

Saltpetre Industry in 17th Century Bihar: An Overview

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Abstract: Since the 13th century, saltpetre has been known as a raw material for gunpowder to the outside world. As far as India is concerned it was used namely for varied purpose like preservation of meat, manure, washing, bleaching, etc. but not much as an ingredient for gunpowder. With the advent of the European trading companies the dormant potentialities of saltpetre as an ingredient for gunpowder was worked out in India in general and in Bihar in particular. The article has highlighted various facets of the saltpetre production, procurement, technology, trade, etc. in 17th century

Keywords: karkhana, kooti, nooneah, asami, kalmi, dobara, Gangetic plain, the Dutch, the English.

The region of Biharⁱ has a special economic and political significance during the period under review. Being strategically located, it catered to the different needs of different people who visited, leaving behind a plethora of source material to study its economic significance in the 17th century. The region had an extensive commercial transaction with other parts of the country as the area was traversed by several land and river routes to carry goods to and from different places. Physiographically, Bihar's entire territory can be divided into three distinct unequal parts – (i) the Ganga plain, (ii) the Southern highlands and (iii) the Himalayan foothills. Of the three, the Ganga plains is the largest physiographic unit of Bihar, covering more than half of its total area, forming vast depositional plain from the Himalaya in the north to the Chotanagpur highlands in the south.ⁱⁱ

The political history of Bihar during the pre-Mughal period is well known in its diverse aspects. With the establishment of Mughal rule in India by Babur (1526-30), a new chapter began not only in the history of India but also of Bihar. The establishment of effective Mughal rule in Bihar was a long process and it was vigorously resisted by the eastern Afghans, initially and by Sher Shah, later. The final dent in the Afghan empire of Bihar was made by Akbar. He realized the strategic importance of Bihar commanding the route to rich Bengal through the Teliagarhi pass and to Orissa through the Jharkhand belt and in 1580 made it a distinct subah of his empireⁱⁱⁱ with seven Sarkars – Champaran,

Saran, Hajipur, Rohtas, Tirhut, Bihar and Monghyr. Bihar continued to enjoy the status of independent unit of the Mughal empire under Jahangir (1605-1627), Shahjahan (1627-58) and Aurangzeb (1658-1707). During the first quarter of 18th century, Bihar figured prominently in the general political history of the country and the resources, people of Bihar played a pivotal role in it.

An important aspect of 17th century Bihar is arrival of the European trading companies and its participation in numerous economic activities. Historically, it was in the 17th century in particular that Bihar grew into world wide importance as a flourishing trade emporium. For it, two imperative features were responsible, firstly the river Ganga being navigable throughout the year and secondly its midway position between capital cities and rich doab on west and bountiful Bengal possessing a suitable sea passage in the east, made it a perfect centre of trade and commerce. The Portuguese (1620s), the Dutch (1630s), the English (1650s) and the French (1670s) trading companies successfully tried their luck in the commercial transaction of Bihar and had profound impact on the economic structure of the province. To the European trading companies, the provinces of Bengal, Bihar and Orissa together constituted a natural unit of operation denoted by the term Bengal.^{iv} The high level of productivity achieved in the various sectors of economy was an important feature, which made this province distinct from other parts of India. It is not surprising; therefore, that stories and reports of tremendous profits of trade excited the greed, as well as the exploratory spirit of the mercantile European community to trade with this part of India.

Apart from the European trading community, there existed a powerful group of non-European merchants, which consisted of the merchants of native origins like the Praychaes, Pathan, Multani, Khatri, Jains, etc. and the merchants of Central Asia like Armenians, Persians, Khurasanis, etc. in the 17th century commercial activity of Bihar.

The economy of Bihar during the period under examination can be divided into two broad categories- the agricultural and non-agricultural sector. The present article aims to look at the saltpetre industry, production and trade in the region during 17th century. Regarding the non-agricultural sector in the 17th century Bihar, the most important indigenous material that was produced locally and had a large volume of trade was

saltpetre.^v It has been used extensively for different object – as an ingredient for gunpowder, in animal dyes, like lac and cochineal, for medicinal and antiseptic purposes like preservation of fish and meat and embellishing food preparations, for manure, especially of wheat and tobacco and in glass making, bleaching, washing and cooling purposes.^{vi} *Ain-i-Akbari* and accounts of Peter Mundy also states about its above mentioned varied use in the 16th and 17th centuries. However, in the writings of the European travellers, merchants, agents, etc., of 17th century, we do not get any reference of all these specific uses made of saltpetre except as an ingredient for gunpowder,^{vii} as a ballast or kentledge for ships and for cooling purposes. As a ballast, the transportation cost of saltpetre was negligible for the Europeans and both the Dutch and the English had been using it for homebound ships. Since the 13th century, saltpetre has been known as a raw material for gunpowder to the outside world.

As far as India is concerned, saltpetre production can be traced back to later decades of 14th century.^{viii} In local parlance, some of the terms used for saltpetre were Soraki (Sanskrit), Shora (Hindi), etc. The centres of saltpetre manufacture were widely distributed throughout India, but the attention of both the Dutch and the English were first directed to the peninsular India and not to the Gangetic plain. In peninsular India saltpetre, was found in Golkonda, Masulipatnam, Armahgon, Pulicat, Bijapur, Raybag, the Konkan coast, the Malabar coast, the Coromandel coast, Ahmedabad and Malpur. In the Indo-Gangetic plain, the region around Agra, Bengal and Bihar were associated with the saltpetre production.

In Bihar, the natural facilities for formation of saltpetre were found in Patna, Gaya, Matt (South-West of Patna), Tirhut, Saran, Champaran, Hajipur, Naunagar and Singhiya. In fact, the Mughals drew its supplies mainly from non-Bihar source, especially from Agra and Ahmedabad regions and it had not tapped Bihar for saltpetre on account of distance and difficulties for transportation. Bihar saltpetre, thus, was being used only for local purposes like manure and its use as an ingredient for gunpowder probably was not very widespread. However, Iqtidar Alam Khan has pointed out that although use of gunpowder and gunpowder artillery under the Mughals in the 17th century was increasingly limited and obsolete in comparison to the Europeans but the Purabias and Baksariyas in the 16th-17th century had expertise in use of firearms and it was linked to availability of saltpetre in the

Bhojpur tract, their homeland.^{ix} Still there was limited use of saltpetre as gunpowder in Bihar during the period under review.

The production of saltpetre, gained impetus with the advent of different European trading companies in Bihar, especially the Dutch. During the first two decades of the 17th century the increased use of artillery in European warfare had brought about a shortage of this commodity and as a result the Portuguese and the Dutch turned towards the east coast and increased its export for militaristic purpose. According to Jagdish Narayan Sarkar, "the dormant potentialities of Bihar as a source of supply of first class saltpetre was worked up only as a result of foreign reconnaissance, access and demand." The Portuguese, the Dutch and the English penetrated deep into the far-flung areas around Patna like Singhiya, Chapra, Hajipur, Naunagar, etc. and made immense contribution in establishing the domination of Bihar saltpetre throughout the world, from about mid-17th century. The saltpetre of Bihar came to acquire importance only in the second half of 17th century, is also apparent from the fact that no mention of saltpetre was made by the English factors, Hughes and Parker, among the products of Bihar during their first commercial mission to Patna in 1620-21. Peter Mundy, who visited Patna ten years later, observed that the saltpetre which was locally available was not of a very good quality and better, cheaper saltpetre was available elsewhere. The European trading companies, in the 17th century also generated the interest of local government, high officials like subedars, etc. to procure saltpetre from Bihar. Soon refineries and imperial 'karkhanas' were established at various places in the region. The process of obtaining saltpetre was crude. The producers belonged to a particular low caste called 'Luniah' or 'Nooneah' , 'Nuniah' and the soil from which saltpetre was obtained was called 'nooneah soil'. The place where they manufactured saltpetre was known as 'kooti'^{ix}, 'kuria' and the period of production used to be between November and the middle of June.^{xi} This was in fact a subsidiary occupation for this class of peasants, particularly in the lean season and they, with their cattle, were able to supply whey, one of the essential elements in the production of saltpetre. Jean de Thevenot has given a brief description of the production of saltpetre but the first detailed account of indigenous manufacture by the 'Nooneah' is found in the accounts of J. Watt. Saltpetre was prepared from three varieties of earth-black, yellow and white, but the black earth, being free from salt or brackishness, used to produce the finest saltpetre. Its refining, in the 17th

and 18th century had taken form of thriving industry in Bihar and the factories were utilized for procuring saltpetre till late 18th century. There was good deal of competition among the European companies and the local government to secure saltpetre from Bihar and hence money was advanced among the 'assamies' or workers which included both Hindus and Muslims to secure hold on them.

There were two types of saltpetre namely the refined ('kalmi') and the unrefined,^{xii} but the variety mostly available in Bihar was semi-refined or one called 'dobara'. The price of saltpetre varied according to the quality and the place where it was sold. Compared to 'dobara' variety, the price of 'kalmi' variety was excessively higher. In 1655, for example, when the price of 'dobara' was reported to be between Re. 0.75 and Re. 1, the refined saltpetre could be had only at Rs. 2.5 per maund.^{xiii} The refining of saltpetre was necessary because good gunpowder could be made only from well-refined saltpetre, while unrefined saltpetre was likely to damage other goods by contact.^{xiv} The refining was usually done in workshops or 'karkhanas' and during 17th century various European power established their refineries in Bihar.

Among the European powers, the Portuguese were first to enter Bihar and extended their business to Patna. Regarding their participation in saltpetre trade at Bihar the sources are mute but we do have the information about the Portuguese frigates carrying goods of Bihar and earning huge profits in the intra-Asian trade during 1620s. The expulsion of the Portuguese by the Mughals in 1632 concurred with the influx of the Dutch at Bihar. The Dutch factors from the very beginning obtained semi-refined saltpetre from Patna and used to refine it at Coromandel where they had refining unit. In order to save cost and time, they established the first refinery at Patna in 1651. Even Tavernier has mentioned about the refinery i.e., 'karkhana' at Patna. The capacity of Patna unit was increased rapidly, but could not keep pace, with growing demand of the 'kalmi' variety. As an experiment, 'dobara' variety was sent in the Dutch market and it did well. This was shown by the fact that in 1661, 50% of the order was for this variety and in 1669, the orders were entirely for 'dobara'. The cause for decline in the demand of 'kalmi' saltpetre does not lie only in its failure to keep pace with the required demand but also in the expenditure involved in the process of production. This is reflected by the statement of Tavernier. He wrote: "Saltpetre comes in abundance ... from Patna, a town in Bengal; that which is refined costs three

times as much as that which is impure."^{xv} Since there was no demand for 'kalmi' variety, the refining unit was closed and the equipments were sold to the local merchants. The Dutch also had a refinery at Chapra or 'Scepra' in the Dutch documents and it was set up after the establishment of Patna refinery. For this refinery, they had imported boilers from Holland and had employed refiners to refine the saltpetre. At Chapra they also had a depot as its location on the river Ganges facilitated the transportation of saltpetre by the river to Hugli.^{xvi} Thomas Bowrey while travelling between 1669-79 had seen saltpetre being transported to Hugli by the Dutch 'in great flat-bottomed vessels...called Patellas' from their Patna Factory.^{xvii} Hugli, Balasore and Pipli were the chief sea ports for the Patna market in 17th century. Besides these factories, the Company also owned two saltpetre collection agencies at Daulatganj and Singhiya on the bank of river Gandak. The average procurement of the Dutch East India Company during 1685-90 was 38,500 maunds.^{xviii} They used it extensively in their war with Hungary and Spain. The English who arrived late in the economic setup (of Bihar) simply copied the activities of the Portuguese and the Dutch, during the early period of their settlement in the province. The English, like the Dutch, used to acquire saltpetre from Bihar and they too initially struggled in refining it locally. They used to send raw saltpetre to England and this added considerably to the charges for freight and custom. The first English factory of refining saltpetre was established at Patna about 1659.^{xix} Under the dynamic superintendence of Job Charnock, the chief of Patna factory (1664-1680), the saltpetre trade grew massively and testimonial to it were the references of Lewis O' Malley of 'fleets of Patna boats laden with saltpetre were a common sight along the Ganges,' The actual expense for refining was very small, being only 9 pies per maund.^{xx} In 1670, the English East India Company gave up the lease of saltpetre at Masulipatnam owing to the cheaper saltpetre of Patna.^{xxi} In 1659 the saltpetre at Patna was 40% to 50% cheaper than at Hugli and it was decided to send 5000 pound a year from Patna.

With the growth of English trade in saltpetre, they founded factories at Singhee (Singhiya) and Naunagar. Singhee was not only close to saltpetre ground but also was far removed from the meddling of Bihar nawabs and subordinates. To quote John Marshall, "The Honorable companie had no factorie at Patna...reason the Nabob's palace is in the city and his servants and officer are constantly carving one thing or the another".

Streynsham Master (1676) an agent of the English, met seventeen saltpetre boats coming from Singhiya and Patna. The saltpetre fleet were often accompanied by the armed escorts up to the custom house or chowki of Rajmahal where boats off and on were held up by the local officials. The English also had refinery at Futuwa but the principal centre of supply of saltpetre was Patna. Alexander Hamilton (1688-1732) also refers to the Dutch and the English karkhana for saltpetre at Patna.^{xxii} The saltpetre which was sent away from this centre of production by river was usually stored in huge warehouses in Hugli. Manucci has referred about it in his account.^{xxiii}

Besides, the Portuguese, the Dutch and the English, the other European power, namely the French also had its factories in Bihar. They also got their saltpetre refined at Chapra. Thus, Chapra was one of the principal refineries of saltpetre in eastern India and strategically it was more important than Patna saltpetre trade.

Some details about the method of manufacturing saltpetre have been mentioned in various contemporary works. Thevnot (a French who visited India in 1666), Pelsaert (the Dutch factor), Peter Mundy (the English factor) have recorded the process of its manufacture. Milburn (1813) has also documented the process of saltpetre manufacture and his description tallies with that of Peter Mundy. This shows that practically the same method of production prevailed up to early 19th century. Regarding the procedure of obtaining saltpetre from the salt earth, Pelsaert writes:

"Two shallow reservoirs like salt pans are made on the ground one much larger is filled with the salt earth and flooded with water from channel in the ground; the earth is then thoroughly trodden out by number of labourers till is pulverized and forms a thin paste; then it is allowed to stand for two days, so that the water may absorb all the substance. The water is then run off by a large outlet into the other reservoir where a deposit settles which is crude saltpetre. This is evaporated in iron pans once or twice according to the degree of whiteness and purity desired, being shimmed continuously until scarcely any impurities rise. It is then placed in large earthen jars, holding 25 to 30 lbs; a crust forms in the dew during the night; and if any impurities are still left, they sink to bottom, the pots are then broken, and the saltpetre dried in the sun."

After the first boiling, an inferior petre (cutcha) was obtained and the product at this stage was known as 'dobara' saltpetre and contained 80 to 85% pure nitre. In order to produce refined saltpetre called 'dobara-cabessa' or 'kalmi' whose nitre content was about 95%, the 'dobara' saltpetre was redissolved and crystallized.^{xxiv} Saltpetre of the highest quality 'sithi' was obtained after a third boiling.^{xxv} The total output in Patna area around 1688 came to 226,200 maunds raw and 127,238 when refined.^{xxvi} The production was about 56.25% and it was spread over about 28 parganas in Bihar. Eleven of these parganas accounting for about 22% of the output of unrefined saltpetre were administered as 'khalisa' land on behalf of the king, while the rest were held as jagirs under Wazir Asad Khan, Nawab Shaista Khan, etc. Saltpetre was a government monopoly during the Mughal period^{xxvii} but participation of European trading companies altered its nature and brought Bihar on the world map. The export of saltpetre from Bihar in the second half of the 17th century was a new development in East India's maritime trade. The European demand for it was closely connected with national, political and military contemplations. The English emerged in the saltpetre trade only after the decline in position of the Dutch after the two Anglo-Dutch wars of 1655-67 and 1672-79. The annual requirement of the best saltpetre from Bihar by the English alone was 800 to 1000 tons in 1671 and it was cheaper than on the west coast and at Masulipatnam. John Bridgman while mentioning the availability of saltpetre in abundance, stated that the cost of saltpetre at Patna was only Re. 1 a maund where as at Hugli and Balasore it was Rs. 1\12\ and Rs. 2\10\0 a maund respectively. Thus, the price of saltpetre, throughout India varied from place to place in the 17th century and generally it was considered to be an expensive commodity. The whole amount of saltpetre collected from Bihar was sent to Hugli and other parts to be exported to European nations by the fleet of saltpetre boats described by, Captain Hamilton. The saltpetre trade of the English continued to flourish in the 18th century amidst the competition for procuring saltpetre by the different European and non-European traders. In an attempt to oust the Dutch, the English in 1732 ordered no less than 70,000 maunds of saltpetre. The Dutch and the English were great rival in the saltpetre trade. Regarding its inter-regional movement, the sources do not throw much light. Of the total refined saltpetre during the 1680s, only 5.5% was consumed within Bihar while 11.75% was sent to different parts of Bengal region and the left about must have been considerable amount was exported outside the region, probably to the European nations. The competition for saltpetre was not confined to the

European companies only, infact the government and high government officials also acquired it from time to time. Thus, for instance in 1659-60, the Mughal general Mir Jumla had ordered considerable quantities of gunpowder^{xxviii} for imperial use.

So far as mode of procurement is concerned the European and non-European merchants, who were engaged in large-scale trade, did their business mainly through the traditional 'dadani' system. In this system, long before the advent of season for a particular commodity, the merchant used to reach actual manufacturers through the local small agents or 'paikars' and advanced money to them so as to obtain right for the purchase of a particular commodity. In context of Bihar wealthy contractors (asami) employed agents, who advanced money to the saltpetre producers (noneas) and received the saltpetre from them and delivered it to the European trading companies. Accordingly, they were the most important link between the company and the producers and worked on the basis of brokerage or commission. The noneas in 17th century also used to give one half of the produce to the government and out of which one-fourth was paid to zamindars on whose farm 'kootis' were situated as 'malikana'. What government collected from them was known as 'Numuck Brayer'. Thus, in spite of thriving trade and earning huge profit by the merchants, the position of the producing class, the noneas was deplorable. Different types of vexations, exactions in form of 'malikana' and harassment at the hands of local authorities and the agents had adversely affected this class in 17th century. Various illegal practices like bribery, illegal detention, private trade was also involved in commercial transaction of saltpetre by the ruling class as well as servants of the European trading companies, namely the Dutch and the English. Between 1670-87 an enquiry was made by Hendrick Adriaan van Rheede about the dishonest practices of Dutch servants in purchase of saltpetre at Chapra, Ratanpura and Daulatganj.^{xxix} The Dutch trading company was banned from procuring saltpetre by subedar Islam Khan in 1636 AD.^{xxx} Not only the local authorities, but at times even the Mughal ruler-imposed ban, for example on the recommendation of emperor Aurangzeb, Wazir Asad Khan in 1692 issued a hasb-ul-hukum banning the export of saltpetre from Bihar by the European companies.^{xxxi} The English East India Company also faced harassment at the hands of local authority that often used to detain saltpetre consignments illegally. Waldergrave at Balasore complained on January 4, 1654 'that company's saltpetre was being forcibly detained at Patna'.^{xxxii} On

the question of duty at one of the 'chawkis' at Rajmahal dispute occurred between the company and nawab Ibrahim Khan over saltpetre trade.

To conclude, prior to the European demand, saltpetre was mainly used for local purpose and the inter-regional trade was negligible, in spite of the fact that it was monopoly of the Mughals in the period under review. The saltpetre trade in Bihar started late compared to other centers of saltpetre manufacture viz. Golconda, Ahmedabad, Agra, etc. but by the second half of the 17th century it had acquired status of the most prized commodity among the European trading companies. The export of saltpetre from Bihar in the second half of the 17th century brought it on the world map and in it, important role was played by the European trading companies namely the Portuguese, the Dutch, the English and later the French. Involvement of the European and non-European merchants like Omichand, Deepchand, Khoja Wajid, etc. in this trade in the following century resulted in intense competition for procurement of saltpetre, not only between the natives and Europeans but also between the Dutch and the English. This trade reached unparalleled heights with the beginning of the Anglo-French conflict in Asia and in Europe and practically in all European conflict saltpetre was used extensively. Thus because of its commodities like saltpetre Bihar became one of the most important manufacturing and trading place locally as well as internationally during the 17th century.

Endnotes

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- ⁱ In the present article, the reference is of Bihar prior to the formation of the state of Jharkhand in 2000.
 - ⁱⁱ Upendra Thakur, 'Bihar: A Geographical Introduction and a Historical Review', P.N. Ojha (ed.), *Bihar, Past and Present*, K.P. Jayaswal Research Institute, Patna, 1987, p. 1.
 - ⁱⁱⁱ Abul Fazal Allami, *Ain-i-Akbari*, Vol. II, translated by Sir J.N. Sarkar, Calcutta, 1949, p. 129.
 - ^{iv} Om Prakash, *The Dutch East India Company and the Economy of Bengal 1630-1720*, Princeton University Press, Princeton, 1985, p. 24.
 - ^v Saltpetre (potassium nitrate) is a kind of a artificial salt prepared from nitrates, found from time to time in a natural state in different parts of the world. Before systematic naming of chemicals, it was called nitrate of Potash and also 'Chinese salt or snow'.
 - ^{vi} Jagdish Narayan Sarkar, *Glimpses of Medieval Bihar Economy*, Ratna Prakashan, Calcutta, 1978, p. 70.
 - ^{vii} Earliest explosive was discovered at China and it was mixture of Sulphur, saltpetre and charcoal. In Chinese sources of 1044, there is vivid description of explosive powder. Recipes for producing gunpowder reached Islamic world, India and Europe towards the end of the 13th century. It was around 1230 that the use of nitrate in gunpowder for making explosion began.
 - ^{viii} Fragmentary references of use gunpowder have been mentioned in the battles of Vijaynagar Rayas, Deccani Sultans, etc.

ix IA Khan has discussed in a great length about the use of Purabiyas and Baksariya during 16th C in the Kingdom of Gujarat, Malwa & Mewar as artillery men in army. They were responsible in following centuries for dissemination of muskets & firearms among the rural population.

IA Khan, *Gunpowder and Firearms: Warfare in Medieval India*, OUP, New Delhi, 2004.

x K.K. Dutta (ed.), *The Comprehensive History of Bihar*, Vol. II, Part I, KP Jayaswal Research Institute, Patna, 1976, p. 240.

xi Om Prakash, op. cit., pp. 59-60.

xii Sukumar Bhattacharya, *The East India Company and the Economy of Bengal from 1704 to 1740*, Firma KL Mukhopadhyay, Calcutta, 1969, p. 144.

xiii Om Prakash, op. cit., pp. 112-13.

xiv 'The best Saltpetre of commerce', says Milburn, 'is well refined in long, neat and transparent crystals, cooling to the tongue, when applied to it and flammable much when thrown upon burning coals.'

xv Jean Baptiste Tavernier, *Travels in India*, Vol. II, V. Ball (tr.), London, 1889, p. 10.

xvi Ibid; Edward Thornton, *A Gazetteer of the Territories under the Government of the East India Company*, p.218.

xvii Thomas Bowrey, *A Geographical Account of the Countries Round the Bay of Bengal 1669-1679*, p.225.

xviii Om Prakash, op. cit., pp.59-60.

xix N.N. Raye, *The Annals of the English Settlement in Bihar*, Kamal Book Depot, Calcutta, 1927, p. 40.

xx Sukumar Bhattacharya, op. cit., p. 144.

xxi JS Jha, 'Early European Trading Companies in Bihar', KK Datta (ed.), Op. Cit., p.54.

xxii Jagdish Narayan Sarkar, op. cit., p. 72.

xxiii Manucci, *Storia da Mogor*, William Irvine (tr.), Vol. 2, Indian Editions, Calcutta, 1907, p. 77.

xxiv Om Prakash, op. cit., pp. 59-60

xxv A.I. Chicherov, *India, Economic Development in the 16th-18th century*, Outline History of Crafts and Trading, Nauka Publishing House, 1971, p. 20.

xxvi Tapan Raychaudhari and Irfan Habib (ed.), *The Cambridge Economic History of India*, Vol. I, Orient Longman, 1984, p. 275.

xxvii The sale of saltpetre was made a royal monopoly by the orders of Shah Jahan in 1655 and this was followed by the Mughal authorities, strictly from time to time. Even the rulers of Golconda and Bijapur had monopolized the saltpetre production in their area.

xxviii H.K. Naqvi, *Urban Centres and Industries in Upper India*, Bombay, 1968, p. 103.

xxix Ishrat Alam, 'Saltpetre Suppliers in Bihar and the Dutch East India Company: Analysis of a Dutch Enquiry into Fraud by its Servant at Chapra', *PIHC*, Delhi, 1994, p.268.

xxx Om Prakash, op. cit., p. 58.

xxxi According to the information of Dutch, Aurangzeb had taken this step, after the Sultan of Turkey claimed that saltpetre brought by the European companies at Europe from India was being used against them. The ban, however, was withdrawn in 1694.

xxxii N.N. Raye, op. cit., p. 40.