

# Institutionalizing of Veterinary Science in Colonial India

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## Abstract

Animal husbandry was a profitable practice from the time of Maurya dynasty in Ancient India. The animal husbandry with facilities of farming and management were also paid attention during the medieval period. In the pre-colonial period, there were no veterinary schools and colleges to control the animal diseases, and even during the early colonial period there were widespread cattle mortalities. The Indian Cattle Plague Commission in 1869 recommended the establishment of veterinary institutions under the colonial management. As a result a number of institutions including Imperial Bacterial Laboratory at Poona (1890); shifted to Mukteshwar in 1893 with a branch in Ijatnagar in 1913. With the advice of Robert Koch, a German Bacteriologist a number of serums from 1893 onwards against rinderpest, hemorrhagic septicaemia, anthrax and other diseases were produced. The animal vaccination was an important milestone which ushered in the process of immunization for the animals. This article examines the origin and development of western veterinary medical science and institutions during the colonial period.

**Key words:** Anthrax, Immunization, Rabies and vaccination, Rinderpest, Veterinary.

## 1. INTRODUCTION

Animal husbandry was considered a profitable profession during Mauryan dynasty. Emperor Ashoka established several hospitals in different parts of India and employed veterinary doctors for animal healthcare. Salihotra was a great expert of veterinary science. During medieval period the breeding and keeping of cattle especially horses, elephants, cows, buffalos, goats and sheep were paid attention. However, modern veterinary science and profession evolved during the colonial period in India, one of the significant developments in the field was its institutionalization. But it was not a sudden development; rather it had to undergo a long and protracted process. It depended on the requirements and policies of colonial expansion. In this paper an effort is made to highlight growth and development, and institutionalization of western veterinary science in India.

Various factors were responsible for the growth and development of western veterinary science during the colonial period. Colonial military and economic needs led to the establishment of western veterinary institutions in India.

### 2.1. Military Purpose

The East India Company occupied different parts of Indian subcontinent. They required a large and strong army to maintain their domination. They found barriers of communications and transport. They had to depend on beasts of burden. They found Indian horses were not suitable for war and transport. That's why they imported Arabian horses' (Chakravarti, 1999). A large number of cattle, particularly bullocks and buffaloes came to be in demand for transport system. In addition the British needed meat and milk for the army personnel. Some dairy farms and slaughterhouses were set up within the

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military campus to supply meat and milk for troops and other government institutions. As a consequence, the number of dairy farms and slaughter houses increased.<sup>1</sup> With the growing demand of milk, the dairy industry was established in India for the first time in 1881 (Mamorial, 1953). However, the first large scale dairy farm was started by the military department in 1891 at Allahabad.<sup>2</sup> The British Government had also took cross breeding policy for increasing the production of milk.<sup>3</sup> Henceforth the establishment of dairy farm was another important factor which led to the institutionalization of the western veterinary science.

## 2.2. Medical Purpose

Colonial Bengal had suffered from the animal infected diseases that were transmissible from animal to human. It has been estimated that more than 200 diseases of animals were transmitted to the human beings (Bauerfeind et al., 2016). The major diseases viz. rabies, anthrax, tuberculosis, foot and mouth disease and smallpox were directly transmitted to human beings. Diseases transmitted from animals to humans like rabies became a headache for colonial government as well as the general and veterinary medical practitioners. In India there were a large number of ownerless dogs which were moving here and there without any control. The colonial officials and soldiers were among those who were bitten by dogs. To tackle the problem of devastating rabies in India, the colonial government established Pasteur Institute.<sup>4</sup> In this way, the military needs led to initiate Modern veterinary science in India.

## 2.3. Economic Purpose

Colonial economic interest was other important factor responsible for the growth and

development of veterinary institutions. The government implemented various trade policies in the form of importing and exporting of animals and animal related products. For commercialization of animal, a large number of breeding industries were established. The colonial government exported healthy cattle, hides and skin, leather products, manure, fertilizers, wool and woollen manufactures, dairy products, meat, bones, hair to the foreign country.<sup>5</sup> With the considerable increase of milk production, the colonial government earned more money by establishing dairy industries in various parts of the country which proved a successful business.<sup>6</sup> In this way, they exploited the Indian cattle wealth.

The introduction of animal vaccination to provide inoculation against the fatal disease rinderpest was an important milestone. The Mukteswar Laboratory manufactured the anti-rinderpest serum and other serum which were very popular. It also exported to various parts of India and to foreign country viz. Egypt, Baluchistan and Rhodesia. The colonial government gained financial benefit from this advancement (Randhawa, 1976). Apart from this, for improving agriculture, the quality bull was required. Cattle breeding were quite necessary for agricultural work. Thus, economic interests also led to the foundation and development of western veterinary science in the country during that period.

## 2.4. Other Purpose

Government also felt the need to establish a Zoological garden to study the animals closely and provide a healthy natural environment for them. The objectives of Zoological gardens were 1) to provide recreation, instruction and amusement for all classes of the community; 2) to

<sup>1</sup> National Archives of India, Department-Education, Health and Lands Department, Agriculture, No.8.1925.

<sup>2</sup> Report of the Development of the Cattle and Dairy Industries of India, 1937.

<sup>3</sup> Report of the National Commission on Agriculture, 1976.

<sup>4</sup> National Archives of India, Department-Revenue and Agriculture, October, 1892, No.1-2, File, No. 41, p. 235.

<sup>5</sup> National Archives of India, Department -Revenue and Agriculture, September, 1908, No. 7-14, File No. 108.

<sup>6</sup> National Archives of India, Department - Revenue and Agriculture, 1906, No. 35-38, File No. 32.

facilitate scientific observations of the habits of animals, more especially those peculiar to tropical climates; 3) to encourage the acclimatization, domestication and breeding of animals and to improve the indigenous breed of cattle and farm stock; and 4) to promote the science of zoology by the inter change, import and export of animals (Administrative Report of 1876). Thus, the objectives of setting up of zoological garden were very significant. It was not mere separation to keep animals in zoo. The significance lies in the fact that colonial western medical experts could observe more closely the habit and nature of animals and that was helpful for various other purposes too.

The colonial authority gradually institutionalized western medical institutions. It produced an improved quality of horses and bullocks for military and other purposes. Moreover, they also gave importance to the veterinary education to prevent and tackle the outbreak of various diseases. British realized that the preventive measures could not be measured by British professional doctors for long time. They prepared the natives by educating them for the same purpose. In this connection, Deepak Kumar argued that the importance of western veterinary education was essential because of two reasons: firstly, it was of vital importance in an agro-based economy and secondly, the army also required a continuous supply of veterinary surgeons and assistants for their horses (Kumar, 2005). In addition to these, the cavalry had a pre-eminent place in the military organization of the East India Company. Gradually, veterinarians played a positive role in feeding and breeding the horses of the cavalry. Colonial military officials therefore provided importance to veterinary science and professionals (Bankoff, 2001). Similarly, Saurabh Mishra argued that the question of horse-breeding in the early colonial India was intimately linked to the military requirements and the larger economy of the company. The expansionist policy

of the early colonial regime had a significant emphasis on the importance of a large cavalry, but suitable horses were difficult to get within the Indian subcontinent. Therefore, the colonial Government established the first horse breeding farm in 1774. It was a landmark in the history of the evolution of Indian veterinary science (Mishra, 2012). Samiparna Samanta says that there was particular agricultural or economic gain behind the adoption of veterinary policy in colonial India by the colonial state. In addition to this, she argues that the measure taken by the British towards the cattle health in colonial India was not sufficient. She shows how the Bengali *Bhadraloks* criticized the treatment of the native cows doctors (*godagas*) about their ignorance of veterinary science as well as their cruel way of treatment. The Bengali middle class *Bhadraloks* also supported the western veterinary science and many of them appealed to British Government to provide western veterinary medicine care to the native cattle. As cattle and agricultural economy was very profitable for the British, they took attempt to protect them. According to her, the measure of the British was not sufficient because the British did not wish to attack the indigenous belief about the treatment of cattle by the native quacks (native veterinary doctors) (Kumar and Raha, 2016). Gradually, a large number of horse breeding organizations were established. The Bengal Stud was one of them which was established in 1795 (Datta, 1936). Later on, in 1809 the Government Cattle Farm was established in Hissar (Haryana) for camel-breeding. The reason for this step by the British Government was that these animals were used for transportation in the army. Though the farm was established in 1809 but the process of the breeding of cattle and horses started only in 1815. In the preceding years it can be observed that the process of breeding was tried among other animals for various purposes. In 1853, the breeding of bullocks started for its use in artillery. The same way breeding of donkey stallions for mule-breeding was started, as mules were required

for ordnance purposes. This farm also used to produce siege-trained bullocks and bulls. The Government acquired huge land for the farm in the name of the cattle breeding and grazing. This land was covered by the grass called *Cenchrus ciliaris*, which is relished by cattle. The famous Haryana breed of cattle is maintained at this farm (Randhawa, 1976).

### 3. INDIAN CATTLE PLAGUE COMMISSION 1869

William Moorcroft was the first western veterinary surgeon appointed by the East India Company. He landed in Calcutta on 14<sup>th</sup> November 1808. The works done by Moorcroft were insufficient to solve the problems of animal in India (West, 1961). A principal veterinary surgeon was appointed for the organized veterinary services. In addition to that, an administrative officer was also appointed for horse artillery, cavalry, breeding studs (West, 1961). In that way western veterinary department was slowly systematized and an army veterinary department was founded in 1827 to look after all these issues.

Famine and draught were the common incidents during the colonial period. As a result of that a large number of cattle had died in Orissa during the famine in 1866. In the 1860's rinderpest was ravaging the countryside on a wide scale and was responsible for the loss of nearly 10 lakhs cattle every year. Therefore in 1869, the colonial authority set up the Indian Cattle Plague Commission headed by J H B Hallen, a civil Surgeon, to inquire into the matter. The British wanted to treat the Indian cattle with western veterinary medicine through dispensaries and hospitals. *Manual of the more deadly forms of cattle disease in India* was translated and distributed among the Indians to save the natives cattle from the hands of the native quacks (native veterinary doctors).<sup>7</sup>

The recommendations of Indian Cattle Plague Commission helped the colonial authority to sketch plans for the progress and systemization of veterinary conditions in India. To train the Indians, Colleges and Schools were established under the recommendation of plague Commission because they found that without proper education it was not possible to develop out western veterinary science.

### 4. ESTABLISHMENT OF CIVIL VETERINARY DEPARTMENT AND INSTITUTIONS

Veterinary colleges, schools and veterinary research institutes were established under the recommendation of the Indian Cattle Plague Commission. In 1889, the Civil Veterinary Department (CVD) was established in India exactly two decades later. In 1892 the whole department came under the supervision of J H B Hallen. The primary duties of the department were horse-breeding, finding out the causes of animal diseases and supervision of animal health. The outstanding contribution made by Hallen was the establishment of the Imperial Bacteriological Laboratory at Mukteshwar and other veterinary institutions (see foot note 7).

In the Indian subcontinent the first veterinary school was established in Poona in 1862. Subsequently a number of veterinary institutions were established in different part of India. The first civil veterinary school was started at Babugarh, Hapur district of Uttar Pradesh in 1877. The level of training imparted by these schools was of low standard. The first veterinary college was set up as Punjab Veterinary College (now in Pakistan) in 1882. It was the first non-military veterinary educational institution that was started with the modern system of medicine. Within the next twenty years three more veterinary colleges were opened in Bombay (1886), Calcutta (1893) and Madras (1903). Later on various

<sup>7</sup> Report of the commissioners appointed to inquire into the origin, nature etc. of the Indian cattle plagues, 1871.

veterinary colleges were set up like those at Patna (1930), Hyderabad, Mathura, Jabalpur and Guwahati (Mohan, 1956). These institutions started diploma course for producing trained veterinarians and the course was developed by Royal College of Veterinary Surgeons, London.

**5. IMPERIAL BACTERIOLOGICAL LABORATORY**

On the other hand, from the late nineteenth century, the colonial government experienced a sustainable institutionalization of bacteriology. Several laboratories were established to find out the cause and remedy of animal diseases. Several important laboratories like the Imperial Bacteriological Laboratory at Poona (1890), the Bacteriological Laboratory at Agra (1892), the Plague Research Laboratory in Bombay (1896), the Pasteur Institutes of India at Kasauli (1900), Coonoor (1907), Rangoon (1916), Shillong (1917) & Calcutta (1924) and the Central Research Institute (CRI) at Kasauli (1905) came into

existence. Among these, Imperial Bacteriological Laboratory at Poona (1890) was the first one of its kind set up with an aim to investigate Surra in horses and camels (Figs. 1&2).

Alfred Lingard joined as Bacteriologist at the Imperial Bacteriological Laboratory (IVRI) at Poona in 1890. Initially he devoted much attention to the manufacture and distribution of anthrax vaccine. Later on he realized that the mortality rate of the Indian cattle was maximum because of rinderpest and he dedicated himself to save the cattle from this deadly disease. In 1893, Imperial Bacteriological Laboratory moved from Poona to Mukteshwar in the Kumaon Hills due to warm climate. Dr. Lingard, the director, invited Robert Koch, German Bacteriologists to come to Mukteshwar in 1897 and to advice on the best method for prevention and control of rinderpest. He started production of rinderpest serum in 1899 and the anti-sera against hemorrhagic septicemia, anthrax and black quarter was released. One of



Fig. 1. The foundation stone of the Imperial Bacteriological Laboratory, Poona



Fig. 2. The Main Laboratory Building at Mukteshwar

**Table 1.** Preventive Inoculation

Year	Rinder-pest	Haemorrhagic Septicaemia	Anthrax	Total
1912-13	19113	24407	185	21705
1913-14	23836	5557	NA	29393
1914-15	37813	1958	111	39882
1915-16	38950	2029	394	41373
1916-17	20498	9070	150	29718
1917-18	531124	9300	982	63406
1918-19	60051	2141	4891	67083
1919-20	77160	7003	733	67083
1920-21	83263	1956	1135	86354
1923-24	195116	7473	500	203089
1924-25	126963	9108	377	136448
1925-26	152255	20588	719	173562
1926-27	196747	9454	415	206616
1927-28	95834	16558	1167	113559
1928-29	93489	27226	1333	122048
1929-30	110043	29298	747	140088
1930-31	73622	14197	905	88724
1931-32	109590	20023	2738	132351
1932-33	175634	12902	2520	191056
1933-34	135392	16583	1713	153688
1934-35	169755	23110	2025	194890
1935-36	369141	18196	5554	392891
1936-37	293401	NA	NA	

the branch laboratories was built at Bareilly which was moved to Izatnagar in 1913. Gradually, all the veterinary institutions and laboratories were developed in line with western veterinary science which led to the institutionalizing of veterinary science in India.<sup>8</sup> Table 1 shows the increase of using the preventive inoculation of cattle during 1912-1937.<sup>9</sup> The data in the above table reflects that maximum numbers of preventive inoculation were used in the year 1917-18, 1935-36 and 1936-37 to protect the cattle from rinderpest. On the other hand, highest number of Haemorrhagic Septicaemia were used in the year 1929-30, 1928-29, 1912-13 and 1934-35. In case of Anthrax, maximum numbers of preventive inoculation were used in 1935-36, 1918-19, 1931-32, 1932-33 and

1934-35. Overall data in table 1 yielded that large number of preventive inoculation were used to save the lives of cattle from rinderpest.

## 6. CONCLUSION

Colonial expansion in the nineteenth century geared up the growth and development of the western veterinary science. The expansion was made possible due to the needs of colonial military and economic interests. When there were great demand for more commercial products like milk, meat, hides and bones of animals, more establishments were required for the preparation and arrangement of these commodities. The colonial government established various animal husbandry units and farms for preparing the said items. Moreover, when epidemic broke out among the cattle in various places due to famine, large number of cattle suffered and died of it. All these reasons forced the government to provide more veterinary surgeons or assistants to save the health of the animals. Several veterinary institutions and hospitals were founded. The government employed more western veterinary medical practitioners used more medicines to treat the diseases. The institutional set up like laboratories and research institutes were established to conduct researches and find new methods of treatment.

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<sup>8</sup> *Centenary Celebrations December 1889-1900*, Commemorative Volume, Indian Veterinary Research Institute, Izatnagar (n.d.).

<sup>9</sup> *Annual report of the civil veterinary department, Bengal 1912-13- 1936-37*, Bengal secretariat Press, Calcutta

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