

## **Paintings as Source of Science in the Past: Understanding Indian Elephants**

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The word Hastishastra can be translated into English as Elephantology. The science deals with topics like genealogical, physical, mental and intellectual characteristics of elephants, techniques of tracing and capturing elephants from forests, nourishment for healthy growth and general upkeep, taming and training them for war and work and diagnosis and treatment of their diseases<sup>1</sup>. There are two species of elephants viz African and the Asian, their scientific names are *Loxodonta africana* and *Elephas maximus* respectively<sup>2</sup>. It is obvious that the elephantologists of India in the ancient past must have studied and recorded their observations about the details of the Asian type.

Richly decorated elephants always constituted the attractive and glamorous part of royal processions<sup>3</sup>. The sculptural piece of Dhauli elephant in Orissa is indeed a loud expression of 'His Imperial Majesty King Ashoka presenting himself with quiet dignity before the people of Kalinga. The artist chose this giant animal in a dignified motion to exhibit the majesty and dignity of the Mauryan imperial glory. N.R. Ray's comment on this context may be recalled, 'Indeed, such plastic presentation of bulky volume, such feeling for living flesh rendered with remarkable realism, such knowledge of the physiognomical form of the subject treated and such sense of dignified movement and linear rhythm have no parallel in Mauryan animal sculptures'<sup>4</sup>.

Among the seven elements of state, as enumerated by Kautilya, *Danda* i.e. coercive power mainly in the form of army is mentioned as the sixth element. Elephant army constituted one of the vital components of the *Chaturangini Sena*<sup>5</sup> (Fig. 1).

In the state building process, the importance of elephants and horses can never be missed. Formation of a state and its consequent protection largely depended on these two animals. How imperial dream was connected with the vigour of the giant animal i.e. elephant is revealed in the writing of Quintus Curtius giving a glowing picture of King *Puru*<sup>6</sup>. 'In the center of the line of elephants, on the tallest elephant in the field could be seen the towering figure of Poros nearly seven feet in height<sup>7</sup>'. The picture of vigorous Poros here indeed is blended with the valour of the mighty elephant. Setting it aside, we notice that this huge creature finds its mention repeatedly in the Buddhist literature symbolizing Buddha himself. The magnitude of the animal in its physical and behavioural expression certainly led the authors to select it to indicate the height of the Great Master.

Thus it is no wonder that this specie could draw the curious attention of the royal personage and became the subject matter of empirical study and observation *per-se*. The process of study on different aspects of elephant found expression in the composition as well as compilation of a number of texts from a very early period. In the *Arthashastra* it is explicitly mentioned, 'The victory of kings (in battles) depends mainly upon elephants; for elephants being of large physical frame, are capable not only of destroying the arrayed army of an enemy, his fortifications and encampments, but also of undertaking works that are dangerous to life.

Elephants bred in countries, such as Kalinga, Anga, Karusa, and the East are the best; those of the Dasharna and western countries are of middle quality and those of Saurashtra and Panchajana countries are of low quality. The might and energy of all can, however, be improved by suitable training<sup>8</sup> (Book II. Chap II., 50).

Besides, *Kautilya* makes provision for the post of the Superintendent of Elephants and speaks about the training of elephants<sup>9</sup> (Chapter XXXI and Chapter XXXII, 136-138).

*Varahamihira* holds forth in the verses of the *Brihatsamhita* on the diverse behavioural patterns of the animals that would forebode the victory or defeat of the enemy or triumph of the monarch<sup>10</sup>.

*Hastyaurveda* of Palakappya is an undated ancient work on elephant science. A

copy of this text is preserved in the Raja Serfoji Saraswathi Mahal Library of Thanjavur in Tamil Nadu. Another treatise is known by the name *Matangalila* of Nilakantha.

*Hastyayurveda* of Palakappya consists of over seventy-two chapters dealing systematically with several diseases of elephants, instructions for the healthy growth, upkeep and training of elephant. The sage Palakappya is stated to have taught this science to king Romapada of Anga. The knowledge on this subject formed an essential part of the training of the royal princes. Continuous efforts for gathering new information and knowledge about this gigantic quadruped is noticeable at least up to 19<sup>th</sup> century. New interpretations, modifications as well as additions went on continually. King Serfoji of the Bhosle dynasty of the Marathas composed *Gajashastra* in 1820. This work is preserved in Thanjavur Library and the uniqueness of this text lies in its coloured illustrations. The dry and terse content of the verses has been given a lively expression through the illustrations flanked by the relevant Sanskrit verses on the top and the Marathi version at the bottom. Besides these, *Gajashastra* of Vaisampayana, *Gaja-chikitsa* of Vedavyasa are some other notable works on the subject. The *Visnudharmottara* mentions the names of the Dig-gajas namely: *Airavata*; *Padma* or *Pundalika*, *Puspadanta*, *Vamana*, *Supratika Anjana*, *Nilā* and *Kumuda*. The same work also speaks of the four classes viz. *Bhadra*, the best; *Manda*, the medium; *Mriga*, the worst and *Sankirna* or the mixed breed. The *Agnipurana* seems to mention the eight names as *Kumuda*, *Airavana* (ta), *Padma*, *Puspadanta*, *Vamana*, *Supratika*, *Anjana*, *Homa* for *Nilā* or *Sarvabhauma*.

The number of the *Diggajas* seems to have influenced the ancient Indian writers' classification of the Indian elephants under eight typical groups<sup>11</sup> (Fig.2).

Classification of Indian elephants in the *Manasollasa* of Someshvara III (12<sup>th</sup> Century A.D.) is different from the qualitative classification of the *Arthashastra*. This change in the view between these two texts of two different time periods points to the ongoing cultural and research practices on elephants. Reclassification of elephants in the *Manasollasa* might have been the result of continuous observation and investigation of the experts. The description of *Prachyavana* in the text is particularly relevant to this paper as here in this text, a clear cut extent of the *Prachyavana* has been given<sup>12</sup>.

*Vanam prachyam = iti Proktam Lohita-bdhischa = paschime ||*

It means that the *Prachyavana* extended from *Gangasagara* in the south to the *Himadri* in the north and from *Prayaga* in the west to the *Lohitya* (lower course of the *Brahmaputra*) in the east. The *Hastividyarnava*, which constitutes the main content of this paper, was composed mainly on the basis of investigation and observation on the elephants of the forests of Assam i.e. a major portion of the aforesaid area of *Prachyavana*. The text also tells that the author was quite apprised of the knowledge about elephants, preserved in the earlier books composed in other parts of India.

Shihabuddin Talish who accompanied Mir Jumla in his invasion of Assam during the middle of the 17<sup>th</sup> century A.D. makes mention of the large number of elephants abounding in the hills and forests of Assam<sup>13</sup>. The eagerness of the Ahom ruler Pratap Sinha (A.D. 1603-1641) to assume the title of *Gajapati* by making himself the owner of one thousand elephants is also indicative of the adoration and esteem in which the elephants were held by the rulers. But his desire was not fulfilled. Elephant catching was a very old practice in Assam and it was not merely a pastime, but was intended for enhancing the prosperity and strength of the rulers. Obviously the scholars versed in the science of elephant behaviour enjoyed considerable indulgence from the kings. This sort of congenial environment no doubt was the breeding ground for the composition of the *Hastividyarnava*, *Sarasamgraha*, a comprehensive manual based on elephant ethology. According to Niko Tinbergen, the first tasks of the study of behaviour are observation and description<sup>14</sup>. In this sense, the root of modern ethology of elephant may be traced to a huge store house of knowledge which have had an indigenous origin. This book is written in Tai-Ahom language<sup>15</sup>.

The illustrated manuscript copy of the *Hastividyarnava* was in the custody of Late Mahidhar Buragohain, the grandson of Purnananda Buragohain, the legendary Prime Minister of Assam (1783-1817). The late pundit H.C. Goswami recovered this manuscript as early as 1912 and the copy of the manuscript was handed over to the Department of Historical and Antiquarian Studies, Assam<sup>16</sup>. The original manuscript had 193 folios out of which 135 still

remain. The folios are of the measurement of 58x16 cm. The folios till 163 deal with the types of elephants and from 164 to the end with their ailment and treatment. From the colophon we come to know that it was composed in Saka 1656 i.e. 1734 A.D. under the order and inspiration of the Ahom King Siva Sinha and his queen Ambika Devi<sup>17</sup>. Sukumar Barkath composed the *Hastividyarnava*<sup>18</sup>. Dilbar and Dosai the two painters painted the pictures therein under the order of the King and Queen<sup>19</sup> (Fig.3). The total number of paintings is 170.

Studies on different aspects of behaviour as well as of the types of elephants constitute the main contents of the *Hastividyarnava Sarasamgraha*. There are chapters like:

1. Types of Elephants
2. The Tuskers: the mode of training
3. Female elephants: mode of the training.
4. Descriptions of the elephant stable measurement of ropes for tying elephants, measurement of doors of stables.
5. Functions of elephants according to Nitisara of Kamandaka.
6. Varieties of elephant as described by Vyasa.
7. Characteristics of different varieties.
8. Characteristics of the bad type.
9. The kind of elephants found in different regions with their characteristics.
10. Mode of training of the newly caught elephants and calves.
11. Measurement of elephants according to age.
12. Treatment to be made to the elephants captured in the aged stage.
13. Instructions for treatment to the elephant newly caught.
14. Medicines for treatment of ailing elephants.
15. Medicines for making elephants rutted and strong.

Most of the medicines mentioned were prepared from the herbal and faunal ingredients

(Fig.4). Near about five hundred herbal and faunal antidotes have been given in the text. The long list of medicinal plants and creepers reminds us of the tales about Jivaka's test at Taxila University. At the end of medical course, Jivaka when wanted to return to his native place, was asked by his celebrated teacher Bhiksu Atreya to find out a single plant in the surroundings of the city that should have no medicinal value. Jivaka went out with a spade but came back empty handed. He informed the teacher that he had found no plant which was devoid of medicinal properties. The teacher was highly pleased with the mastery of the student and rendered permission to start for his home town<sup>20</sup>.

Medicinal Science was intricately associated with Plant Science. Charaka's remark in this respect may be remembered: it is only the man well acquainted with the names and external features of plants and his ability to use them properly according to their properties is to be called an expert physician<sup>21</sup>.

The *Dhanvantari Nigahantu* is more explicit on this point: sometime several vegetables (*bhesajas*) bear one name, sometimes one vegetable bears various names according to its class, external features, colour, potency, function, effects, properties and the rest<sup>22</sup>.

'The physician does well to master *Bhesaja Vidya* by acquainting himself with the various names of plants in Sanskrit and Prakrit consulting all classes of men by personal observations by a careful handling as well as by a careful consideration of its specific characters and sexuality.

The word *bhesaja*, from which *bhisak* denoting physician is derived, etymologically means 'vegetable drugs'<sup>23</sup>.

In the above mentioned quotations we find the use of a technical term *Bhesaja Vidya* signifying a distinct study of the plants and plant life with special reference to there medicinal properties and use.

The huge store-house of knowledge in herbal medicines for the elephants as preserved in the *Hastividya* reveals that as Kamrupa or Assam constitutes the natural habitat of elephants, behavioural study of elephants, was a principal area of interest of the people. Without

the initiative on the part of the ruler accompanied by the involvement of the people, such study and observation on the animals were practically impossible. It required the total involvement of the kings, the pundits, the plant scientists, the physicians and above all the common folk and the riders, familiar with the nature of elephants and also the forest area.

From the content it appears that the author was fully conversant with the features and characteristics of different types of elephants coming from different corners of the Indian sub-continent. Their whole behaviour and method of taming and training have been documented with corresponding paintings in the text (Figs. 5,6).

Medicines have been prescribed for curing diseases like diarrhoea, jaundice, heart disease, loss of appetite, syphilis and others. There is also mention of medicines for cooling the temperament of elephants.

But at the same time, it should be noted that the people of Assam had belief in the efficacy of mantras the reflection of which we find in the depiction of *Mandala* i.e. a sacrificial circle in the text<sup>24</sup>. Ritual beliefs and practices are mingled with empirical knowledge in this book. The paintings in the text show a blending of realism, idealism, ritual beliefs and legends of the region. The warning given to the riders as well as to the rulers against the use of elephants without comprehending their nature is also indicative of thorough knowledge of the author on the subject.

That the art of painting was fully developed in Assam, is proved by the treatise. The paintings cover all the types, nature, training and almost everything about elephants. The painters have not forgotten to illustrate the picture of the author and even those of their own, not to speak of the patron King the most enlightened one Siva Sinha and his equally enlightened Queen Ambika Devi along with the nobles, pundits, courtiers and male and female attendants. Royal processions and recreation performances by the musicians and dancers in different garbs are depicted. Dr. S. K. Chatterjee comments, 'the coloured miniatures ... show a very vigorous school of Hindu painting which flourished in the 18<sup>th</sup> century Assam ... the style is distinctive, and this pictorial art of Assam deserves a worthy place beside Rajasthani, Rajput, Kangra and Mogul Schools ... Apart from their topical and historical value, these miniatures

have an aesthetic charm which makes them a possession for ever, 'which lovers of art cannot ignore'<sup>25</sup>.

From a brief survey of the paintings and the literature of the text a few interesting conclusion may be drawn:

- (i) Elephant was an indispensable part of the state building forces since the ancient period. The ethology of elephants flourished as a distinct subject.
- (ii) The illustrated manuscript of the *Hastividyanava* is an outcome of a fundamental thinking of the King and the Queen concerned. The terse content of the subject has been given a lucid touch by the coloured paintings. In this sense it is an innovative attempt. The illustrated *Gajashastrabhasaprabandha* of King Serfoji Bhonsle was a later work.
- (iii) We get the whole canvas of the royal court of Assamese king.
- (iv) From the point of view of women history paintings are of great value. Equal weightage has been given to both King and the Queen as patrons. Prof. S. Barua finds in it an indication of better position of women in Assam than elsewhere in India<sup>26</sup>.

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Fig. 1. The king on the elephant with the fourfold division of the army



Fig. 2. Different kinds of elephants from different regions of India



Fig. 3. Dilbar and Dosai, the two painters were given order by the King Siva Sinha at the queen Ambika Devi to illustrate the content of the whole text Hastividya-nava Sarasamgraha.



Fig. 4. Herbal medicines being applied to the sole of the left leg to make elephant steady and quiet.



Fig. 5. An elephant refusing grass in captivity



Fig. 6. Elephant being tamed