AN OCCURRENCE OF CINNABAR IN *RASĀRṆAVAKALPA*

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The paper presents a brief introduction to the occurrence of cinnabar reported in *Rasārṇavakalpa* with a suggestion to examine the region surrounding Siddhapura in the Kadi district of Baroda, Gujarat.

**INTRODUCTION**

At present there are no localities in India known to produce primary ores of mercury. Hence, the country’s mercury requirements are met by import. It is well known that considerable amounts of mercury were used in the preparations of āyurvedic medicines (Hindu system of medicines) from very early times. Therefore, an attempt was made to scan some of the available texts in Sanskrit on the discipline with the chief object of identifying any locations from where the ancients got mercury ores for their use. One such region reported in a text called *Rasārṇavakalpa*¹ (translated into English by Roy and Subbarayappa, with original edited in Sanskrit, published by the Indian National Science Academy, 1976) is recommended in this paper for detailed examination.

Vāgbhatacārya’s *Rasaratnasamuccaya*² is another text containing much information on the use of mercury in Āyurvedic medicines. As Sharma has rightly commented, the mercury and related materials used to be imported into India as he observed on the term *mleccham* for cinnabar (*htiṅgulam*). Cinnabar is also called *cinipīṭam* meaning ‘China powder’ since it was imported from China. Similarly, cinnabar is also referred to as *darad* connotating the place of its origin Dardistan, i.e. as a country between Chitral and the Indus³.

According to Sharma⁴ “Ball quotes statement made by Mohammedan travellers in the ninth century, to the effect that a party of sailors, having landed on an island supposed to be one of the Andamans, and having lit a fire, saw a metal resembling molten silver (? quick silver) running from the

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heated rock. They are said to have brought away a quantity of the ore, but were compelled by storm to throw it overboard; and the locality though carefully sought for, was never again identified". Further Sharma observed that "Another account by Hamilton ( 744 vol. II 66 : quoted by Aouat 1263-3-12 ) states that a slave from the little Andaman, who had been permitted to revisit his country, brought away a quantity of quicksilver which he reported to be abundant."

However, Bateman* dose not appear to have been aware of the extensive medicinal uses of mercury by the Indian system of Āyurveda. He observed (ibid, p. 614) that mercury or quick silver was known to Aristotle and Theophrastus (315 B.C.) : Chinese knew it, for, a (? wood cut relief) map of China made in 210 B.C. had the ocean and rivers painted by liquid quick silver, and Pliny wrote that 10000 pounds a year mercury were brought to Rome from Almaden in Spain.

Bateman (ibid, p. 615) observed that the mercury deposits are formed from hydrothermal solutions at relatively low temperatures. They may be replacement type, e.g. Almaden in Spain; fissure veins as in Monte Amita in Italy; Breccia fillings as in Idria, Italy; stockworks as in New Idria and New Almadan, California; and poroespace fillings as in Idria, Italy. The deposits may occur in any kind of rock with Tertiary volcanism.

**Occurrence of Cinnabar in Rasārṇavakalpa**

In the text Rasārṇavakalpa are described the preparations called Nāgamaṇḍalakalpa* and Śailodakavidhi. The description of the region given for the occurrence of mercury under the Nāgamaṇḍalakalpa is rather difficult to identify. The commentators have translated the Sanskrit couplets thus—"There is the well-known region of Pariyātra (i.e. mount Pariyātra), in the north of which flows the river Pāra. Near the river, in the east, there exists the Nāgamaṇḍala (i.e. the mount Nāga encircled with a group of mountains) ........651 verse.

"The way on which the Nāgamaṇḍala is situated abounds with all sorts of natural resources which confer perfection in all undertakings (related to alchemical operations) and which are in existence from ancient times (In this mountainous region). The great rivers flow in full stream with their sacred waters. These are the Candrabhāgā, the Gaṅgā (Ganges), the Narmada and the Saraswati"........652-653 (line 1) verse.

"He is stated to have appeared there from the rasakūpa (cave containing mercury) through a path in the nether world"..... 658 (line 1) verse.
"...The Kapila, the lord of the mountains, is situated in the north (of the Nāgamaṇḍala region)"...666 verse.

From the above translation of the description of the region the exact location of the area becomes difficult to identify from our present knowledge of geographical disposition. On referring to books on ancient geography of India, it is noted that Pāra river is the same as Pārvatī river in Malwa, which winding to the north of Marwar, falls into the Sindhu near Bijayanagara.

The western part of Vindhya ranges extending from the source of river Chambal to the Gulf of Cambay, or up to the river Betwa is stated to have the connotation—Pāriyātra or Pāripatra. Day also observed that it comprised the Aravalli mountains and the hills of Rajaputana including the Pathar range, which is perhaps a contraction of Pāripatral. However, the Hindukus and the Pamir have also been mentioned as connoted by the term Pāriyātra.

The term Kapila, denoting a mountain, is perhaps that portion of the Amarakaṇṭaka mountains wherein the first fall of the Narmadā is known as Kapiladhārā. However, the region 24 miles northwet of Nasik is also given as the hermitage of Kapila sage.

In the context of the verse no. 747-748 (line 1) under Śailodakavidhi (ibid, p. 114) translated as below :

"There is a great mountain Kardama, by name. It has four peaks, containing four substances; cinnabar, orpiment, sulphur, and realgar..........." in which the mountain Kardama is noted as perhaps the area of Siddhapura (E 72°30’ × N 24°) in Gujarat, the hermitage of ṛṣi Kardama and birthplace of Kapila. The town of Siddhapura (Sidhpur or Sitpur) is stated to be on the north bank of river Saraswati in the Kadi district of Baroda, Gujarat.

From the above account and also the region being under the influence of the Tertiary volcanism associated with the Deccan Traps, it is suggested that this region surrounding Siddhapura may be examined for the presence of any ore of mercury.

Conclusion

An examination of some Sanskrit texts have indicated the occurrence of cinnabar in the region identified as Siddhapura in the Kadi district of Baroda, Gujarat. Suggestion is made for an examination of the area for the presence of cinnabar and associated mercury ores, if any.
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4. Sharma, Dharmananda, ibid, p. 208.


10. ——— Ibid. P. 1141.
