot eat anything and the people give them nothing.

8. *Gari or Ghatri*—(Haripore), the disease attacks animals in the shoulders, which become swollen; the treatment is to fire the swelling with a cautery. (Mansahra) this disease attacks animals on the thighs and legs, which get swollen, and the animal stops eating and drinking—people generally fire the swollen place, but the disease is incurable, and the animal generally dies. (Abbottabad) the disease is described as being the same as "Golghota" only that there are ulcers found inside, instead of outside, the throat; it is incurable.

9. *Pihla*.—(Haripore), is caused by animal eating new grass, when diarrhœa sets in and the chest and neck become swollen. The root of the "*Thangi*" (*Corylus Calurna*, or *C. Jacquemontii*) is ground up with "*Atta*" and given to the animal. (Mansahra) caused by eating new grass, when in bad condition. A swelling appears on the throat, and the water of the grass is passed instead of fœces. The root of the "*Soanjna*" tree (*Moringa Pitrygosperma*) or Horse radish tree, is mixed with *Atta*, and given to the animal in the form of large pills. The disease is incurable.

10. *Pharan*.—(Abbottabad), attacks cows, oxen, and goats; there is a swelling inside the body, and on the ribs. Treatment is firing the swelling with a red hot fig stick (*Khand*).

11. *Tákú*, (Abbottabad) only attacks buffaloes. The animal turns cold and stops feeding. Treatment: "*Banakhor*" seeds (*Arohá Cachemirica*), "*Marwan*" leaves (*Vitex Negundo*), "*Timar*" seeds (*Coriaria hepalsensis*), onions, ginger, red chillies, black pepper, and "*Lassun*," are all mixed up together with "*Gur*" into balls, and given. (Mansahra) this disease attacks animals when they are working hard and are taken to water

without giving them time to get cool. Treatment is, to place the animal in a house, giving milk and "Ghi" to drink, the body is rubbed over with "ghi" and salt and covered with blankets; often a fire is lit near the patient and some people draw a line all round the body, commencing at the nose, with a hot iron; if attended to, the animal generally recovers. (Haripore) attacks all horned cattle. It is not common, and is said to be caused by exposure to the cold after being heated with hard work. The animal appears cramped and moves with difficulty. Treatment, a fire is lit in the house and the animal is tied close to it, the body is clothed with warm blankets; "Gur" and milk are given as a drench, and salt and oil rubbed into the skin, till the animal perspires. Some people fire the withers on each side of the hump. The attack is said to generally last for 8 or 10 days, and, though apparently cured, the animal is never any more good.

12. *Kalnikári*.—(Abbottabad) the animal leaves off eating and drinking, it attacks cows, buffaloes, and bullocks. Treatment; "Mindhal" leaves (*Randia dumetorum*) and flour are made into gruel and given.

13. *Chandni*.—(Abbottabad), attacks horses, mules, and donkeys, oxen, riding camels, and pack animals that have galled, or sore backs that have been left exposed to the rays of the moon, particularly a full moon. This disease is incurable.

14. *Bar*.—(Abbottabad), this disease makes its appearance in donkeys, mules, horses, and buffaloes, when they are taken while warm to water. Treatment is bleeding from the legs, if blood flows the animal will recover, but if it does not, he will die. The flesh of a jackal is boiled and given, mixed with "Gur," and black pepper, Marwan (*Vitex negundo*), ginger, and black pepper. (Haripore) attacks horses and is caused by exposure after work. Treatment; cows' dung and water as a drench; it also attacks camels accompanied with bleeding from the nose, it is caused by irregular loading on the march; spirits and water are given. (Mansahra) treatment is bleeding from the knee, but the disease is generally looked upon as fatal.

15. *Ahgar*.—(Haripore), attacks horses, and is caused by exposure to heat and cold. The animal refuses food, stands quiet, and dies in from 6 to 7 days, but if this period passes, he may then be considered out of danger but takes a long time

to recover. Treatment is a draught composed of buffaloes dung, spirits, and blood, with bathing in warm water. It is said that if this treatment is at once given the animal will recover.

16 and 17. *Khúk or Húk*.—(Abbottabad) attacks horses, mules, donkeys, oxen, cows, buffaloes, and riding camels. The throat swells, and sores form inside. Treatment; hot applications and poultices of the "*Banafsha*" (*Viola serpens*), "*Marwan*" (*Vitex negundo*) leaves, or the root of the Nargay. (Haripore) attacks horses, the throat becomes swollen, and the animal refuses food. Grass is boiled in water and then tied round the throat, and hot spices are given internally. (Mansahra) attacks horses, mules, and donkeys; a boil forms in the throat. "*Sambal*" (*Nardastachys Jatamansi*) and *Chalandar* (*Iris Nepalensis*) roots are tied round the neck, to cause the boil to burst, when this takes place the animal recovers.

18. *Pharikki*.—(Abbottabad) and (Haripore), only attacks goats and sheep; no symptoms known, except that the animal utters a cry and falls down dead. (Mansahra), is a contagious disease and is incurable, attacking sheep and goats. The animal dies at once giving vent to a peculiar cry. Flock owners are in great dread of this disease, as it kills a large number.

19. *Buddhi*.—(Abbottabad) only attacks sheep and goats, the animal is only sick for one day, it is much the same sort of disease as "*Pharikki*." (Haripore) attacks sheep and goats that are over two years old. The animal hangs its head, saliva runs from its mouth, and it dies at once. The only treatment adopted is slitting or cutting off the ears.

20 and 21. *Kháirish or Fán*.—(Abbottabad) attacks all animals. Treatment "*Sirron*" and "*Tara Mira*" (*Raphanus Raphanistrum*) oil are used as an external dressing. (Haripore) attacks goats and sheep, it is caused by poorness in condition. *Tarí Mira* is put into a lamp and a splinter of "*diar*" wood (*Pinus Longifolia*) is used as a wick and set fire to, when it has burned out the oil is used as a drench, and is rubbed into the skin, but this treatment is said to be not often successful. (Mansahra) this disease attacks animals as a result of starvation and leanness; people treat it, by giving *Tara Mira* oil both internally and externally, and also the oils of the "*Devi Diar*" (*Cupressus tortulosa*), *Tali* (*Dalbergia Sissoo*), or "*Shishani*," and *loh*.

22. *Hadda*.—(Abbottábád) only attacks horses and mules; a swelling that appears to be very hard comes on the back. Treatment, Káláziri (seeds of *Aplotaxis Conchians*), "Mal" (*Populus Alba*), "Kangi" (*Euphorbia dracunculoides*), "*Sohaga*," "Kaun," "Bahekar," chillies, black pepper, and salt are made into balls, with flour, and given internally. (Haripore) the treatment is actual cauterization. (Mansahra) same treatment.

23. *Mutráh* or *Mutrá*.—(Abbottabad) the same internal remedies as before, as well as the actual cauterization.

24. *Chakaul*.—(Abbottabad) attacks horses and mules, is a swelling on the coronet; some people fire the part, others bleed from the coronet.

25. *Mir Haddi*.—Treatment; cauterization. This is described as being the same as *Haddi*, only occurring between knee and fetlock.

26. *Pevá* or *Peváh*.—(Abbottábád) A swelling appears on the heel, between hair and hoof. Treatment, the foot is placed on a hot brick with some grass underneath, and then cold water poured over it.

27. *Súl*.—(Abbottabad) attacks horses, mules, and donkeys. Shewn by a pain in the stomach, the animal stops eating and drinking, and appears very uneasy. Treatment; *Banákhār*, *Ajwain* (*Liquisticum ajawan*), black pepper, and salt are made up into balls, and given with "*Ghi*," milk, and warm mustard oil.

28. *Dard*.—(Manshrá) same disease as "*Súl*," treatment warm "*Ghee*" and milk, mixed with "*Banakhār*" and warm spices.

29. *Gogir*.—(Haripore) Colic, caused by watering horses directly after feeding. Treatment is a draught composed of cowdung and water.

30. *Kanáar*.—(Abbottábád) attacks horses, mules, and donkeys; the animal coughs and matter runs from the nose. Treatment, "*Gugal*" root (*Dalomicca Macrocephala*, or *Myrsine Africana*) is put into a ball made out of "*atta*," and is baked in the fire for 2 hours, when it is taken out, ground up with fine flour, and given in the form of a bolus. Also a yellow rag is burned and the smoke blown up the nostrils. (Mansahra) The animal coughs and matter runs from the nose. Treatment is "*Gur*," onions, and *Lassun*, given internally with country spirit, also

the smoke of a burning blue rag is blown up the nose, unless the animal recovers within 15 or 20 days, there is no hope for him.

31. *Ros.*—(Abbottabad) attacks horses, ponies, mules, and donkeys; the animal is lame, the foot becomes swollen, and, after a little time, a sore place appears on the sole of the foot, this is either fired or else opened with a knife.

32. *Mal, Mil, or Ranj.*—(Haripore) attacks cows, buffaloes, and bullocks, is a contagious disease. Treatment is barley flour made into gruel with "*Lasse*" (buttermilk). Fakirs are also largely employed to use charms. (Mansahra) is looked upon as a contagious disease and incurable, but cattle that have once had this disease never get it again. (*It is doubtful whether Rinderpest is not meant*).

33. *Sukra.*—(Haripore) attacks sheep and goats, and makes them very thin and poor; old rancid ghee is given internally.

34. *Thanpáká.*—(Haripore) is a rare disease. Treatment is a hot brick placed under the animal, which is then milked on to it.

35. *Paláká.*—(Mansahra) attacks fowls like cholera, and is incurable.

36. *Súkha,* (Abbottabad) attacks fowls. Symptoms, are a bad cough. "*Lassun*" is given made up into pills with flour.

37. *Pilchhi.*—(Mansahra) said to be caused by eating *Reh* (or Saline efflorescence) on the ground, worms are found in the lungs, and the disease is incurable, but not contagious.

38. *Zahrbád.*—(Haripore) attacks horses, both externally and internally. Blood is passed in the urine, the limbs swell and sores form on them. Treatment, warm spices. (Mansahra) is said to be confined to the chest and not to be dangerous, warm spices are given, and after 4 or 5 days the animal recovers.

39 and 40. *Thandi or Tiddi.*—(Abbottabad) attacks sheep and goats, all over the body, like "*chechak*" (Small-pox)—Treatment, bathing in warm water, and rubbing the body over with mustard oil. (Mansahra) this disease attacks sheep and goats, in the nose and on the body. Mustard oil is rubbed on the body and the animal generally recovers.

*Question No. 7.*—There are 6 bulls in the district, *viz.*, one with the Nawáb of Umb, and the other five in the Haripore tehsil. There were formerly in Mansahra and Kagan, but two fell over Khuds while grazing and were killed, and the third

was transferred to Haripore as he was neglected by the people and not used, because he was too big for the mountain cows. He is at present in charge of Sháh Khan of Rihana, Haripore tehsil. The following are the names of the persons in charge of the bulls.

1st, Mukkadam Golam Mohamed of Kote Najibullah. This bull I did not see, as he had been sent away with a herd of cows on some land belonging to Mukkadam Golam Mohamed near Hasan Abdál, in the Rawal Pindee district. 2nd, a Guzerat Hurriahnee, in charge of Khan Ziman Khan of Khalabad. 3rd, a Guzerat Harrihancee in charge of Qazi Faiz Allum Khan of Secunderpore. 4th, A Guzerat Mysore in charge of Shah Khan of Rihana, which was transferred from the Kagan valley. And 5th., a white pure bred Guzerat in charge of Nadir Khan of Darwesh. This animal is useless for breeding purposes, and was reported by me as such, with suggestions as to his disposal in my diary for the week ending 27th October 1883. No register is kept of the calves, but the following list of the produce known to have been born has been given to me, by the Tehsildar of Haripore:—

Kote Najibullah, 263; Khalabod, 55; Secunderpore, 3; and Rihána, 18. This however I do not think, anything like represents the real numbers. The large number by the Kote Najibullah bull can be accounted for by the people about Darwesh and the surrounding villages making use of him. The bulls all seem in good condition, and are well looked after and appreciated by the people. Even to a most casual observer, the difference between the common country cattle, and those by Government sires is most striking. The following are a few examples of the measurements of their stock:—At Rihana, by Kote Najiballah bull out of country cow, a 6 months old calf, height 37 and girth 41 inches; a four months old calf out of an Amritsar cow, height 37 and girth 39 inches. A four months old calf out of country cow, height 37 and girth 39 inches. At Kote Najibullah, a yearling bull out of country cow, height 46, girth 53 inches; a yearling heifer, height 47, girth 54 inches, and very many others, whereas the ordinary country cow when full grown, averages about 40 inches in height, and 60 in girth. I also saw two calves, four and five months old respectively the property of Qazi Faiz Allum Khan of Secunderpore, by his Guzerat Hurriahnee bull out of two cows from the banks of the river Ramee in Montgomery district, which

were given to him by you some years ago. I much regret, I was not able to measure these calves, as I was only shewn them just as I was leaving Haripore but they were two of the finest I have ever seen in the country. The owner told me that he had bred a number of calves from these cows, and had obtained large prices for them. As far as I could make out in former years there were four Government rams in Haripore, but they are said to have all died and the only produce that they left, that I could hear of, was one ram, the property of Minat Khan of Rihana. Eight more rams were subsequently supplied from Hissar, but they are said to have all died, leaving 30 male and 7 ewe lambs. These rams and bulls are placed in charge of the individuals whose names are given, and are turned out with the herd grazing with them, and at present I do not see any other way adopted of managing them. It certainly would be better if only the best selected females were allowed their services, but without some special agency and grant of money I do not see how this is to be done.

*Question No. 8.*—There are no fairs in the Hazará district, but the Tehsildar suggests that a small cattle fair be held in Haripore, which he thinks would be very popular with the *Zemindars*.

(Signed) JOSHUA A. NUNN,  
*Veterinary Surgeon to the Punjab Government.*

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## APPENDIX.

*Statistical Statement to accompany Note on the Live stock of the Hazará District.*

	Tehsil Abbot- tabad.	Tehsil Hari- pore.	Tehsil Man- sahra.	Total District.
Total area—Square miles ... ..	640	667	1,463	2,770
Acres ... ..	457,001	427,099	936,910	1,821,010
Area acres <i>uncultivated</i> ... ..	337,307	290,512	791,119	1,418,938
„ „ <i>cultivated</i> ... ..	119,694	136,587	145,791	402,072
Area of cultivation, that is irrigated acres ... ..	5,288	19,651	10,822	35,761
Population—Total souls ... ..	134,962	124,648	121,879	381,489
Souls per square miles, total area ... ..	189	187	83	459
Do. cultivated area ... ..	187	582	535	1,304
Stock—Cows and Bullocks ... ..	45,847	57,573	58,731	162,151
Buffaloes ... ..	10,703	15,033	2,286	28,022
Sheep ... ..	3,522	30,218	9,115	42,855
Goats ... ..	42,830	46,475	53,439	142,744
Horses ... ..	432	485	1,419	2,336
Mules ... ..	622	249	675	1,546
Ponies ... ..	663	600	197	1,460
Donkeys ... ..	565	4,606	457	5,628
Camels ... ..	3	283	...	286
Pigs ... ..	...	...	...	...
Total stock ... ..	105,187	155,522	126,319	387,028
Number of stock of all kinds per square mile, total area ... ..	148	233	100	481
Number of Carts ... ..	6	...	...	6

J. A. N.

