

# History of Indian Medicine

## François Bernier's discourse on the health system in medieval India

SAKUL KUNDRA

### INTRODUCTION

Several French travellers visited India during the seventeenth century<sup>1</sup> and wrote valuable accounts<sup>2</sup> in the form of memoirs, dairies, personal letters, notes, official papers and reports of their missions<sup>3</sup> based on their observations and experiences. François Bernier (Fig. 1),<sup>4</sup> a renowned European physician, visited India in the seventeenth century. Originally, Bernier published his travel accounts in 4 volumes. Two of these appeared in 1670 under the titles *Histoire de la dernière révolution des états du grand Mogol* (The history of the late revolution of the empire of the great Mogol) and *Evenemens particuliers or ce qui s'est passé de plus considerable après la guerre pendant cinq ans, ou environ, dans les états du grand Mogol. Avec une lettre de l'étendue de l'Hindoustan, circulation de l'or et de l'argent pour venir s'y abimer, richesses, forces, justice et cause principale de la decadence des états d'Asie* (Particular events; or the most considerable passages after the war of five years, or thereabout, in the empire of the great Mogol. Together with a letter concerning the extent of Hindoustan, its circulation of the gold and silver at last swallowed up there, the riches, forces, justice, and the principal cause of the decay of the states of Asia). The other two volumes appeared in 1671 as *Suite des memoires du Sr Bernier, sur l'empire du grand Mogol*.

Bernier's teacher was Pierre Gassendi (1592–1655),<sup>5</sup> a French philosopher, scientist, mathematician, teacher and priest, who taught in Digne, Aix and the Royal College at Paris. Gassendi violently opposed the authoritarianism of Aristotle, especially in the *Exercitationes paradoxiae adversus Aristoteleos* (1624). He revived and interpreted the atomic theory of Democritus and Epicurus in terms of the new science, thereby opposing the Cartesian school, and also attempted to reconcile atomism and Epicurean ethics with the teachings of the church. Bernier's education helped him make scientific observations in India, on the basis of empirical realism and experimental research. J. N. Sarkar considers Bernier's accounts to be of undoubted value.<sup>6</sup> In these accounts, Bernier explored various unscientific and irrational religious beliefs and customs of India, her geographical formations and education system. However, his views regarding the Indian health system have not been critically analysed. Pearson felt that Bernier's accounts on general matters of disease and medicine were restrained and moderate; he apparently saw little qualitative difference between what he knew and what he saw in India.<sup>7</sup> Pearson's approach of 'European superiority' over 'Asian failure' to keep pace in the medical domain, with special reference to Bernier, seems to be partly correct. Bernier's medical training and scientific education need to be analysed to examine his approach towards India and its health conditions and healthcare systems.

Department of History, Lakshmbai College, University of Delhi, Delhi

Correspondence to 24-A, MIG Red Flats, Rajouri Garden,  
New Delhi 110027; sakulkundra1982@yahoo.co.in

© The National Medical Journal of India 2010

### MEDICAL EXPERTISE OF BERNIER

Bernier did his medical education at Montpellier. He registered for the *baccalaureat* on 5 May 1652 and completed his doctoral dissertation in less than 4 months, on 22 August 1652.<sup>8</sup> After pursuing a 3-month intensive course at the Montpellier medical school that granted degrees on the understanding that recipients would not practise medicine in France, Bernier, according to D. V. Subba Reddy, was awarded the degree of Doctor of Medicine on 3 August 1652. At the time of receiving his degree, Bernier made an excellent speech praising medicine in general and then returned to Professor Gassendi in Paris.<sup>9</sup> A year after the death of Gassendi, Bernier left France for Constantinople and Aleppo. Thereafter, he stayed for a year in Syria, Palestine and Egypt, and finally reached India towards the end of 1658 or early in 1659. He was asked by Dara Shikoh, the eldest son of the Mughal emperor, Shah Jahan, to accompany him as his personal physician (Dara Shikoh had a high regard for European medicine). In fact, Dara consulted Bernier for his wife, one of whose legs was affected by erysipelas. Bernier's treatment gave her immediate relief. Dara was anxious



Fig. 1. François Bernier

to retain Bernier but during Dara's subsequent flight to Sind, Bernier was left behind and harassed by robbers. Near Ahmedabad, Bernier saved his life from these robbers by impressing them with his medical skills. On his way to Delhi, Bernier met a Mughal nobleman who took him under his charge. His employer, Danechmend Khan,<sup>10</sup> introduced him in the court of the great Mughal. Bernier stated, 'I should not have made so many discoveries had it not been for the aid of the Penet, or *Indou* doctor whom Danechmend Khan kept in his pay, and who dared not conceal anything from his patron, my *Agah*.'<sup>10</sup> In his travel accounts, Bernier called Danechmend Khan *Agah*.

Bernier remained in India for 12 years, associated with the most prominent scholars, and rendered medical services to many members of the imperial family. He also translated the works of the then recent discoveries made by William Harvey (born 1578, died 1657; in 1616 he announced his discovery of the circulation of blood), and Jean Pecquet in anatomy (born at Diepe, France, in 1622, died 1674; studied medicine at Montpellier, where Bernier was also a student), besides translating the philosophical discourses of Gassendi and Rene Descartes (born at La Haye, France, in 1596, died Stockholm 1650)<sup>10</sup> into Persian to explain them to his *Agah*. Thus, this French physician succeeded in drawing a general picture of the medical progress as witnessed by him in India.

Bernier was one of the first European travellers in Asia to be familiar with the most recent innovations in European medical science and was extremely critical of Indian ignorance in the field of physiology and anatomy. He made the first overt claim to European technical advancement in medical science.<sup>7</sup> Eloy, in his dictionary of the History of Medicine, proclaimed Bernier's work as the '*premier qui ait regarde la medecine des Brachmanes*'<sup>11</sup> (the first which has looked into the medical science of the Brahmins).

There was a dearth of skilled medical practitioners in India,<sup>12</sup> and European doctors enjoyed a good reputation among Indians for their medical expertise.<sup>13</sup> François Bernier, Niccolao Manucci, Garcia d'Orta and John Ovington wrote extensively on Indian medical practices. The western medical model was not radically different from the Indian one, and there seems to have been general agreement that Indian diseases were environmentally determined and should be treated by Indian methods, though Europeans looked upon Indian medical practices with disdain.<sup>14</sup> Bernier was probably the finest European physician who could critically compare and contrast the health system prevailing in the East with that in the West.

#### OCCIDENTAL ANTIDOTES OF INDIAN MALADIES

The state of the Indian healthcare system was compared by many European travellers in seventeenth century India with medical advancements in their native country. Many European travellers also mentioned different diseases prevailing in India and the methods of treating them. The diseases included morderi, medicinal stones, smallpox, cholera and enteric fever.<sup>15</sup> Bernier was the first to not only highlight obsolete remedies for various diseases, but also to praise the positive features of the Indian healthcare system. His medical knowledge and scientific wisdom equipped him to compare and contrast the oriental and occidental health systems.

Regarding indigenous medicine, Bernier declared that Hindus had small books which were collections of recipes rather than regular treatises and these books had medical principles different from the French ones. According to him, these books stated, 'A patient with a fever requires no great nourishment; the sovereign

remedy for sickness is abstinence; nothing is worse for a sick body than meat broth, for it soon corrupts the stomach of one afflicted with fever; a patient should be bled only on extraordinary occasions, and where the necessity is most obvious, as when there is reason to apprehend a brain fever, or when an inflammation of the chest, liver, or kidneys has taken place.'<sup>16</sup> Bernier did not believe that these medical remedies could be successful in France. He left the supposed worthiness of these medical remedies to be judged by the French physicians. He remarked, 'They are successful in Hindoustan, and that the Mogol and Mahometan physicians, who follow the rules of *Avicenna* and *Averroes*, adopt them no less than do those of the *Gentiles* (Hindus), especially in regard to abstinence from meat broth. The Mughals, it is true, (are) rather more given to the practice of bleeding than the *Gentiles*; for where they apprehend the inflammations... they generally bleed once or twice...copiously like the ancients, taking eighteen or twenty ounces of blood, sometimes even to fainting; thus frequently subduing the disease at the commencement.'<sup>16</sup>

According to Bernier, Hindus understood nothing of anatomy, as 'they never open the body either of man or beast'.<sup>16</sup> He dissected goats or sheep for the purpose of explaining to Danechmend Khan the circulation of blood and to show him the vessels discovered by Jean Pecquet (see above). He brought the theory of Harvey on the circulation of blood to the notice of Danechmend Khan.<sup>17</sup> Bernier stated that Hindus, without ever dissecting a human body, made the absurd claim that the human body had 5000 veins, as if they had counted them.

Bernier mentioned that the Hindus usually burnt their dead near the river and let them precipitate into water. Some took the sick person who was about to die near the riverside and immersed the whole body into the river and performed a purificatory ceremony. The 'ridiculous' beliefs attached to this ceremony, according to Bernier, were that their 'soul may be washed, on taking its flight, from all impurities which it may have contracted during its abode in the body'.<sup>10</sup> Bernier was not satisfied with the 'superstitious' explanation given by the Hindus for disposing of dead bodies in the river. The Hindu taboos against contact with dead bodies adversely affected the progress of anatomy and dissection in India.

Dysentery was also discussed by Bernier. He himself suffered from it in Lahore. He stated, 'I was seized with a flux (term used to describe any disease in which the patient passed stools mixed with blood), accompanied by acute pains in my limbs, in consequence of having passed the whole night on a terrace in the open air, as is commonly done in Delhi without danger. My health was suffering; but since we have been on a march, the violent perspirations, which continued for eight or nine days, have dissipated my bad humours, and my parched and withered body became a mere sieve, the quart of water, which I swallow at a draught passing at the same moment through every one of my pores, even to my fingers ends. I am sure that today I have drunk more than ten pints. Amid all our sufferings, it is a great consolation to be able to drink as much water as we please with impunity, provided it be of a good quality.'<sup>18</sup> Bernier explained the appropriate treatment of dysentery, which helped both Indians and Bernier's contemporary European travellers to cure themselves.

India's intense heat was unbearable. Bernier suffered from it during the march of Aurangzeb's army from Lahore to Kashmir. He mentions, 'I declare, without the least exaggeration, that I have been reduced by the intenseness of the heat of the last extremity; scarcely believing when I rose in the morning that I should outlive the day.'<sup>18</sup> Bernier analysed the results of intense heat in India. He

stated, 'My Indian servants, notwithstanding their black, dry and hard skin, are incapable of further extension. The whole of my face, my feet and my hands are flayed. My body, too, is entirely covered with small red blisters, which prick like needles. Yesterday, one of our poor troopers, who was without a tent, was found dead at the foot of a tree, wither he had crept for shelter... All my hopes are in four or five limes still remaining for lemonade, and in a little dry curd which I am about to drink diluted with water and with sugar.'<sup>19</sup> Bernier gave a list of things to counter the heat of Hindustan. He mentioned that drained *dahi* or curd and lemonade were considered the most refreshing remedy for the heat.

The unsanitary conditions prevailing in India created problems for European travellers. Bernier described the 'unhealthy' conditions and the 'inconsumable' products, such as bread or water, available in Delhi.<sup>20</sup> He often found the *bazaar* bread of Delhi 'badly baked and full of sand and dust'. The water had numerous impurities as the same source of water was used by people and animals. Bernier stated that the 'impure and contaminated' water of Delhi caused 'worms to be bred in the legs which produced violent inflammation, attended with much danger... They are commonly of the size and length of the treble string of a violin, and might be easily mistaken for a sinew'. Called Guinea worm on account of its prevalence in Guinea, as recounted in purchases, this worm inhabited the subcutaneous cellular tissue.<sup>19</sup> Bernier warned that while extracting these worms, great caution had to be used lest they break; the best way was to draw them out little by little, gently winding them round a small twig of the size of a pin. He gave vital information about the cure of Guinea worm. He also gave details about the meat sold in Delhi, which was roasted and dressed in different ways, and was flatulent and difficult to digest.

When Bernier was in Egypt, he stated, 'I allude, among other conceits, to the notion that there is a certain determinate day on which the Nile begins to increase; that a particular dew, called the Goute, falls on this day of the increase, which puts an end to the plague, no person dying of that disease when the Goute has begun to descend.'<sup>21</sup> He saved the life of M. de Bermon, French vice consul at Rosetta, who was afflicted by the plague. Bernier prescribed a remedy and lanced his abscess. He himself was afflicted with the infection, but he used butter of antimony for relief. He saw that men died of the plague and he himself consumed an emetic at the commencement of the disorder, which helped him recover quickly. Bernier mentions, 'A Bedouin servant attended me; he endeavoured to keep up my spirits by swallowing, without a moment of hesitation...'<sup>21</sup> In his opinion, 'the mitigation of the disease is owing to the heat of the weather, then very intense, which opens the pores and expels the pestiferous and malignant humours that remained confined in the body.'<sup>21</sup> He was an ardent believer in metempsychosis and entertained with wonderful tales.

Mughal harems were almost inaccessible to the sight of any common man. Bernier also gave medical advice to the women in the harems (*seraglio*). He states, 'I have sometimes gone into it when the king was absent from Delhi, and once pretty far I thought, for the purpose of giving my professional advice in the case of a great lady so extremely ill that she could not be moved to the outward gate.'<sup>20</sup> He described that he was brought into the *seraglio* to treat the ill women as if he 'had been a blind man'. He found his skills superior to those of other physicians of the east. He mentioned the 'physician of Lassa, who had books of receipts... we induced him to write down the alphabet, but he did this with so much difficulty and his writing was so wretchedly bad in

comparison with that in his books, that we pronounced him an ignoramus'.<sup>22</sup> Bernier's medical skills were superior in many respects to those of Indian physicians operating in the *seraglio*.

Bernier mentions that India had an 'endless variety of *fakirs*, dervishes and holy men or gentile hypocrites, who were knit into groups governed by superiors and tied by the vows of chastity, poverty and submission'.<sup>10</sup> He was amazed by the 'superstitious' beliefs of the Indians and compared the *fakirs* with the French hermits who lived a secluded life in a remote garden without ever visiting a town. Bernier criticized the prevalence of 'irrational' belief in the magical powers of religious hermits. He mentioned that the Indians imagined that the *fakirs* 'can prepare mercury in so admirable a manner that a grain or two swallowed every morning must restore a diseased body to vigorous health and so strengthen the stomach that it may feed it with avidity and digest with ease'.<sup>10</sup> He also criticized the unnecessary sacredness attached to the tomb of a celebrated *pir* in Baramoulay who was said to be capable of miraculously curing the sick and infirm.<sup>23</sup>

#### POSITIVE IMPRESSIONS ABOUT THE INDIAN HEALTHCARE SYSTEM

The travel accounts of Bernier are not always critical of the Indian healthcare system. Bernier praised the sobriety of Indians and ascribed the absence of many diseases in India to the good habits and customs of the people and to the climate. He mentioned that there were few people in India who had a strong desire for wine and 'happy ignorance which prevails... is fairly ascribable to the general habits of sobriety among the people, and to the profuse perspiration to which they are perpetually subject'.<sup>20</sup> Avoidance of any strong drink automatically cures them of 'the gout, the stone, complaints in the kidneys, catarrhs and quartan agues', which are 'nearly unknown; and a person who arrives in the country afflicted with any of these disorders... experience a complete cure'.<sup>20</sup> Bernier was ecstatic about the fact that Indians were free from these diseases.

Bernier wrote that venereal diseases were common in India, but they were 'not of so virulent a character, or attended with such injurious consequences, as in other parts of the world'.<sup>20</sup> He mentions that though Indians enjoyed better health but the hot climate led to feebleness and dullness of body and mind. Attacks due to excessive heat were the reason for continuous malady, which afflicted everyone indiscriminately, particularly the Europeans, who were not accustomed to such heat and had to adjust to the hot Indian summers.

Bernier's scientific and medical education enabled him to critically analyse and give due credit to commendable aspects of the Indian medical system prevailing in seventeenth century Mughal India. His rationality is praiseworthy, an example of it being his understanding of the fact that climatic conditions affected not just the medical conditions, but also the architectural styles in India. He said, 'Europeans complain that Indian buildings are inferior in beauty to those of the western world, forgetting that different climates require different styles of architecture; that what is useful and proper at Paris, London, or Amsterdam would be entirely out of place at Delhi... Europe may boast greater beauties; these, however, are of an appropriate character, suited to a cold climate. Thus Delhi also may possess beauties adapted to a warm climate.'<sup>24</sup> Bernier had an enlightened mind and accepted India's diversity.

In the early modern period, medicine in Europe relied partly on astrology. It would be useful to distinguish three foci in medical practice at the time—care, cure and causation. Pearson argues that

the emphasis was on care; studies of cure, as well as cause, were still primitive, having as much to do with astrology and malignant forces as with science.<sup>7</sup> The cause of the disease was looked for in social and cultural matters. Bernier claimed that the majority of Asians were so infatuated with the desire to be guided by the signs of the heavens that it led to extremes of superstition, as seen in the statement of an astrologer: 'No circumstance can happen below which is not written above.'<sup>25</sup> The advice of astrologers was considered absolutely necessary even on the most trivial occasions, such as when a slave was being purchased, new clothes were being worn or trees planted, as done by the king of Persia. The astrologers, constantly approached for advice, were acquainted with every transaction, public or private, and with every project, common or extraordinary. During the reigns of Mughal rulers, royal astrologers performed a ceremony called *sahet* for the Mughal kings. This ceremony was performed in expectation of happy and successful activity. Bernier compared Indian astrologers with European ones to draw the attention of Frenchmen towards the prevalent superstitious beliefs in France. He stated that in Europe, 'where the sciences flourish, professors in astrology are considered little better than cheats and jugglers,'<sup>25</sup> and probably tried to give suggestions to the astrologers to depend on the scientific progress made in Europe. Bernier's medical knowledge and scientific understanding made him very critical of the dependence on astrology for trivial reasons.

To sum up, François Bernier's medical knowledge established him as an outstanding physician among other French travellers. He discussed different diseases, such as dysentery, venereal diseases, Guinea worm plague and problems created by the scorching conditions, along with their remedies. In his travelogue, Bernier provides insights into the Indian healthcare system in the seventeenth century. He critically analysed the conditions of the Indian healthcare system during his visit to India and contrasted it with the European system. However, he did not fail to appreciate the creditable things about the Indian system. His description of Indian diseases and system of medical care might have helped later French explorers find cures for prevailing Indian diseases. Bernier, with his professional medical knowledge, made an important contribution in comparing and contrasting the conditions of the Indian healthcare system with those prevailing in seventeenth century France.

## REFERENCES

- 1 Kaul HK (ed). *Travellers' India: An anthology*. New Delhi:Oxford University Press; 1979: xlviii–xlix.
- 2 Lafont JM. *Indika: Essays in Indo-French relations 1630–1976*. Delhi:Manohar Publishers; 2000:91.
- 3 Nanda M. *European travel accounts during the reign of Shahjahan and Aurangzeb*. Kurukshetra:Nirmal Book Agency; 1994:2.
- 4 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Translation on the basis of Irving Brock's version by A. Constable, with notes, 2nd edn revised by V. A. Smith, London:Oxford University Press; 1891; Reprint Delhi:Low Price Publication; 1994. Also Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009).
- 5 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. xx, 1.
- 6 Sarkar JN. *History of Aurangzeb. 5 vols*. Bombay:Orient Longman; 1972–4.
- 7 Pearson MN. The thin end of the wedge: Medical relatives as a paradigm of early modern Indian–European relations. *Modern Asian Studies* 1995;**29**:141–70.
- 8 Bouille PH. François Bernier and the origins of the modern concept of race. In: Peabody S, Stovall T (eds). *The colour of liberty—histories of race in France*. Durham:Duke University Press; 2003:11–27.
- 9 Reddy DVS. An account of Indian medicine by François Bernier. *Bull Department of History of Medicine, Osmania Medical College, Hyderabad* 1964;**II**:42–53.
- 10 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 315–24.
- 11 Nicolas François Joseph Eloy's Dictionnaire historique de le medicine annicne et moderne...Monsieur H.Hoyois 1778.
- 12 Tavernier JB. *Travels in India*. Eng. Tr. V. Ball. 2nd ed. Revised by William Crooke. 2 vols. London: 1925; Reprint. Delhi: Low Price Edition; 2000. Vol. I. p. 240.
- 13 Kaur J. European perception of the Indian Health System: Italian Niccolao Manucci's observation. *Indian Horizons* 2005;**52**:57–62.
- 14 Kumar D. *History of medicine in South Asia: Some concerns, some questions*. Institute of History and Philology. Academia 2003;**4–8**:1–19.
- 15 Kaul HK (ed). *Travellers' India: An anthology*. New Delhi:Oxford University Press; 1979:297–305.
- 16 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 338–9.
- 17 Aniruddha R. Francois Bernier's idea of India. In: Habib I (ed). *India—Studies in the History of an Idea*. Delhi:Munshiram Manoharlal Publishers; 2003:177.
- 18 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 385–8
- 19 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 354–5.
- 20 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 250–4.
- 21 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 450–1.
- 22 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). p. 424.
- 23 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). p. 416.
- 24 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). p. 240.
- 25 Bernier F. *Travels in the Mogul Empire AD 1656–1668*. Available at [http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd\\_6093710\\_000/ldpd\\_6093710\\_000.pdf](http://www.columbia.edu/cu/lweb/digital/collections/cul/texts/ldpd_6093710_000/ldpd_6093710_000.pdf) (accessed on 10 October 2009). pp. 161–2.