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EARLY RECORDS OF DIAMOND MINING IN INDIA

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INTRODUCTION

The Indian landmass exhibits a variety of geological features developed at different periods by geological processes that were unique to their time of operation in the earth's history. The bulk of the crust was formed before 2,500 m. y and is formed in Archaean continental nuclei. The later grew into major cratonic segments over the period covering the entire of Proterozoic (Fig. 1.1).

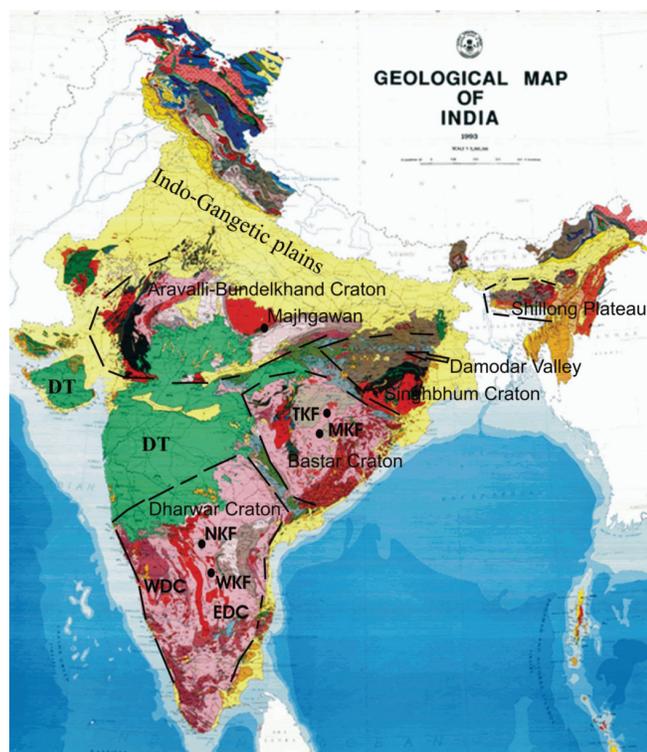


Fig.1. The cratonic regions of India with major kimberlite field locations: Explanation of symbols; WKF- Wajrakarur Kimberlite Field; NKF Narayanpet Kimberlite Field; TKF = Tokapal Kimberlite Field; MKF = Mainur Kimberlite Field. WDC = West Dharwar Craton. EDC = East Dharwar Craton. ET = Deccan Traps.

INDIA AND THE DIAMONDS

Diamonds and the rocks that contain them are known in India since four thousand years. The gem, known here as

vajra, is reported to be bountiful in many parts of this land during ancient times. Outstanding physical properties of diamond and the ways and means of enhancing its beauty were first recognized here. The early travelers were fascinated by the hardness of these stones that are cut and polished by its own material. And once attained, the beauty of stones is retained to the eternity. These travelers carried the stories of diamond to the outside world. The references of Indian diamonds entered the folklores, literature and the greatest of the plays ever written in foreign languages. This stone together with the yellow metal gold were the two greatest attractions for anyone living outside the Indian territories including the travelers, merchants, plunderers, chieftains, generals and the kings. In a way, much of the medieval history of India and the destinies of the people living here were influenced by these natural resources. Exploitation of diamonds reached its zenith, during 17th Century A D. It was during this time the diamond industry employed tens of thousands of employees. The number of workers employed in diamond search and lapidary was highest next only to the number of persons employed in the armies of the rulers of the time. The historically famous diamonds like Great Moghul – 900 cts; Nizams – 440 cts, Regent-410 cts, Orloff 195 cts; Daryay-e-Noor – 186 cts; Shah – 95 cts, Archduke Joseph – 76 cts, Hope - 182 cts, Kohinoor - 793 cts and many large unnamed and unknown stones were recovered from this land.

Dharwar Craton

South India is known for its world famous large size beautiful diamonds since historical times. Though the diamond mining activity in erstwhile Golkonda kingdom is known since third century B.C., the diamond exploration activity prior to this period in this region is not very well documented albeit references by Ptolemy regarding existence of a diamond river that reportedly flows in South India and also unconfirmed reports of knowledge of diamonds to the people here about 4000 years ago. Detailed account of the mining activity during medieval period, its trade and lapidary is, however, recorded in the writings of French traveler Jean Baptiste Tavernier (Fig.2) who visited India during 1652 (Ball, 1881; Howard, 1677; Tavernier, 1925). His countrymen



advised him not to take up the journey, but he risked his life to see the diamond mines, wanted to be the first European ‘to open the route for the Franks’, (Frank is the distorted form of Firaungi, the local term for the Europeans). He has mentioned that about 60,000 workers were employed in the diamond industry of South India.



Fig. 2. Portrait of Jean Baptiste-Tavernier (1605-1689) by Nicolas de Largillière. Source – Wikipedia

Tavernier visited three of the numerous diamond mines of that time and collected few large diamonds whose beauty and rareness remain unsurpassed today: the Koh-i-Noor (Mountain of Light) and the Hope (Large Blue Diamond) are only two examples of the magnificent and invaluable stones with which he returned to Europe. The sketches of the two diamonds (Fig 2 and 3) he provided in his chronicles (Tavernier, 1925) are the earliest documentation of the Indian diamonds. Most of the mine sites during the medieval period were clustered in gravels situated on the terraces and palaeo-channels of the rivers Krishna and Penner, and also in the conglomerates of Banganapalle Formation of Kurnool Group.

Earl Marshall of England described the Maddimadugu diamonds as of excelling in quality. Paritala area was worked for diamonds by Hyderabad Deccan Company between the

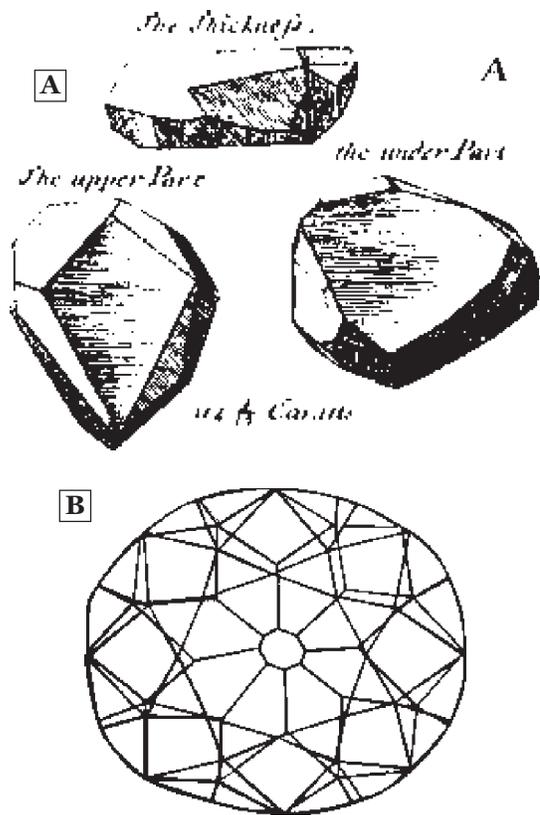


Fig.3. Tavernier's original sketch of A. "The Tavernier Blue (Hope Diamond)" and B. Kohinoor.

years 1840 and 1894 and produced 3,444 stones weighing 2,085 carats. The famous "Kohinoor" diamond was recovered from Kollur area. The ancient chronicles including those of 15th Century AD are also replete with references to "Raichur Doab" which was referred to as the hub of diamond mining activity from where the Sovereigns had regular income to their kingdom. European travelers and traders, Portuguese and British officials, and 19th and 20th Century geologists from the Geological Survey of India (GSI) have made record of South Indian diamond occurrences and resources. In view of the extensive diamond workings during the past the exploration activities are spread over a large tract in south India. The region is therefore referred to as South Indian Diamond Province.

Aravalli Craton

The Aravalli craton has the distinction of hosting the only diamond producing mine in India. The diamondiferous rock



at Majhgawan (24°38'30"N: 80°02'E), near Panna, described as diamondiferous green mud by the early geologist (Franklin, 1829) was discovered during thirteenth century AD (cf Haggerty, 2004). It is less common knowledge that the first recorded recovery of diamonds from their primary igneous source rocks, as early as 1827, was at Majhgawan, India. Had more interest been taken in the Indian occurrence "majhgawanite" might have taken precedence over kimberlite as the general term for diamond bearing rocks (Mitchell, 2008). The small scale diamond mining of the Majhgawan body began during the medieval period (Chatterjee and Rao, 1995) was continued during 20th Century as well. The recent mining activity in this body was by M/s Panna Diamond Mining Syndicate, which mined the pipe-rock till the year 1959.

The region is also known for fairly extensive secondary sources for diamonds like gravels and conglomerate. The latter has dimensions of about 100 km in length and 25 km width from Jhanda (Satna district) in the northeast to Kararia (Panna district) in the southwest. The primary and secondary sources of diamond together constitute the famous Panna Diamond Belt. These conglomerates and gravels are reported to be the sources of diamonds in Panna region since pre-historic times. The incidences of secondary diamonds over such a large area and inadequacy of a single pipe rock at Majhgawan to feed the diamonds for sedimentary basin lying far off from it prompted several generations of geologists to make all out efforts to locate the primary source/s. Despite intense search the primary source/s for the gravel diamonds of the region is still elusive.

Bastar Craton

The recent exploration activities have made it clear that this craton is the most promising of all the Indian cratons from the point of view of occurrence of diamonds. Reports of diamond incidences and its mining in the Bastar Craton date back to the British period. In the year 1766, an Officer of Robert Clive by name Mott, reportedly purchased a few diamonds which were collected at the junction of Ib and Mahanadi rivers (Mott 1799). In a detailed account of diamond workings of Sambhalpore region, Breton (1827) described that between 1804 and 1818 several diamonds were found and one among these weighed about 810.6 carat. Nothing is known about subsequent history of this large size diamond. The other important diamonds were two diamonds weighing 346 and 368 carat owned by Rani of Sambhalpore and 100 carat diamond purchased by a British agent and forwarded to the government. Oseley (1840) has described the process of washing for gold dust and diamond in Heerakhond (Hirakhud). Ball (1877) gives the details about the manner in which diamond was searched for in the Raja's time. Ball (1877) opined that the Vindhyan rocks dissected by faults

as the possible source for diamonds. During early 1990's local villagers reported the presence of gem-quality alluvial diamond about 150 km SE of Raipur and the source of these diamonds were traced to a cluster of four diamondiferous pipes in Mainpur area and the region is now known as Mainpur Kimberlite Field.

CONCLUSION

From its position of importance in the knowledge about diamonds and their host rocks, India gradually lost its preeminent position. The primary sources of the large size diamonds could not be identified. Whereas the different countries in the world with similar geological set-up witnessed an exponential increase in diamond production during the later half of the last century, the ever-dwindling diamond production in India reached its nadir. However, in the recent years, a quantum change in diamond exploration activity has occurred. Many national agencies have prioritized the diamond exploration activity; besides, multi-national agencies with their vast experience in Africa, Australia and Canada have entered exploration activity in different parts of India. This resurgence has fructified in identification of number of new diamondiferous kimberlite provinces in Central India and Southern India.

There is a strange but strong bond between India and diamond. All through the history India dominated diamond production. Presently, nine out of ten diamonds recovered from diamond mines in different parts of world enters India for cutting and polishing before they travel to international market. Table-1 gives the details of gem diamonds imported to and exported from India. Indian lapidary, the best in the world, particularly outstanding in handling the small size stones, has made this country proud. It employs about a million people and continues to earn significant chunk of foreign exchange to the country.

Table-1. Data pertaining to import of rough diamonds and export of cut and polish diamonds from India.

Export				
Items	2007-08		2008-09	
	Quantity in 100,000 Carats	Million US \$	Quantity in 100,000 Carats	Million US \$
Cut & Polished Diamonds	431.54	14205.31	467.23	14804.06
Import				
Rough	1715.49	9796.90	1188.54	7959.63



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