THE TRADITION OF EQUINE VETERINARY LITERATURE IN PRE-COLONIAL AND COLONIAL INDIA: THE WRITING OF *FARAS-NAMA* LITERATURE

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Abstract

The history of veterinary science and animal-medical-wisdom in relation especially to horses, has largely remained unexplored under the social history of the medical sciences in India. However, the concern for medical health of the horses was a primary focus amongst animal healers and the writers of the 17th century faras-nama, and also the translations of theses texts in the 18th century. These texts were popular not only among physicians but also amongst the state authorities because animal-medical-wisdom and the associated scientific knowledge was an important part of administrative concern. The surveillance of horses and their health remained the state's concern under the Mughals, and even continued under the English East India Company rulers, while both maintaining strong cavalry. The state provided patronage and protection to veterinary profession, veterinary education and veterinary writers of the equinemanuals i.e., the faras-namas, the treatise on the horses, throwing light on the rearing, caring, healing and management of the horses is, therefore, useful. This paper argues that people skilled in knowledge of equine veterinary sciences enjoyed aristocratic prestige as 'men of horses' under the Mughals, but, the subsequent vernacularization of the 'faras-nama' in the 18th century made highly

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specialised equine-veterinary-knowledge as part of common people's culture.

Keywords: animal-medical-wisdom, *equine*, East India Company, *faras-nama*, horse, knowledge, medical-culture, *salotri*, equine-veterinary-science, vernacularization.

Introduction

In India, there is a long tradition of *faras-nama* writing dealing with the *equine* veterinary sciences.[1] Generally defined as part of *adab* literature for the horses, these are literary manuals providing veterinary details on horses. Out of these, the Mughal *equine* veterinary texts, like the *tarjamah-i-saloteri-asban*,[2] the *tuhfat-al-sadr*[3] and the later Mughal text, the *faras-nama-i-rangin*[4] are distinguished encyclopaedic compilations. These manuals are termed as the 'treatises on the horses' that provide vast social, cultural, and political understanding about the valued animal.[5] The texts are important because they deal with veterinary aspects of the horses, provide qualitative instructions on good horses, and indicate precautions for the care and management of the horses. In addition, the *equine* veterinary texts deal with the quality of horses, their mode of selection, their treatment from diseases, diagnosis of diseases and preparation of medicines for healing purposes.Thus indicate 'medical-wisdom' related to horses was integral to *equine* veterinary treatises. Consequently, horses defined the imperial culture with horsemanship in the royal court and even consolidated strength of the imperial army, as well. Indeed, horses were considered the most valuable asset, and its maintenance, rearing, caring and management required equine-veterinary-medical-wisdom, which got fulfilled through the composition of equine-veterinary manuals.[6]

The texts on veterinary sciences written in early British period are also an abundant source of information on the veterinary profession. The texts narrate useful information on how veterinarians identified the types of horses and modes of their selection by observing their external physical conditions. They enumerate types of diseases, their symptoms and treatment, including preparation of the medicines, and the use of medications made from familiar and accessible natural herbal plants and indigenous minerals. The texts highlight the procedures for treatment of horses, most importantly, they offer information about *equine* knowledge and science of pharmacopoeia and its popularity amongst the Mughal gentlemen as well as the

local people. Veterinarians did not offer services in peace time only. They were also required and associated with the complex events of a war. The idea of veterinary care of animals in war fronts was known and quite popular in India. The state adopted the notion of saving life of animals who suffered in war. This was of paramount importance. Loss of awar-animal was considered a financial loss to the state, therefore, the veterinarians were considered necessary, and important, to minimise the economic loss through medication and healing of thewar-animal properly for combat purpose. It was mainly aimed to protect the state from catastrophe in war. Hence, authors of the *equine* veterinary treatises were called 'men of the horses' and the veterinarians were seen as following a gentleman's profession.' Indeed, the equine manuals written during the Pre-Colonial and Colonial period permit an examination of the development of the veterinary medical culture in India.

The Tradition of Equine Veterinary Literature Writing during Pre-Colonial Period

The process of writing texts on 'animal-healing' has a long history in India. It accords central place to the 'horses' in the veterinary literature with many treaties focused on the treatment of diseases relating to elephants, camels and other such draught animals. This can be traced from popular mythical tradition which has a large following in the Indian sub-continent. The methodologies discussed in the *ayurveda-samhita*, for example, emphasize indigenous medical knowledge and the utility of herbal plants for their medicinal value. It explains their charismatic power of healing and also provides information from where the herbs can be procured. The *ashtanga sangraha* of Vagbhata and *hatsyaurveda* of Palakapaya are treatises on diseases, and their treatment, for both humans and elephants. Other ancient books like, *hatsyaurveda*, *ashwashastra* and *ashwadarpan* are some of the most famous works in the Indian veterinary sciences. They deal with the anatomy, physiology, diseases and their management in detail, along within formation on the healing of elephants and horses. Dhanwantari the sage prince of *Benaras* is regarded as the patron-god of all branches of the Indian medicines.[7] He explains in detail about the Vedic therapeutic methods on Indian alchemy in *rasachikitsa*. He suggested that pharmacopoeia of medicines as described in *rasachikitsa* could be utilised for all incurable diseases of mankind, elephants and horses as cures by adopting the *rasachikitsa* pharmacopoeia of medicines. The earliest literary text from

India dealing with horses and their rearing, caring, and military importance, are Kautilya's *arthashastra* and Kalidasa's *raghuvamsam*.[8]

The rulers of the Sultanate period were deeply interested in the compilation of veterinary medical works, treatises, diagnostic details, medication directories and calendars. Both Zia-ud-din Barani and the author of *sirat-i-firoze-shahi* mention that the treatise of *shikar-nama-i-firozeshahi* was prepared by Firoze Shah Tughlaq, the Sultan of the Delhi Sultanate. Zia-ud-din Barani emphasizes that Sultan Firoze Shah was an expert in the art of treatment of animals.[9] The *faras-nama* of Abd-Allah Safi, also called the *bahmani-faras-nama* (1407-08), is dedicated to Sultan Ahmad Shah Wali of the Bahmani dynasty.[10] This text has preserved some of purported chapters from the *faras-nama-i-farsi* of Mahmood Ghaznivi's reign. Another medieval *faras-nama* text, the *faras-nama-i-hasemi*, compiled by Zayn-al 'Abedin Hosayni Hasemi is dedicated to Sultan Shams al-Din Muzaffar Shah of Gujarat.[11]

Under the Mughals, the notion of veterinary science and knowledge of animal-medical-wisdom became a convention among the veterinarians/animal-healers. They collected and wrote ethological philosophies of animal medical sciences in textual form. Their conception of veterinary knowledge was a result of assimilation that happened due to exchange between Persian and Central Asian traditions of veterinary medicines with Indian traditions of veterinary practices. Sayed Abdullah Khan Firoze Jung, the author of *tarjamah-isaloter-i-asban*, describes how several chests of Indian books were seized during the expedition against the dominion of Rana Omer Sing. Among these books was the *saloter*, or the treatise on the horses in Sanskrit language.[12] Firoze Jung also noted that the compilation of this book took a long time. It contains 19,000 *slokas* or stanzas. It was only later, under the patronage of the Mughal Emperor Shah Jahan that the seized text *saloter* was translated into Persian language under the title of *tarjamah-isaloter-i-asban* by Sayed Abdullah Khan. It is a reflection of medical interaction of the Indian *salotri* with the Islamic traditions of equine veterinary practices. He was honoured by bestowal of the title of 'Firoze-Jung' by the Mughal Emperor.[13] In order to render it as a complete and perfect text, necessary for the caring and treating horses of the Mughal cavalry, some selected passages were added in this text from a treatise on horses – the *faras-nama-i-farsi*, originally written and compiled in Persian during the reign of the Sultan Mahmood Ghaznavi, but continuedto be in use by the Mughals.[14]The *tarjamah-i-saloter-i-asban* contains the Arabic and Central Asian knowledge of veterinary sciences especially

related to horses.[15] The *faras-nama-i-farsi* provided a ground for the exchange of *equine* veterinary information amongst the Hindu and Muslim veterinarians. This text also opened an opportunity for medical interaction of the Indian *salotri* (Indian horse healer) with the Islamic tradition of veterinary practices. These efforts were encouraged and reorganised by the state by providing patronage to veterinarians. Because of utility and importance of *equine* text for the maintenance of a healthy and strong cavalry for the state, it was preserved in a translated form.

Another Mughal text on *equine* veterinary science is *tuhfatal-sadr* or *faras-nama* of Sadr-al-Din Mohammad Khan b. Zabardasht Khan.[16] He was a *mansabdar* during the reign of the Mughal Emperor Aurangzeb Alamgir. Written under the patronage of the Imperial court, the book followed writing tradition of *tarjamah-i-saloter-i-asban* and collected information on horses meant for noble people. The *faras-namas*, written under patronage of the state, were meant for the use of aristocratic people only and not for the common populace. The Mughal *faras-namas* and *asb-namas* are part of the *furussiya* literature. Apart from the anatomy, physiology, disease and management of horses, the *furusiyya* literature on the *faras-namas* depict the great efforts were made for expanding knowledge on the animal-medical-wisdom.

In 18th century, vernacular Urdu had become language of masses. The *faras-namas* also came under growing influence of Urdu and many texts were either written or were translated in that language which popularised the aspects of animal-medical-wisdom focused on veterinary cures for care of the draught animals. This helped in expansion of veterinary knowledge among ordinary people that resulted in weakening the dominant hold of certain families over the *equine* veterinary practice. As the veterinary treatises in Urdu language became available for everyone the Urdu manuals on the horses were public oriented rather than state-centric. The *faras-nama* texts written primarily in the 18th and also during the 19th century, in Urdu language are – the *rahat al-faras* and *salhutar* or *ketab-e asb-nama* of Anand Ram Mokhlis, the *faras-nama* of Muhammad Abdullah of Lucknow, the *faras-nama-i-rangin* of Sa`adat Yar Khan 'Rangin', and the *ziant-al-khayl* of Munshi Muhammad Mahdi. These are some of the most popular treatises on horses.[17]

The 18th century veterinary treatises provide extensive details of animal ailments as recorded by professionals, and are largely based on the indigenous and traditional methods of treatment of animals like the horses.These texts give details of anamnesis (case-history),

which to some extent dictates type of treatment and methods of medication to be given to the horses. They provide stepwise guidance for diagnosing particular *equine* diseases. Additionally, they give information on whether diseases diagnosed in a horse were specific or general, and whether these could infect any other animal. They also provide information on the ways and means of preparing various kinds of medicines, as well. But they are lacking in the practise of surgery. Surgery was favoured only on external parts of horses while treating ailments.[18] The 18th century *faras-namas* explain that the Indian *salotri* avoided large surgeries of internal organelle, but they were expert in analysing ailment and in prescribing medicines. They did not favour internal surgical operation.[19]

The Education of Veterinary Science during Pre-Colonial Period

The education of veterinary sciences ran parallel to the medical education pertaining to human beings. Like the *unani*, *tibbiya* and *ayurveda* sciences, the skill of veterinary knowledge was generally considered a family inherited knowledge that was retained within the families of veterinarians, who would impart that knowledge only to the apprentices in the houses of veterinary teachers/practitioners. The study was based on apprenticeship in the homes of a teacher. The medical-knowledge remained confined to members of the same family. As observed by, Edward Iver, who visited India in 1755 A.D., observed that like the other professions, the medical profession was also carried on by the same families from one generation to the other generation.[20] Regarding the continuation of profession within the same family, Francois Bernier notes, "the embroiderer brings up his son as an embroiderer, the son of goldsmith becomes a goldsmith and a physician of a city educates his son for a physician."[21] Traditionally, there were neither separate institutions nor an examination system on medical sciences that could allow common people to access to the medical profession.[22]

The medical education on veterinary sciences remained tutor oriented in which the profession of veterinarians were practiced by the members of the same families. Although, outsiders were invited by the physicians, including surgeons and veterinarians to work as assistants under them, the master guided the assistant and taught him medical science. Abdul Qadir Badauni in *nijat-ur-rashid*, narrates that those who desired to be a learned medicine practitioner, had to work under the spiritual guidance of a reputed physician and surgeon to acquire practical and theoretical knowledge of medical

sciences.[23] After completing such formal training, the trainee was granted a *sanad* (certificate) by his master. Without attaining or obtaining a *sanad*, the trainee could not be authorised to continue the medical practice. Similar criteria were applied to a new person who wanted to become a famous veterinarian, either he was to be a member of the family of the veterinarian or he was to work as an assistant under the guidance of a veterinarian.

Persons skilled in the knowledge of *equine* veterinary sciences were titled as 'men of the horses.' They were also known as theoreticians on *equine* veterinary medicines. The writing of the *equine* veterinary treatises was an integral part of their profession through which they expanded the brand knowledge on diverse spheres of animal science. Such knowledge was not limited to only one sphere.Writing a book on veterinary sciences, and the techniques about treatment of animals/horses in general, granted prestige to the scholar, reflected his popularity among the physicians, and authorised him to work as a teacher of the veterinary knowledge. Pupils were always eager to join the circle of veterinary practitioners, enjoying their company to receive the veterinary knowledge and aspiring to become famous veterinarian like their master. Apprentices also wanted to receive a *sanad* or the right to practice or to teach what they had learnt from their master, orally and practically. Their immense knowledge about animal diseases, and their medication, offered a vast reservoir of treatment remedies about the horses. They were also regarded as 'men of the pen' being involved in various occupations related to animals: functioning as traders of horses, as intermediaries between the state and the local trader of animals, and as supervisors of the professionals who were involved in medication and healing of the horses. These included the apprentice veterinarians too.

In the Mughal period, the veterinary science was part of an elite education that was centred to the nobles. It was considered a 'gentleman's' profession. Under the patronage of the Mughal court, veterinarians were even appointed on administrative posts along with a certain rank of *mansab*, according to the nature of their job, there was thus an overlap between the nobles and the veterinary men in terms of status and ranking. The veterinary education also helped in the recruitment of the specialised staff of inspectors, as veterinarians and animal experts, to examine the pedigree and health of the animals.[24] The branding of horses on the face,[25]according to their characteristics and qualities was explicitly done under the guidance of specialised animal inspectors and expert veterinarians. For example, Muqarrab Khan was the famous veterinarian during the reign of the Mughal Emperor Jahangir.[26] He supported the training and

education of veterinary sciences because of the Imperial demand. Similarly, Firoze Jung, the author of *tarjamah-i-saloter-i-asban*, was involved in the writing of veterinary treatise while holding the rank of a *mansabdar*. His familiarity with the theoretical veterinary knowledge of horses, placed him among the Mughal nobles as one of the most privileged and influential persons. Due to the military importance of healthy and fit horses in the cavalry of the Mughals the veterinarians continued to be patronised and offered high administrative posts as well as land grants. These were given to the veterinarians in lieu of the treatment of the horses and other draught animals of the royal stables.

The Mughal Equine Veterinary Science and the Imperial Culture

During the Mughal period Indian medical profession achieved paramount degree of specialisation.[27] Simultaneously, symptoms of veterinary diseases, in particular, begin to be analysed by observation skills which were influenced by scientific, logistic, and experimental methods and forms.[28] The *hakims, tabibs* and *jarrahs* (surgeons), ophthalmologists, specialised surgeons, pharmacologists, sexologists, anatomists alongwith the veterinarians constructed what came to be called the Mughal 'medical-culture' that exist under the Mughal patronage.The Emperors took immense interest in veterinary medical sciences, and patronised the veterinarians as 'the men of gentlemen's profession,' primarily serving in the welfare of the state and its people.

The Mughal *faras-namas* primarily impart theoretical and epistemological details onhorses, however, the texts are equally instructive in nature. These inform that the Mughal 'gentlemen' could differentiate and determine the pedigree, the race and the age of the horses while purchasing them. The horses were categorised according to their origin and qualities.[29] The information contained in the texts also reflects on the scientific approach followed by the veterinarians. The texts include qualitatively detailed instructionswhich the veterinarians were to follow[30] regarding the features of good horses, their body structure in accordance with race,[31] precautions to be taken for the care, health and management of the horses in the stables.[32] The medieval veterinarians keenly observed the symptoms of animal diseases after they mastered the *faras-nama* information, although they applied treatment according to their personal observance and experience based on

the symptoms of diseases.[33] It is to be noted that the pharmacopoeia of manufacturing the medicines for healing diseased horses was a blend of medieval Islamic and traditional indigenous knowledge.

The traditional Indian veterinary texts on horses were the centres of interest for the Mughal veterinarians and the Mughal rulers encouraged the preservation of traditional veterinary medical knowledge into organised textual forms, like the translation of Sanskrit veterinary text, *salooter*, into Persian, *tarjamah-i-saloter-i-asban*, by Sayed Abdullah Khan Firuz Jung working under the imperial patronage. Such textual forms reflect the philosophical and intellectual impact of veterinary sciences preserved by the Indian *salotris*, the veterinarians hailing from Brahmin families. They served as the repositories of the *equine* medical knowledge forming an integral part of the 'medical-culture.'[34] The *equine* veterinary system gradually evolved as a hybrid Indo-Islamic (Hindu-Muslim) knowledge of animal diseases. The *equine* manuals written under the Mughals show a close impact of Indo-Islamic veterinary medical-culture that would gradually endow the scribes with aristocratic virtues, etiquettes, and comportments. Apart from their translation into Persian and Arabic, the Indian equestrian literature attracted the Mughal nobles, gentries, and *ashrafs* as the base to acquire knowledge of the veterinary sciences. Like other human medical surgeons and physicians, the veterinarians came to be regarded an important class of the Mughal society and they enjoyed social prestige as other aristocratic Mughal gentleman.

Abdullah khan Firoze Jung's *tarjamah-i-saloter-i-asban*, a translated Persian manual during Shahjahan's time, reflects the adoption of Islamic and Hindu methodologies for curing the horses.[35] Another work as treatise on the horses was written by Zabardasht Khan, entitled the *tuhfat-al-sadr* or *faras-nama* under Aurangzeb.[36] This covers the encyclopaedic information on the qualities, breeding, diseases and its ailments of the horses.[37] Both these Mughal sources are a complete guide providing profuse information on how to control diseases in horses. They specially deal with feeding, grooming and care of the horses to protect them from diseases. They also provide an elaborate description on several types of diseases and their possible treatment, covering detailed analysis on the pharmacopoeia of the veterinary medicine and the process of manufacturing.

The entire process increased an exchange of medical knowledge among the physicians, surgeons, pharmacologists, medical scholars and veterinarians in the Mughal period. The veterinary texts were popular not only among the physicians and surgeons, but it

also opened up the avenues for the veterinarians to emerge as an important class to reckon along with nobles. However, less popular veterinarians, who were not able to attain aristocratic status, began to perform their veterinary practice in local markets for the benefit of local people.[38] They utilised their veterinary knowledge for care and healing of animals in local *bazaars* or local markets which also became popular for the benefit of common people who were living in the state's periphery.[39]

The state, however, made efforts to include the veterinary medical knowledge a very much part of the Mughal medical-culture. It was essential for the Mughals to keep war-animals healthy and disease free to fulfil the conquest nature of the Mughal state. Since the cavalry was the main strength of the Mughal military structure, a veterinarian also served as the mainstay of the Mughal army.[40] The maintenance of the healthy war-animals was under the veterinarians who worked under the *atbegi,*[41] *person* in-charge of all the horses belonging to the government. They enjoyed social prestige of an aristocratic gentleman in that capacity. Moreover, the veterinary manuals were written under the patronage of the court which gradually began to endow even the veterinary scribes with aristocratic virtues and etiquettes. The veterinarians could not be ignored. Once they mastered the skills, the Mughal emperors patronised them by appointing them to high posts.

During the reign of Emperor Jahangir, Muqarrab Khan and Hakim Ali Akbar were renowned surgeons and medical philosophers,[42]who encouraged veterinary medical knowledge by arguing that there was a similarity in observance of symptoms of diseases in human beings and animals. Muqarrab khan was an expert bleeder and a veterinarian,[43] an expert in the treatment of the royal elephants and horses. It is important to note that as a renowned surgeon, physician and veterinarian he enjoyed the honour of highest *mansab* of 5,000 *zat* and 5,000 *sawar*, and was appointed as the governor of three provinces during the reign of Jahangir.[44]Although the occupation of veterinarians was not as prestigious as that of Persianate physicians they were considered more valuable due to their association with caring and healing of war-animals. Their contribution was regarded as an essential act and a service for strengthening the Mughal military might. They were, therefore, treated as an equally important part of the Mughal 'medical-culture.'

The Mughal 'medical-culture' provided the ground for the growth and expansion of the *equine* veterinary science. Skilled veterinarians were not the only ones patronised by the Mughal state,

even the procurement of veterinary medicines was allowed only to the aristocratic families.[45] Seema Alavi has argued that the process of medical-healing regarding the human diseases was central to the making of the Imperial political culture.[46] Simultaneously, the war-animals were also the centre of medieval medical-healing. The Mughal aristocracy was completely dependent on the veterinarians for maintaining their cavalry. It can, thus, be argued that animal-healing was part of the Imperial political culture. Because the proximity of veterinarians to the Mughal court ensured good health to war-animals, they were regularly appointed as special staff of inspectors and animal experts to examine the health of war-animals.[47] For this reason, the veterinarians remained eligible for patronage and grant of royal endowment from the Mughal aristocrats, as well.

Veterinary Science during the 18th Century and the Colonial Period

The transitional phase of the 18th century and the Colonial reign was very important in the history of Indian veterinary sciences where various works as the treatises on horses and journals on the Indian veterinary sciences were written under the patronage of several regional rulers and the English East India Company officers.[48]A series of books including Indian equestrian manuals that are translated from Persian and Arabic to Urdu and other languages appeared in this period. At the same time, new books on the horses were written in the Urdu language.[49] All of them followed a writing tradition of the Mughal equine veterinary treatises, discussing details on the rearing, caring, management and healing of the horses. Such equestrian texts helped to continue the Mughal veterinary knowledge along with the regional texts for forming manuals on veterinary sciences. In this way, traditional Sanskrit *equine* veterinary knowledge that had amalgamated with medieval *equine* veterinary knowledge,[50] was retained during the transitional phase of the 18th century and Colonial period, respectively. British officer D.C. Phillott was engaged in the translation of *faras-nama* texts and other Indo-Islamic texts into English. The 'Perso-Arabic' treatise on horses, the *tarjamah-i-saloter-i-asban* of Abdullah Khan Firoze Jung was translated into English by James Earles under the patronage of the English East India Company. Simultaneously, the Urdu *faras-nama* of Muhammad Abdullah lithographed under the Awadh state preserved medieval treatise on horses in the translated form.

Numerous pupils from various communities attained knowledge

of the veterinary science via such texts.[51] This meant that veterinary knowledge hitherto available mainly to aristocratic people, or those close to aristocracy, now became available to the common people. The education and training in veterinary practices helped in raising the status and standard of the people in the society. The veterinarians remained in demand and they taught veterinary sciences. They also supervised their assistants and students who desired to become veterinarians. For instance, Sa'adat Khan Rangin, the author of *faras-nama-i-rangin*, authenticates that he had always supervised his pupils about the medication of the horses that were brought for treatment.[52] The veterinary medications and methods of treating animals became so popular that the owners of the animals started applying remedies on their own rather than consulting a skilled veterinarian.[53] The knowledge of *equine* veterinary science had percolated to other rungs of society.

During this period the horse had become a commodity that reflects status of the people in the society. Almost every well-off family had started maintaining horses for their personal use, also to upgrade their status. Such locally influential people also maintained lower varieties of horses for their personal use and other benefits. The local influential men were purchasing horses that became the main item for salefrom fairs such as the Sonepoore fair or Harihar Chattar mela, which are considered to be one of the oldest fairs in India.[54] Similarly, horses from Arabia and Tatar carried by merchants from Kabul and Kandahar to the fairs were popular among local rulers and zamindars.[55]They also required the wisdom on animal sciences for the healthy maintenance of horses and other draught animals. The *faras-nama-i-rangin*,[56] became one of the most popular people oriented *faras-nama* in the 18th century and the Colonial reign that equipped common populace with required knowledge of animal-medical-wisdom for maintaining their horses. The text was written in Urdu language by Sa'adat Yar Khan 'Rangin', the most renowned late 18th century *salotri*, as a veterinarian besides being known as surgeon performing surgery on outer parts of the horses.[57] The *faras-nama-i-rangin* was not to find favour from those in power. 'Rangin' wrote that his intention was certainly not to provide explanations on methodologies of veterinary sciences for the ruling authorities.[58] He adds that his main intention for writing the treatise on veterinary science was to support the subjects of the state.[59] To popularise veterinary wisdom among the common masses, he printed numerous Urdu editions of the *faras-nama-i-rangin* for sale, and did not intend to make these an elite collector's item.[60] On

the other hand, he availed the *equine* veterinary sciences accessible for everyone. Simultaneously, through the knowledge of veterinary sciences 'Rangin' attained prestige.

The medical-wisdom of veterinary sciences was also encouraged and popularised by the officers of the East India Company.[61] The Company appointed Indian veterinarians and translators under its banner of the East India Company in their cavalry regiments.[62]At the same time they encouraged translation of Persian and Urdu veterinary sources into English. Consequently, numerous veterinary research institutes and stud farms were evolving in England for the production of quality horses.[63] By incorporating Indian traditions and methodologies they improved their skills of the veterinary treatment of draught animals for multiple purposes. The recruited Indian veterinarians and translators who were supervised to assimilate, and collect information and knowledge on veterinary medical sciences which were then sent to the newly established veterinary research institute in London. Thus, contrary to the general understanding that science and medicinal knowledge flowed from Europe to India, we find the reverse flow in the realm of veterinary sciences.

The Colonial Interaction and Inter-Exchanges of Equine Veterinary Knowledge

During the Pre-Colonial times, the army regiments were practically considered as the personal responsibility of the military commander. This practice even continued under the English East India Company till the end of the 18th century. Under the Mughals, it was the personal responsibility of military commander to recruit technical staff that includedveterinary surgeons. The method for caring the sick animals in service was very simple. If the horses were not too sick to walk then they were allowed to lead, along with the baggage. If they were found to be suffering from serious illness then they were left behind provided with some basic medications. This was the context in which the English East India Company developed the veterinary branch of their military and began to recruit veterinarians for care and healing of the animals. Every regiment of the English East India Company had its own doctors and veterinary surgeons, and even hospitals for the sick soldiers and animals.[64] In the last decades of the 18th century, a veterinary school was established in 1791 at London,[65] from where properly trained professionals were sent for the veterinary care of horses in the Company territories all over the globe. The Company used the London model to set up veterinary schools and breeding

centres for horses in India also. The idea was to train and recruit veterinarians locally and to breed horse indigenously.[66]

In order to survive against the military power of the indigenous rulers in India, the English East India Company mobilised the power of cavalry troopers along with the horse artillery.[67] The Company needed healthy war-horses for this purpose. As a result,the Company officers were spending large revenues on the procurement of war-horses. Due to their political and military significance, the prices of horses were always higher in comparison to other draught animals.[68] Thousands of rupees were paid to horses' agents for the procurement of the best quality horses, especially the Arabian mares to encourage breeding of horses in the Company studs. Apart from this, the Indian environment was not much favourable for the foreign breed horses; the warm and humid climatic conditions caused several kinds of endemic diseases in them, making the maintenance of cavalry regiments a costly affair.To find an alternative, the Company established studs and breeding centres in India where Arabian mares began to bred with Indian horses, in order to get physically fit and stronger so that they could resist the Indian endemic diseases.[69] In 1795 A.D., the English East India Company established a stud and breeding centre at Pusa in Bihar (then in Bengal) to maintain regular supply of horses for their cavalry regiment.[70] The Madras and Bengal studs were also established to produce suitable horses for the Company cavalry. The Company even instructed that all horses recruited in the government studs for breeding purposes should be of Arabian and Persian breed, especially good mares selected from all parts of the country.[71] The company also recruited veterinary doctors as stud in-charges and also in cavalry regiments, to provide proper care and management to horses.

The English East India Company evolved as a new political authority in the 18th century India and to challenge the Indian powers they also made efforts to strengthen their cavalry forces,[72]and tried to exploit the traditional knowledge of Indian veterinary sciences. The Company provided patronage to both Indian and foreign writers of veterinary literature who were to collect information by translating Persian and Urdu *equine* manuals,[73] and to incorporate the knowledge of Indian animal-medical-wisdom. The East India Company also utilised the knowledge of Indo-Persian veterinary sciences for treatment of diseased horses, utilising this for horse breeding purposes. The English officers, like William Moorcroft, Joseph Earles, and Colonel James Skinner took special interest in collecting knowledge and information from the Persian and

vernacular sources known to discuss the indigenous methods of veterinary treatment.[74] The Company officers utilised indigenous methods of treatment that wereconsidered more effective and cheaper to strengthen their cavalry than the English medicine. Another aim was to explore the indigenous *equine* veterinary sources to understand their content and to figure out the context in which Western medicinal techniques could be introduced. Indeed, this vernacularized Persian and Urdu treatises on the horses.

The Company's impact on Indian animal-medical-wisdom was double folded.[75] On the one hand, the Company officials interacted with the Indian scholars and translators to explore the value of translating Indo-Persian animal treatises on indigenous *equine* veterinary system. On the other hand they tried to replace the traditional and popular indigenous animal-medical-culture through the spread of Western medical science and technology. At first, the Europeans were explorative about the Indo-Muslim *equine* veterinary culture that was more advanced and more developed in India than the European *equine* veterinary culture. Although their methodology was scientifically advanced they were mainly dependent on the Arabo-Persian and Indo-Muslim *equine* veterinary culture to gain theoretical knowledge of Indian animal-medical-wisdom. Initially, therefore, the British encouraged the vernacularization and translation of the Arabo-Persian and Indo-Muslim veterinary manuals. The purpose was to adopt and assimilate the indigenous *equine* veterinary medical sciences and raise the standard of their horses in the cavalry by providing proper medical care and management. A secondary aim was to provide better facilities for the breeding of horses to fulfil their military demands. Later on, the Company power began to approve Western ideology of science and technology by publishing books, pamphlets, and journals in English, and, in other Indian vernacular languages in order to popularise the Western veterinary medical-culture in India.The Company opened veterinary hospitals and stud farms in India, introducing these on modified and innovated form of veterinary treatment and new practices of breeding, which were referred to as modern, advanced, and more fruitful than the indigenous and traditional forms of Indian veterinary practices. This provided proper ground for popularisation of Western veterinary-culture in India. As a result, the spread of Western scientific knowledge in Indian vernacular languages began to popularise Western veterinary sciences in India, thus widening the ground for that knowledge among the people. We can say that translation of the Indo-Islamic *equine* veterinary texts in English, popularising Western

scientific knowledge in vernacular texts, and the establishment of various stud farms and veterinary hospitals as part of the Company's policies, widened the access of ordinary people to *equine* veterinary knowledge.[76]

One of the best surveys about Indian horse breeding was produced by the Scotsman William Moorcroft (1767-1825 A.D.).[77] Moorcroft's main duty was to supply good horses to the local British forces through reproduction and breeding which could survive well in the Indian sub-continent against endemic attacks. He was the first Company officer with a complete formal veterinary education. The English East India Company had appointed him as the Superintendent of the Company's Indian stud. William Moorcroft made an unauthorised pilgrimage to several parts of the Indian subcontinent to explore its hydrography, to tap the economic and commercial potential of the places, and to survey the socio-economic and political conditions of the areas to assess the military strength of the local rulers.[78] Beyond the Himalayas, he visited the Hindu Kush, Afghanistan, Bukhara and Samarkand to find out about suitable breeding stocks for the Company's studs. His main intention to visit the city of Bukhara was to purchase good horses from Central Asia.[79] He also surveyed the geographical, ecological and climatic condition of the north-gangetic plains and north-western parts of India to find out if India was favourable for the domestication and breeding of horses or not. He published a pamphlet detailing the methods of medical treatment for horses in 1800 A.D., and proposed new surgical methods for curing the lameness of the horse and acquired four patents on machines to manufacture horseshoes.[80]

The Company officials reported that the province of Bengal, Bihar, and Benaras region was well suited for the establishment of the Company's military stud.[81]They also reported that the climate, soil, water and pasturage, in almost every part of Bihar and Benaras were equally suitable for the reproduction and breeding of horses. The military stud was established at Pusa in Bihar to procure good and suitable horses for the Company's cavalry regiments. They even noted that the climate of both Bihar and Benaras, beyond doubt, was superior to the climate of England and perhaps the best quality of horse could be bred here.[82] So the Company's officers encouraged raising quality horses through cross breeding of the Arabian and Persian horses with Indian horses. But the horses produced here could not match the required standards. The Company became disappointed with the failed efforts to produce quality horses through in-breeding, and very soon realised that the overpopulated

region of the Tirhut plain was not good enough for breeding and reproduction of the horses.[83] In order to improve the reproduction and breeding of horses for their cavalry, the Company appointed William Moorcroft as the superintendent of the military stud at Pusa. Very soon Moorcroft realised that the newly bred horses were not as suitable as was required. In order to improve the standard of the cavalry horses, especially their size and strength, Moorcroft suggested the introduction of Turki or English horses in preference to Arabian.[84] The Company officials permitted him to select suitable stallions, for breeding purposes; and he was also given large monetary grants to visit the country of the Himalayas, Kabul and Bukhara in search of suitable stallions.[85] He also visited Kashmir, Afghanistan, Kabul, Rajasthan, Punjab, Bukhara and other parts of north-western parts of South Asia to search suitable stallions and mares to encourage the reproduction and breeding in the Company's military studs. Apart from this, he also encouraged farmers to breed and reproduce the horses, providing them veterinary facilities for the care and medication of horses and asked them to supply the horses only to the Company officials.[86]

The Vernacularization of the Equestrian Texts

In the 18th century, the cavalry, which was the mainstay of the Mughal military, could not continue any longer to be as useful in the years of the imperial decline. The weakening of the imperial structure and the ongoing process of commercial shifts diverted horse traders towards regional kingdoms and the local markets where they made huge profits. This shift of the horse merchants was because of the increasing demand for good horses by the successor states of Awadh, Bengal, Jaipur, Hyderabad, Marathas etc., for the purpose of strengthening their cavalry, more or less modelled on the Mughal army.[87] Consequently, such process increased and encouraged commodification of horses for the military and also for personal purposes. Local people, merchants and influential people had started to maintain good quality horses. Such a shift in the nature of acquiring r horses increased the demand for veterinarians in the localities of several regional polities. For healthy maintenance of horses, the state officials, as well as well-off people encouraged popularisation of animal-medical-wisdom. The veterinarians became very popular through treating their horses and providing them suggestions about the proper care and management of horses.

Along with the treatment of horses they also treated the disease

of other draught animals owned by the common people. The veterinarians even adopted vernacular language for writing the *nukhsas* (pharmacopoeia) of veterinary medicines. They also began to use local languages while explaining the details and symptoms of animal diseases to their attendants. This contributed to stabilise the veterinary professionals in the regional localities, signifying the shift of veterinary medical practice from the centre to the regional polities. Such practices popularised the idea of *equine* hygiene and healthiness among the common people.

During the 18th century, horses became a commodity in the market that anyone could buy as a huge variety of rates and qualities were available.[88] The local traders started to use lower breed of horses as carriers for transportation of trading goods from one place to another. This saw common people starting to purchase cheap and lower breeds of horses for transportation purposes. The local breeders also supplied cheaper horses as commodity for the common people.[89] The horse was no more accessible only to the aristocratic people. Now anyone with money could easily avail a horse as a personal commodity. Such commoditisation of horses encouraged to adopt the *equine* veterinary medical sciences by individuals. It became useful for an ordinary person to gain the knowledge on *equine* veterinary science for caring, managing, and healing of the horses. The vernacularization of the *equine* veterinary medical sciences encouraged skilled people to expand the ambit of their *equine*-veterinary-wisdom.

As the Company officials tried to implement traditional Indian medical techniques into their own animal treatment regime based on Western veterinary sciences, the officials began to analyse, and experience the importance of indigenous medicinal techniques. The information they collected enabled them to experiment with it. The translation of the *tarjamah-i-saloter-i-asban* into English is one such case of cross-cultural interaction that is aimed by the British to utilise the indigenous 'pharmacopoeia' on horse diseases for the treatment of the Company owned horses. This was translated into English by Joseph Earles in 1788 A.D. and the 18th century *equine* veterinary manual *faras-nama-i-rangin* of Sa`adat Yar Khan 'Rangin' was translated from Urdu to English by D.C. Phillott. Besides these texts, the early Mughal *equine* veterinary text the *faras-nama-i-hashimi* of Zayn-al Abedin Hosayni Hashimi, and the Mughal *equine* veterinary text *faras-nama* or *tuhfat-al-sadr* of Zabardasht Khan was also translated and edited from Persian to English by D.C. Phillott.[90] D.C. Phillott also introduced the *zinat-al-khayl*; a treatise on horses

written in Urdu by Munshi Muhammad Mahdi, where he wrote the introduction of the translated and edited version of the *faras-nama-i-rangin*.[91] The writing pattern of *faras-nama-i-rangin* and *zinat-al-khayl* were easy to read, reflecting on the vernacularization of the Persian and Arabian sources on the animal-medical-wisdom in Colonial India. It also projects loosening of the monopoly of the noble people, royal families and court society, who for long controlled the knowledge of horses under the Mughal patronage. The wide circulation of Urdu manuals on the treatise of horses largely weakened the control of Persian knowing veterinarians' influence on the knowledge of *equine* veterinary sciences.

It is important to note that the translations were mainly aimed at enriching the cultural uniqueness of the regional kingdoms. Majority of these translations aimed to provide hitherto inaccessible information on *equine* veterinary science to regional powers. They were dependent on the translated texts which worked as a guide on various aspects of the governance of horses. The *faras-namas* were translated due to their significance in maintaining a healthy and a physically fit cavalry force. The shifts to vernacular texts were not limited to the translations of *faras-namas* alone. New *faras-namas* were also written in the Urdu language. The reproduction, remitting, and copying of specialised texts became a popular profession due to the wide acceptance of these texts among the literate people. For instance, the *faras-nama* of Muhammad Abdullah was written in Urdu at Lucknow.[92] The most popular treatise on horses of the Company rule was the *faras-nama-i-rangin*. The *zinat-ul-khayl* was another text reproduced in Urdu as a treatise on the horses which was written by Munshi Muhammad Mahdi.[93] Munshi Muhammad Mahdi was a noted *Salotri*. While compiling this text he consulted the treatise on horses of Yusufi of Delhi; Rangin; Nizam-ud-Din of Iran; Haji Abdullah Wahhab of Bukhara; Nakul of India; Hashimi of Isfahan; and the *faras-nama* of Safi.[94]At the same time, to compose his treatise on the horses, he also consulted the famous ancient Indian treatise of the *ashwa-darpan*. The *zinat-ul-khayl* is an effort to combine both the Indian and Persian animal-medical-wisdom in a single book.

These texts were different from the Mughal manuals on the science of the horses. Written in Urdu and easily available to the individuals, these allowed commoners to have access to *equine*-veterinary-medical-wisdom. The vernacularization of the Persian language loosened the monopoly of the state over the *equine* veterinary medical knowledge. As a result, the aristocratic virtues of the animal-medical-culture got delinked from the Imperial court, as

the elite veterinary families could not recreate their monopoly over the animal-medical-knowledge once the *faras-namas* were translated into vernacular languages. The vernacularization of the *equine* veterinary treatises weakened the limited control of the elites on the *equine*-veterinary medical-knowledge too. Those skilled in Urdu language could easily master the *equine* veterinary skills by reading the vernacularised texts on *equine* veterinary sciences. This allowed the common people to easily access the knowledge of the medical herbal plants and led to follow simple steps for the prevention and cure of the diseases in animals, like horses. Thu the *equine* veterinary sciences became famous among the common masses.

Conclusion

The *faras-nama* texts of *equine* veterinary sciences helped the owners of horses to develop scientific skills and awareness about methodologies regarding the maintenance, caring, and healing of horses and other draught animals. The texts also contributed in increasing the knowledge about the pedigree, quality, and diseases of the horses. During the Mughal period, the profession of veterinarians was oriented towards aristocratic virtues and was considered a gentleman's profession as the state patronage encouraged veterinarians to provide specialised staff of animal inspectors and animal experts for examining the pedigree, health, fitness, and physical stamina of the war-animals. However, the political change in the 18th century with the onset of British Colonial rule encouraged the shifting of veterinarians from the Mughal court to the regional courts, cities and *qasbas*. The English East India Company added a new dimension to the Indian *equine* veterinary sciences by providing patronage to the translators of Persian *faras-namas* and to the writers of the *equine* veterinary texts. They utilised the nuances of the Indian *equine* veterinary science for the development of the Western *equine* veterinary science in India. Generally, under the Company rule, the vernacularization of such texts into Urdu and other languages of the 'Arabo-Persian' and Indo-Islamic *equine* veterinary sources popularised the animal-medical-wisdom among the masses on a wide scale.

Notes

1. The *equine* knowledge is associated with the rearing, caring and treatment of the horses.

2. Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-Asban*, trans. Joseph Earles (Calcutta, 1788).
3. Sadr-al-Din Mohammad Khan b. Zabardasht Khan, *Tuhfat-al-sadr*, trans. D.C. Phillott (Calcutta, 1911).
4. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, trans. D.C. Phillott (London, 1911).
5. Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-i-Asban*, pp. viii-xvi.
6. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, pp. vii-xix.
7. S.K. Ramachandra Rao, *Encyclopaedia of Indian Medicine: Historical Perspective* (Mumbai: Popular PrakashanPvt. Ltd., 2005, second edition), pp. 53-4.
8. Kautilya's *Arthasastra* contains valuable information on horses and veterinary sciences regarding the treatment of their diseases. While Kalidasa's *Raghuvamsam* gives description on the nature of horses as well as it also provides information on the practice of veterinary sciences.
9. Mansura Haider, 'Medical Works of the Medieval Period from India and Central Asia,' pp. 27-43.
10. Indian History Congress, *Proceedings*, Vol. 20, 1958, p. 174.
11. D.C. Phillott (ed.), *The Faras-nama of Hashimi*, Asiatic Society, 1910; Cf. C.A. Storey, *Persian Literature: A Bio-Bibliographical Survey*, vol. II, Part-3 (Leiden: The Royal Asiatic Society of Great Britain and Ireland Sole Agents: E.J. Brill Ltd., 1977), p. 395.
12. Joseph Earles, *A Treatise on Horses Entitled Saloter* (Calcutta, 1788), pp. iv-v.
13. Shah Nawaz Khan, *Ma`asir-ul-Umara*, vol. II, trans. H. Beveridge (Delhi: Low Price Publications, 1999), pp. 777-89; Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-i-Asban*, pp. iii-vii.
14. Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-i-Asban*, pp. iv-v; C.A. Storey, *Persian Literature: A Bio-Bibliographical Survey*, vol. II, Part-3, pp. 395-6.
15. Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-i-Asban*, pp. iv-vi.
16. Zabardasht Khan, *Tuhfat-al-sadr* or *Faras-nama*, trans. D.C. Phillott (Calcutta, 1911); D.N. Marshall, *Mughals in India: A Bibliographical Survey*, vol. I, Manuscript Supplementary Part-I (New Delhi: MunshiramManoharlal Publishers and Pvt. Ltd., 1996), p. 62.
17. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, pp. vii-xix.
18. Ibid, p. 38.
19. Ibid, pp. 37-38.
20. H.K. Kaul, *Travellers in India: An Anthology Chosen* (Delhi: Oxford University Press, 1980), p. 300.
21. Francois Bernier, *Travels in the Mogul Empire, A.D. 1656-1668*, trans. A. Constable, ed. Vincent A. Smith (London, 1916), p. 259.
22. Deepak Kumar (ed.), *Disease and Medicine in India: A Historical Overview* (New Delhi: Tulika Books, 2001), p. 40.
23. Sayed Ali Nadeem Rezavi, 'Medical Techniques and Practices in Mughal India', in Harbans Mukhia (ed.), *History of Technology in India*, pp. 875-94.
24. Abul-Fazl, *Ain-i-Akbari*, vol. I, trans. H. Blochmann, ed. D.C. Phillott (Delhi: Low Price Publication, 1989), pp. 140-50.
25. Ibid, pp. 147-8; Richard C. Foltz, *Animals in Islamic Tradition and Muslim Cultures* (Oxford: One World Publications, 2006), p. 36.
26. Irfan Habib (ed.), *Medieval India 1: Researches in the History of India, 1200-1750* (Delhi: Oxford University Press, 1992), pp. 154-67.
27. Ibid, pp. 853-97.

28. R.B. Azad Choudhary, *The Horse and the Mughal Military Culture in Transition, 1526-1795*, MPhil. Dissertation, Department of History, University of Delhi, 2014.
29. Abul Fazl, Ain-i-Akbari, vil. I, pp. 243-4.
30. Ibid, pp. 143, 145-47.
31. Abdullah Khan Firoze Jung, *Tarjamah-i-Saloter-i-Asban*.
32. Ibid.
33. R.B. Azad Choudhary, 'Mughal and late Mughal Equine Veterinary Literature: Tarjamah-i-Saloter-i-Asban and Faras-Nama-i-Rangin,' *Social Scientist*, Vol. 45, No. 7-8 (July-August), pp. 57-71.
34. Ibid, pp. 57-71.
35. Abdullah Khan Firuz Jung, *Tarjamah-i-Saloter-i-Asban*, pp. iv-x.
36. D.N. Marshall, *Mughals in India*, vol. I, p. 62; C.A. Storey, 'A Baz-Namah and a Faras-Namah', *Journal of the Royal Asiatic Society of Great Britain and Ireland*, No. ½ (Apr., 1960), pp. 59-60.
37. Zabardasht Khan, *Tuhfat-al-sadr*or *Faras-nama*. Manuscript available at Maulana Azad Library, AMU.
38. Sa'adat Yar Khan Rangin, *Faras-nama-i-Rangin*, pp. ix-xix, 13.
39. Sayed Ali Nadeem Rezavi, 'Physicians and Professionals in Medieval India', in Deepak Kumar (ed.), *Disease and Medicine in India*, pp. 40-65.
40. R.B. Azad Choudhary, *The Horse and the Mughal Military Culture in Transition, 1526-1795*, pp. 135-195.
41. Abul Fazl, Ain-i-Akbari, vol. I, p. 145.
42. S. Ali Nadeem Rezavi, 'Physicians and Professionals in Medieval India', in Deepak Kumar (ed.), *Disease and Medicine in India*, pp. 40-65.
43. S. Ali Nadeem Rezavi, 'Medical Teaching and Practices in Mughal India', in Harbans Mukhia (ed.), *History of Technology in India*, vol. II, pp. 875-894. Also see Irfan Habib (ed.), *Medieval India 1*, pp. 154-167.
44. Syed Ali Nadeem Rezavi, 'An Aristocratic Surgeon of Mughal India: Muqarrab Khan', in Irfan Habib (ed.), *Medieval India 1*, pp. 154-167.
45. R.B. Azad Choudhary, 'The Horse and the Mughal State Formation: The Making of an Imperial Political Culture,' *Summerhill: IIAS Review*, Vol. XXV, No. 1 (Summer, 2019), pp. 71-84.
46. Seema Alavi, *Islam and Healing*, p. 3.
47. Abul-Fazl, *Ain-i-Akbari*, vol. 1, trans. H. Blochmann (Delhi: Low Price Publications, 1997), pp. 145-47.
48. British officer D.C. Phillott was engaged in translation of *faras-nama* texts and other Indo-Islamic texts into English.
49. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, pp. vii-xix.
50. Ibid, pp. vii-xvi.
51. Ibid, p. 36.
52. Ibid, pp. 29-36.
53. Ibid, Introduction, pp. vii-xix.
54. The Imperial Gazetteer of India, vol. 22, Singhbhum to Trashi-Chod-Zong, Bihar State Archive, Patna, pp. 86-7; Saran District Gazetteers, file no. 425, Bihar State Archive, Patna, pp. 461-62; Francis Buchanan, *An Account of the District of Bihar and Patna in 1811-12*, vol. 2, Bihar State Archive, Patna, pp. 706-07.
55. Saran District Gazetteers, file no. 425, Bihar State Archive, Patna, pp. 461-62.
56. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*.

57. Ibid.
58. Ibid, pp.10-14.
59. Ibid, p. 13.
60. Ibid, p. xvii.
61. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, introduction.
62. *Faras-Nama-i-Rangin*, P. xiv; Mushi Muhammad Mahdi, the author of *Zinat-ul-Khayl* was a noted *salotri* of the 19th century.
63. G.J. Alder, 'Wiliam Moorcroft Plays the Great Games, 1808-1825', *The International History Review*, Vol. 2, No. 2 (Apr., 1980), pp. 172-215; Fredrick Smith, 'The work of the British Army Veterinary Corps at the Fronts', *Journal of the Royal Society of Arts*, Vol. 67, No. 3449 (Dec. 27, 1918), pp. 80-92.
64. G.J. Alder, 'Wiliam Moorcroft Plays the Great Games, 1808-1825', pp. 172-215.
65. Ibid, pp. 172-215; Fredrick Smith, 'The work of the British Army Veterinary Corps at the Fronts', pp. 80-92.
66. G.J. Alder, 'William Moorcroft Plays the Great Games, 1808-1925', pp. 172-215; Mir Izzet Ullah, 'Travels Beyond the Himalaya', *Journal of the Royal Asiatic Society of Great Britain and Ireland*, Vol. 7, No. 2 (1843), pp. 283-342.
67. Indian Military Proceeding, 28th May 1794, no. 2, National Archive of India, New Delhi.
68. Indian Military Proceeding, 16th -29th June 1795, National Archive of India, New Delhi, pp. 269-71. Refers that 32,000 Rupees was given to Captain John Collins, the agent of horses, for the procurement of the best quality of Arabian horses.
69. Military Department Index, vol. X, 11th April 1795, National Archive of India, New Delhi.
70. Imperial Gazetteer of India, Paradi to Pusad, vol. XX, Bihar State Archive, Patna, p. 422.
71. Indian Military Proceedings, 26th June 1795, no. 44, National Archive of India, New Delhi, p. 309; Home Public Consultation, 21st August 1812, no. 25, National Archive of India, New Delhi.
72. Indian Military Proceeding, 28th May 1794, no. 2, National Archive of India, New Delhi.
73. Official records of William Moorcroft, National Archive of India, New Delhi.
74. Ibid.
75. Deepak Kumar, *Science and the Raj, 1857-1905* (Delhi, 1997), pp. 1-31.
76. Seema Alavi, 'Unani Medicine in the Nineteenth-Century Public Sphere: Urdu Texts and the Oudh Akhbar', *The Indian Economic and Social History Review*, Vol. 42, No. 1 (March, 2005), pp. 101-129.
77. P.J. Marczell, 'William Moorcroft's Commercial Pilgrimage to Manasa Sarowara in 1812', 24/b Rue Lamartine, CH-1203Geneve, Switzerland, pp. 160-176.
78. Ibid, pp. 160-176.
79. Military Proceeding of India, 6th July 1812, no. 148.
80. William Moorcroft, *Cursory Account of the Various Methods of Shoeing of Horses Hitherto Practised; With Incidental Observations*(London: British Library, 1800).
81. Indian Military Proceeding, 26th June 1795, National Archive of India, New Delhi.
82. Indian Military Proceeding, 26th June 1795, National Archive of India, New Delhi.
83. Ibid.
84. H.H. Wilson, *Travels in the Himalayan Provinces of Hindustan and the Punjab; in Ladakh, and Kashmir; in Peshawar, Kabul, Kunduz and Bokhara by Mr. William*

Moorcroft and Mr. George Trebeck, from 1819-1825, vol. I(London: Asiatic Society of Calcutta, 1841), p. xxii.
85. Ibid, pp. xxiii-xxv.
86. Official records of William Moorcroft, National Archive of India, New Delhi.
87. R.B. Azad Choudhary, *The Horse and the Mughal Military Culture in Transition, 1526-1795*.
88. The Imperial Gazetteer of India, vol. XXII, Singhbhum to Trashi-Chod-Zong, Bihar State Archive, Patna, pp. 86-7.
89. Indian Military Proceeding, 26th June 1795, no. 29, National Archive of India, New Delhi, p. 289.
90. C.A. Storey, *Persian Literature*, pp. 395, 398.
91. Sa`adat Yar Khan Rangin, *Faras-Nama-i-Rangin*, introduction, p. xiv.
92. *Faras-Nama-i-Rangin*, introduction, p. xi.
93. Ibid, p. xiv.
94. Ibid, p. xiv.

Bibliography

Archival Sources

New Delhi: National Archive of India

Indian Military Proceeding, 28th May1794, no. 2
Military Department Index, vol. X, 11th April 1795
Indian Military Proceeding, 16th- 29th June, 1795
Indian Military Proceeding, 26th June 1795, no. 44
Indian Military Proceeding, 26th June 1795
Indian Military Proceeding, 6th July 1812, no. 148
Home Public Consultation, 21st August 1812, no. 25

Patna: Bihar State Archive

Buchanan, Francis *An Account of District of Bihar and Patna in 1811-12*, vol. II
Imperial Gazetteer of India, Paradi to Pusad, vol. XX
Saran District Gazetteers, file no. 425
The Imperial Gazetteer of India, vol. XXII, Singhbhum to Trashi-Chod-Zong

Primary Faras-Nama Sources

Jung, Abdullah Khan Firoze *Tarjamah-i-Saloter-i-Asban*, trans. Joseph Earles (Calcutta, 1788)
Khan, Sadr-al-Din Mohammad Khan b. Zabardasht *Tuhfatal-sadr* or *Faras-nama*, trans. D. C. Phillott (Calcutta, 1911)
Rangin, Sa`adat Yar Khan *Faras-Nama-i-Rangin*, trans. D. C. Phillott (London, 1911)

Primary Medieval Sources

Badauni, Abdul Qadir *Muntakhabu-t-Tawarikh*, vol.I, II & III, trans. G. Ranking, ed. B.P. Ambashthya (Patna: Academia Asiatica, 1973)

Fazl, Abul *Ain-i-Akbari*, vol. I, trans. H. Blochmann, ed. D.C. Phillott (Delhi: Low Price Publication, 1989)

Francois, Bernier *Travels in the Mughal Empire, A.D. 1656-1668*, trans. A. Constable, ed. Vincent A. Smith (London, 1916)

Secondary Sources

Alam, Muzaffar *The Language of Political Islam in India c. 1200-1800* (New Delhi: Permanent Black, 1986).

_____ 'The Pursuit of Persian: Language in Mughal Politics', *Modern Asian Studies*, Vol. 32, No. 2 (May, 1998), pp. 202-27.

Alavi, Seema (ed.) *The Eighteenth Century in India: Debates in Indian History and Society* (New Delhi: Oxford University Press, 2002).

_____ *Islam and Healing: Loss and Recovery of Indo-Muslim Medical Tradition, 1600-1900* (Ranikhet: Permanent Black, 2007).

_____ 'Unani Medicine in the Nineteenth-Century Public Sphere: Urdu Texts and the Oudh Akhbar, *The Indian Economic and Social History Review*, Vol. 42, No. 1 (March, 2005), pp. 101-29.

_____ 'Medical Culture in Transition: Mughal Gentleman Physician and the Native Doctor in Early Colonial India, *Modern Asian Studies*, Vol. 42, No.5 (2008), pp. 853-97.

_____ 'Mughal Decline and the Emergence of New Global Connections in Early Modern India'.

Alder, G.J. 'William Moorcroft Plays the Great Games, 1808-1825', *The International History Review*, Vol. 2, No. 2 (Apr., 1980), pp. 172-215.

Bayly, C.A. *Rulers, Townsmen and Bazaars; North Indian Society in the Age of British Expansion, 1770-1870* (New Delhi: Oxford University Press, 2010).

Choudhary, R.B. Azad *The Horse and the Mughal Military Culture in Transition, 1526-1795*, MPhil. Dissertation (University of Delhi: Department of History, 2014).

_____ 'Mughal and Late Mughal Equine Veterinary Literature: Tarjamah-i-Saloter-i-Asban and Faras-Nama-i-Rangin,' *Social Scientist*, Vol. 45, No. 7-8 (July-August, 2017), pp. 57-71.

_____ 'The Horse and The Mughal State Formation: The Making of an Imperial Political Culture,' *Summerhill: IIAS Review*, Vol. XXV, No. 1 (Summer, 2019), pp. 70-84.

Faroqhi, Suraiya (ed.) *Animals and People in the Ottoman Empire* (Istanbul: Eren, 2010).

Foltz, Richard C. *Animals in Islamic Tradition and Muslim Cultures* (Oxford: One World Publications, 2006).

Habib, Irfan (ed.) *Medieval India I: Researches in the History of India, 1200-1750* (Delhi: Oxford University Press, 1992)

Haider, Mansura 'Medical Works of the Medieval Period from India and Central Asia', *Diogenes*, Vol. 55, No. 2 (May, 2008), pp. 27-43.

Hintze, Andrea *The Mughal Empire and Its Decline; An Interpretation of the Sources of Social Power* (Brookfield USA: Ashgate, 1997)

Indian History Congress, *Proceedings*, Vol. 20, 1958.

Kaul, H.K. *Travellers in India: An Anthology Chosen* (Delhi: Oxford University Press, 1980)

Kumar, Deepak (ed.) *Disease and Medicine in India: A Historical Overview* (New Delhi: Tulika Books, 2001)

_____ *Science and the Raj, 1857-1905* (Delhi, 1997)

Marczell, P.J. 'William Moorcroft's Commercial Pilgrimage to Manasa Sarowara in 1812', 24/b Rue Lamartine, CH-1203 Geneve, Switzerland, pp. 160-76.

Marshall, P.J. (ed.) *The Eighteenth Century in Indian History: Evolution or Revolution?* (New Delhi: Oxford University Press, 2003)

Marshall, D.N. *Mughals in India: A Bibliographical Survey*, vol. 1, Manuscript Supplementary Part-I (New Delhi: MunshiramManoharlal Publishers and Pvt. Ltd., 1996)

Moorcroft, William *Cursory Account of the Various Methods of Shoeing of Horses Hitherto Practised: With Identical Observations* (London: British Library, 1800)

Naim, C.M. *Urdu Text and Context: The Selected Essays* (New Delhi: Permanent Black, 2004)

Rao, S.K. Ramachandra *Encyclopaedia of Indian Medicine: Historical Perspective* (Mumbai: Popular PrakashanPvt. Ltd., 2005)

Rezavi, Sayed Ali Nadeem 'Medical Techniques and Practices in Mughal India', in Harbans Mukhia (ed.) *History of Technology in India*, vol. II (New Delhi: Indian National Science Academy, 2012)

_____ 'Physicians and Professionals in Medieval India', in Deepak Kumar (ed.) *Disease and Medicine in India: A Historical Overview* (New Delhi: Tulika Books, 2001)

_____ 'An Aristocratic Surgeons of Mughal India: Muqarrab Khan', in Irfan Habib (ed.) *Medieval India I: Researches in the History of India, 1200-1750* (Delhi: Oxford University Press, 1992)

Smith, Fredrick 'The Work of the British Army Veterinary Corps at the Fronts', *Journal of Royal Society of Arts*, Vol. 67, No. 3449 (Dec. 27, 1918), pp. 80-92.

Storey, C.A. *Persian Literature: A Bio-Bibliographical Survey*, vol. II, Part-3 (Leiden: The Royal Asiatic Society of Great Britain and Ireland sole Agents: E.J. Brill Ltd., 1977)

_____ 'A Baz-Namah and a Faras-Namah', *Journal of the Royal Asiatic Society of Great Britain and Ireland*, No. ½ (Apr. 1960), pp. 59-60.

Wilson, H.H. *Travels in the Himalayan Provinces of Hindustan and the Punjab; in Ladakh, and Kashmir; in Peshawar, Kabul, Kunduz and Bokhara by William Moorcroft and Mr. George Trebeck from 1819-1825*, vol. I (London: Asiatic Society of Calcutta, 1841)