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MORE KOHINOOR DIAMONDS FROM INDIA



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Preface



It is heartening to know that India introduced diamonds to the world, just as it introduced the symbol of zero and a counting system, which is the root of all technological developments.

Diamonds are nothing but pure carbon. Carbon is fascinating! One form of carbon, coal, has low value, and tonnes of it are burned daily. Another form, graphite, is a good electrical conductor and is also the core of our pencils. A small change in atomic orbital hybridization, from SP2 to SP3, in other words from three bonds per atom to four, transforms carbon into diamond, the hardest and most valuable material. Diamonds have a high refractive index (2.4), which causes light to bend sharply and create multiple reflections, resulting in brilliance. Their high dispersion leads to flashes of colour.

Dr. T.M. Babu traces the history of diamonds and their mining. It was Indians who first found natural diamonds in caves. Diamond mining, cutting, and polishing were popular in our country, making India the only source of diamonds for the world. However, with time, our diamond story became dim. Dr. T.M. Babu argues that we have the potential that needs attention and revival.

This booklet tells the brilliant story of our diamonds and serves as a resource and guide for the future of our diamond industry. The Academy of Science, Technology, and Communication (ASTC) is pleased to present this volume.

Dr. Ch. Mohan Rao
Chairman-Scientific Advisory Council, ASTC

* CSIR-Distinguished Scientist & Former Director CCMB, Hyderabad

Editor's Vision



The Academy of Science, Technology, and Communication (ASTC) has decided to publish a series of booklets titled "ASTC COMMUNICATIONS" covering various contemporary scientific topics to reach a wider audience. This booklet in this series, "More Kohinoor Diamonds from India," was authored by Dr. T.M. Babu, an exploration geologist with over 50 years of global experience in diamond, gold, platinum, and strategic metals exploration. Dr. Babu has authored several books on diamonds, gold, platinum, tin, mining, and metal extraction and has published numerous scientific articles in national and international journals.

With his extraordinary expertise in this field, Dr. Babu narrated an interesting story about diamonds in a very popular way, tracing their origins and exploring their significance in today's context in India. He brings to light several fascinating links, including those to Shri Pingali Venkaiah and Sir C.V. Raman. While Shri Pingali Venkaiah is widely known as the architect of India's Tricolor flag, Dr. Babu introduces him as a "Born Geologist," highlighting the lesser-known fact that he had prepared a map of diamond-bearing areas in South India.

Dr. Babu also highlights Sir C.V. Raman's 1968 scholarly article in Current Science, which included a map of diamond-bearing areas in the river valleys of Krishna, Pennar, and Godavari in Andhra Pradesh. Through this booklet, Dr. Babu presents a captivating narrative on diamonds, including the Kohinoor Diamond.

ASTC will continue to publish "ASTC Communications" on diverse scientific topics at regular intervals for the benefit of all. We welcome your feedback and suggestions on these publications.

Dr. R.B.N. Prasad
Chief Editor

Former Chief Scientist & Head, Centre for Lipid Research, CSIR-Indian Institute of Chemical Technology, Hyderabad,
Former President, Oil Technologists' Society of India.

President's Voice



Diamonds have long captivated humankind, not only for their brilliance and beauty but also for the stories they carry of history, science, and innovation. India, the land that introduced diamonds to the world, holds a rich legacy in this field. For centuries, magnificent stones from our land adorned the crowns of emperors and symbolized prosperity. The legendary Kohinoor is just one among many extraordinary gems that emerged from our soil. Yet, few realize that India has been a treasure trove of such remarkable diamonds.

India's illustrious diamond heritage, from the historic mines of Andhra Pradesh to the world-renowned Kohinoor, now finds new expression through Gujarat the home state of Hon'ble Prime Minister Narendra Modi ji eading the world in diamond cutting and polishing.

With great pride, the Academy for Science, Technology, and Communication (ASTC) presents this insightful booklet, "More Kohinoor Diamonds from India", authored by the distinguished geologist Dr. T.M. Babu. This work not only delves into the historical and geological significance of diamond mining in India but also highlights the potential for revitalizing this industry. As a nation with a storied past in diamond mining and trade, India must now leverage its scientific and technological advancements to reclaim its prominence on the global stage.

I extend my sincere appreciation to Dr. T.M. Babu for compiling this valuable resource. My gratitude also goes to the Scientific Advisory Council for their guidance and to Dr. R.B.N. Prasad, Chief Editor, for his meticulous efforts in refining this publication.

May this booklet spark renewed interest in India's diamond legacy and encourage thoughtful discussions on harnessing our resources for the future.

Let us continue to explore, innovate, and celebrate the wonders of science together.

Dr. C. Manikyamba
President, ASTC

Emeritus Scientist, CSIR-National Geophysical Research Institute (NGRI), Hyderabad

From Secretary's Desk

With immense pride, I extend my heartfelt greetings to all well-wishers of the Academy for Science, Technology and Communication (ASTC). As we celebrate two decades of unwavering commitment to science and technology, we reflect on our journey while shaping the future. Since its inception in 2004, ASTC has championed scientific knowledge, fostered interdisciplinary collaboration, and inspired young minds. Our mission remains steadfast: cultivating scientific temper, advancing research and innovation, and translating knowledge into societal progress.

Through high-impact lectures, seminars, symposia, workshops, and publications, we bridge the gap between scientific advancements and public awareness. Our academic initiatives ignite curiosity and nurture the next generation of scientists and engineers. A highlight of our efforts is the Annual Convention, where we recognize excellence through Lifetime Achievement Awards, Excellence Awards in Science and Technology, and Science Popularization Awards. We also honor the legacies of luminaries such as Dr. Vikram Sarabhai, Dr. Yellapragada Subba Rao, Dr. S. Bhagavantham, Dr. V. Ramalingaswami, Dr. K. V. Raghavan, and Dr. S. Balakrishna through prestigious memorial lectures, ensuring their contributions continue to inspire.

Committed to making cutting-edge scientific knowledge accessible, ASTC publishes concise, insightful booklets on contemporary topics, bridging complex ideas and societal understanding. Our flagship series, "ASTC Communications", serves as a critical platform for distilling and disseminating advancements in science and technology, fostering an informed and empowered society.

We extend our deepest gratitude to Dr. T. M. Babu, a distinguished geologist and acclaimed author, for his invaluable contribution to this series. "More Kohinoor Diamonds from India" is a testament to his expertise and lasting impact in geology. Our greatful thanks to Dr. R.B.N. Prasad, Chief Editor for his continuous support and his commitment to clarity and accuracy ensures that this work reaches a wide audience with meaningful impact.

ASTC remains a driving force in scientific engagement, and we deeply appreciate the unwavering support of our Scientific Advisory Council, our partners-including B. M. Birla Science Centre and NASI Local Chapter-and all who share our vision.

Together, we build a scientifically empowered future!

Sri. C.L. Narasimha Rao
Secretary, ASTC

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More Kohinoor
Diamonds From India

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Mineral Wealth of Andhra Pradesh

Andhra Pradesh is one of the mineral-rich states in South India with a glorious past in the mining sector right from gold and diamonds as per ancient reports and historical records. In addition, it is endowed with many other metals and industrial mineral commodities like bauxite-aluminum ore, manganese, cement-grade lime stone, barytes, coal, talc-steatite, decorative granite stones, copper, lead, zinc and many more with a long of list of 48 economic minerals. Gold mining was active in the Ramagiri-Bhadrampalli areas in Anantapur district, Chigargunta-Bisanatham fields in Chittoor district and Jonnagiri-Erragudi-Pagadarayi in Kurnool district. It has been estimated that the state has gold ore resources of 12.46 million tonnes. As per Geological Survey published reports about 1.823 million carats of diamonds are hidden in the state mainly from Anantapur, Kurnool, Krishna and Guntur districts along Krishna and Pennar River valley areas.

It has huge resources of about 67.98 million tonnes of barytes in Kadapa, Anantapur and Nellore district which is the repository of 90% of known reserves in India and about 25% of world reserves. In West Godavari district alone about 2000 million tonnes of coal and in various other districts, a staggering 17432 million tonnes of limestone suitable for the cement industry have been estimated. More than 6 million tonnes of graphite and Beach sands rich with titanium and other rare heavy metals with about 327 million tonnes of resources are found all along the coastal plains spread over from Srikakulam to Krishna district. Nearly 300 million tonnes of iron ore resources were estimated from Prakasam, Guntur, Anantapur and Kurnool districts. Copper, lead and zinc deposits of more than 12 million tonnes of ore resources proved from Guntur, Kadapa and Kurnool districts. Andhra Pradesh pioneered in preparing decorative granite stones and exporting to different countries for the last several years. According to an estimate, there are more than 132 million tonnes of decorative stones found within the state.

The state was called as *"Ratanala-Seema"* which means Diamonds-Land. By proper management of the rich mineral resources of the state there is scope for Andhra Pradesh to become one of the richest states in the country.



Fig-1: Andhra Pradesh was called earlier as *"Ratanala-Seema"* which means diamonds land.

The First Diamond Discovery

India holds the distinction of being the first country in the world to discover diamonds. Until the 16th century, India was the sole global hub for diamond mining, cutting, polishing, utilization, marketing, and export. Many legendary historical diamonds, including the Kohinoor, Hope, Orloff, Pitt, Darya-ye-Noor and many others were originally found in India and later taken away to various other countries. India's unique status as a producer of diamonds has fascinated people worldwide. It is interesting to delve into the history of diamond mining and trade in India.

Diamond mining and trade attracted worldwide recognition and reputation to India. Its wealth attracted attention leading to arrival of travelers, traders, traitors and invaders. Some came to this country as traders to buy spices finally occupied the country and ruled for several centuries.

Despite numerous historical events such as invasions, socio-political upheavals, downfalls, colonization, and the impacts of World Wars I and II, India stood as the birthplace of many ancient and legendary diamonds like the Kohinoor. Interestingly most of the historical diamonds were recovered from Andhra Pradesh. With this rich heritage and enduring spirit, there is scope and hope to revive the diamond mining industry in Andhra state and in the whole India now (fig.2).

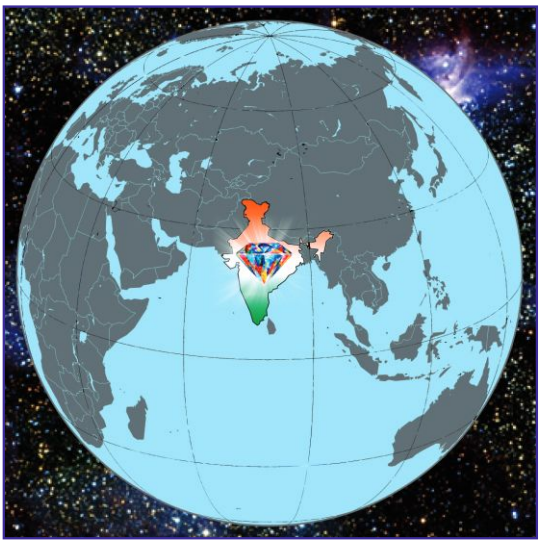


Fig-2: India is world's first country to discover, mine, cut, polish, market and export diamonds to all other countries.

Ancient Scriptures to Historical Reports

Descriptions of diamonds can be found in the oldest Indian Vedas, which were first orally composed hymns of around 2000 BCE, a time when written scripts had not been discovered. By recitation, it was transmitted from one generation to other. Diamonds were designated as the "king of gems" among other precious stones in ancient texts such as the Vedanta, Upanishads, and other scriptures. These references date back to periods even before the era of Gautama Buddha and long before the birth of Jesus Christ. The significance of diamonds was elaborated in Indian epics Ramayana, Maha Bharat, Bhagavat Purana and Bhagavat Gita. Kaustubham, a magnificent diamond is reported to have recovered in course of a great superhuman mission of churning the ocean as per a legend.

Historically, in 3rd century BC Kautilya-Chanakya in his volume Artha-Sastra, a book of economics listed six diamond-bearing locations as 1) Sabha Rastra, 2) Madhya Rastra, 3) Kasmika, 4) Srikanta, 5) Mani-mantaka, 6) Indravana. In 6th century Varaha Mihira in his book Brihat Samhita reported 8 diamond bearing areas in India as 1) Vena, 2) Kosala, 3) Saurashtra, 4) Suraparaka, 5) Himavat, 6) Matanga, 7) Kalinga, 8) Pundra.

Gaius Plinlus Secundus, known in short form as Pliny, the Roman army commander of first century in his encyclopedic work *Naturalis Historia* book described the diamond occurrences in India in deep jungles and how the diamond mining and diamond recoveries carried out using eagles. Leonard Gorelik and John Gwinne described trade of Indian diamonds around 250 BC not only as gems but also as sharp cutting tools. Claudius Ptomaeus of Greek descent known in English as Ptolemy designated diamond trading routes from India to Venice.

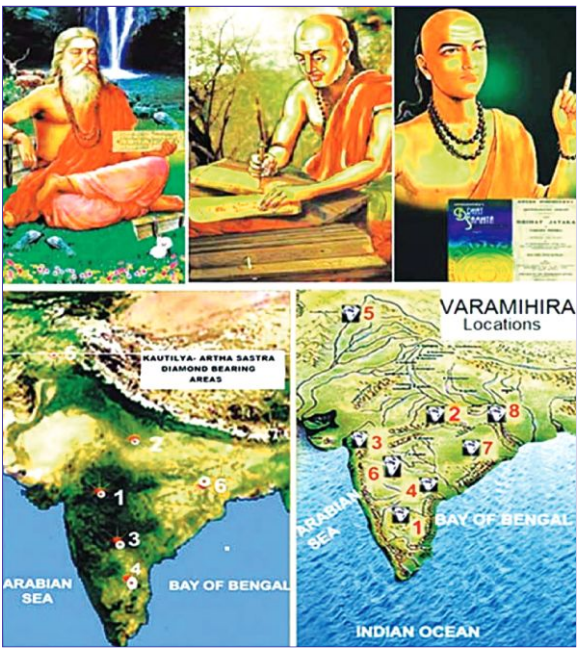


Fig-3: Kautilya in his book Artha-sastra, Varaha Mihira in his book Brihat Samhita Gaius Plinlus of Rome and Marco Polo traveler accounts described about diamonds in India.

Marco Polo (1254-1324), a trader and traveller, who lived in Venice in his book The Travels of Marco Polo described about Kakatiya kingdom of Queen Rudrama Devi in South India. He furnished information about the great wealth of diamonds, rubies, sapphires, emeralds and other gemstone in India and reported that it was astonishing.

Diamond Heaps in Street Market

Vijayanagar Hindu kingdom was established in 1336 at the banks of Tungabhadra River within Krishna River valley area. That empire controlled entire south India for more than 300 years till 1646 with great legacy. It is mentioned that diamond mining and trading activity during that period reached the peak. Further it is recorded that diamonds were sold in heaps in local street markets and not as individual stones. Nicolo de Conti (1385-1469) visited Vijayanagar empire and in his book Le Voyage Aux Indes, the significant diamond activity of Andhra Pradesh is described. Garcia da Orata (1501-1568), a Portuguese physician and naturalist described how diamonds are extracted in the mines and sold in the streets of Hampi the country's capital city market. He visited diamond mines where in diamonds are recovered even from hard primary rocks at that time when no diamond-producing rocks were known to the world. Caesar Frederick another Venice merchant who visited Vijayanagar city in 1567 in his book Peregrination in India described the diamond mines of the area now part of Andhra Pradesh.

Jean Baptiste Tavernier was a French jeweller and diamond merchant living in Paris, France. Hearing about the diamond trade in Andhra Pradesh made six visits to India from 1641 to 1660. South Indian diamond marketing center during that time was known as Golconda Diamond mart. Its original name was *''Golla-Konda''* means Shepard or cowmen hill. He published a book Les Six voyages De Jean Baptise Tavernier. It was translated into English language by V. Ball of Geological Survey of India as "Travels in India by Jean Baptiste Tavernier, Baron of Aubonne". Tavernier visited the Kollur diamond mines of Andhra Pradesh in 1645. At that time, it was the largest diamond mine with 60,000 workers. He reported that Kollur diamond mine produced a large 900 carat diamond which according to Ball was the world-famous Kohinoor. In 1660 he visited another mine known as "Ravvala-kota" (Ramalla-Kota) and described that the diamonds of that area were whitest of white and cleanest of clean and sketched in his book many diamonds he purchased. He also furnished maps with location of diamonds found during his visits. He mentioned that Golconda was the diamond cutting, polishing and marketing center for all diamonds.

After Jean Baptiste Tavernier, Earl Marshall Henry Howard of England furnished a good report on Diamond occurrences and mines in South India to the Royal Society

of London on 25 June 1677 as Philosophical Transactions. Streynsham Master, one of the early pioneer visitors British East India Company visited Golla-pally diamond mines of Andhra Pradesh in 1679 and reported how Jewish traders of Portuguese origin staying in Goa were carrying out the diamond trade. They made London as main sales center for diamonds and wrote that the most lucrative commodity of all Anglo-Indian trade was diamonds. His observations and recordings were published in 1911 at London.

Subsequently, several visitors, travellers, traders and geologists reported about the significant diamond mining and production mainly from Andhra Pradesh state of South India. Benjamin Heyne (1770-1819), Henry Wesley Voysey (1791-1824), Carl Ritter (1836), William King (1809-86) geologist of Geological Survey of India, Valentine Ball (1843-94), Alexander Walker (1850), Sir Richard Francis Burton (1821-90), M. Chaper (1882), Robert Bruce Foote (1834-1912) carried out extensive studies on diamond occurrences and published their findings as Records and Reports.

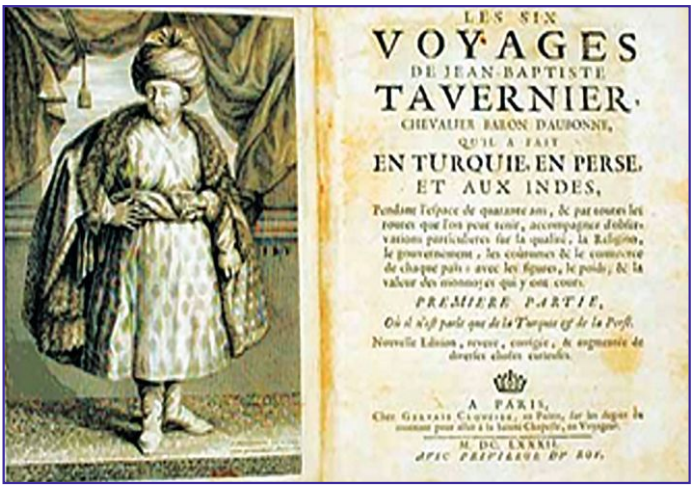

LES SIX
VOYAGES
DE JEAN-BAPTISTE
TAVERNIER,
CHEVALIER BARON D'AUBONNE,
QU'IL A FAIT
EN TURQUIE, EN PERSE,
ET AUX INDES,
PREMIERE PARTIE.
A PARIS,
M. DC. LXXXII.

Fig-4: Tavernier, diamond trader from France made six visits to India and reported hectic diamonds activity in Andhra Pradesh

Diamond Geologist Venkaiah

Pingali Venkaiah was born in 1878 in a small, village Peda-kalle-palli in Divi taluk of Krishna District in Andhra Pradesh. At the age of 19 years he was inducted into British Indian army, sent to South Africa to fight their own war against Dutch people from 1899 to 1902. Looking at the self-centered interest of Britishers got frustrated saluting their flag, he turned into an Indian freedom fighter and

designed the National Flag of India in 1916. He got appreciations of Mahatma Gandhi, the father of the nation and many national leaders as architect of the Tri-colour Flag.

He studied geology at Presidency college, Madras (now called Chennai) and carried out research in diamond exploration for 20 years from 1927 to 1947 in Andhra Pradesh. He enlisted 23 old diamond mines from the Kingdom of Golconda and 15 abandoned diamond mines from the Kingdom of Visiapore which later became part of Andhra Pradesh state. He prepared a map of diamond-bearing areas in South India covering the region around Guntakal-Gooty and Wajrakarur- Dhone area (Fig.5). He highlighted details of diamond-producing areas like Wajrakarur, Lattavaram, Kongana-palli, Tuggali, Payapali, Jonnagiri, Kollur, Paritala and others. After considerable research, he gave 20 corrected names of diamond mines which were misspelled by earlier workers as shown table No.1. He also furnished the latitude and longitudes of many diamond occurrences for easy identification with precision.

Table No-1: The corrected misspelled village names of 20 diamond fields and mines in Andhra Pradesh furnished by Pingali Venkaiah.

No	Corrected names by Venkaiah	No	Corrected names by Venkaiah
01	Kollur	11	Tuggali
02	Kodavaricallu	12	Peravali
03	Mylavaram	13	Madanantapuram
04	Bhatrupalem	14	Girigetla
05	Ramana-goodem	15	Wajragiri
06	WajraKarur	16	Munimaduru
07	Ganjeecunta	17	Lingambodu
08	Lattavaram	18	Gadehotoor
09	Jonnagiri	19	Maddimadugu
10	Pagidiroy	20	Mallavally

He remained as unsung hero as he was not invited and present at New Delhi when the national flag he designed was being hoisted on 15th August, 1947 at the time of celebration of Indian independence. When he died as poor man in 1963 his son Parasuramaiah published his work on diamonds in the form of a booklet by name "The Diamond Lore". Dr. Pattabhi Sitaramaiah, another great freedom fighter and political leader of Andhra Pradesh appreciated the father and son as "Diamond Duo". He described them as "Black Diamonds engaged in search of Sparkling diamonds". He carried out research work for diamonds under Prof. C.S.

Pichmuthu of Mysore University for his Ph.D. Hearing about his death professor acclaimed him as "A BORN GEOLOGIST: *I am filled with grief as I did not know about his greatness till, he passed away. So humble was he, never once spoke of himself or his achievements or his association with leading personalities in Indian politics. I know him only as a private geologist whose one ambition was to unravel the mystery of the origin of diamonds in Andhra Pradesh"*

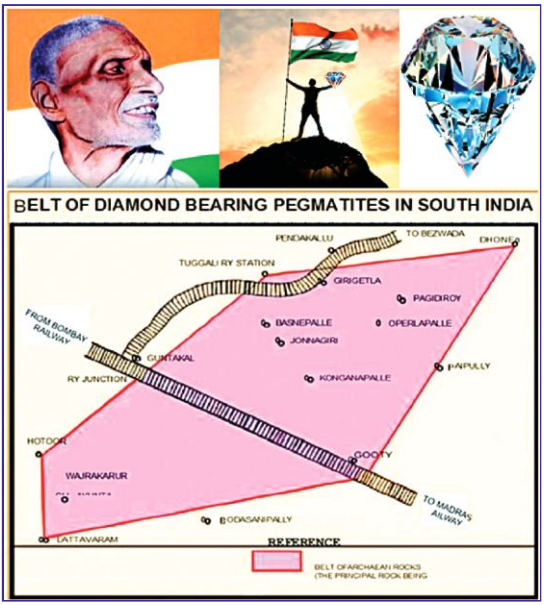


Fig-5: Pingali Venkaiah and his map on diamond occurrences of Andhra Pradesh

The good works of Venkaiah and Parasuramaiah were not further followed up and investigated appropriately after their deaths. Not many people referred their findings, exploration work on diamond occurrences, research to revive any of the old mining sites in Andhra Pradesh.

Noble Laurate Raman's Findings

Bharat Ratna- Sir-Chandrasekhara Venkata Raman was first Indian to get Nobel Prize Award in Science in 1930. When India got independence in 1947, he had the courage to declare that "Independence to India was not complete without getting back Kohinoor".

After getting the Nobel Prize and several other awards he got interest in diamond occurrences in south India mainly from Andhra Pradesh around Krishna River valley area. Though he was physicist he wrote several scholarly writings on the geological and geomorphological setup of diamond bearing areas around Godavari-Krishna-Penner River valleys. He reported the extensive coastal material brought by these rivers from Kakinada to Nellore towns in Andhra Pradesh. He projected the diamond locations around Paritala, Atkur, Munnaluru, Mogaluru, Koduvati-kallu and Ustapalle at the north of Krishna River and large historical mine at Kollur, south of the river and at the right bank. He emphasized about the problem of locating original source of these diamonds found in the river

alluvial placers and exploiting these original sources to the fullest practical extent. He recommended to critically examine the exposed areas of the river gorges. The diamond-bearing areas west of Lattavaram and Guntakal, east of Dhone and Gooty and diamond mining activity of 16th and 17th centuries around Wajrakarur were also mentioned by him.

In 1968 he published a very scholarly article in Current Science Journal in volume 37. His map showing the diamond-bearing areas in river valleys of Krishna, Penner and Godavari of Andhra Pradesh is shown in fig No. 6. He reported that the story of diamonds in Krishna valley need not be treated as closed chapter having only a historic interest and that on the other hand it may well prove to be a subject of practical importance at the present time if pursued vigorously with the necessary circumspection".

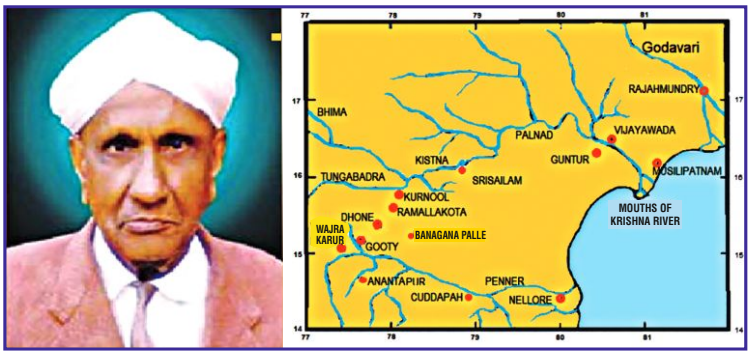


Fig-6: Sir CV Raman, Noble laurate explored diamonds occurrences of Andhra Pradesh and prepared a map of potential areas.

Krishnan Publications

Maharajapuram Seetharaman Krishnan (Fig.7) is the first Indian geologist to head Geological Survey of India, the largest earth science organization of the country. Prior to that all heads of the organization were of British origin without any national interest to develop Indian diamond mining industry. From 1951 to 1970 in series of publications he described distribution of occurrences which include several diamond bearing fields in Andhra Pradesh. He wrote about the significance of Golconda mart near Hyderabad as the diamond marketing capital of the world. He pointed out that there were many active mines in the earlier part of the nineteenth century but the industry had completely died out since then. He enlisted several diamond bearing localities with precise locations with latitudes and longitude. Krishnan was awarded Padma Bhusan in 1970 for his great contributions to the geology of India.

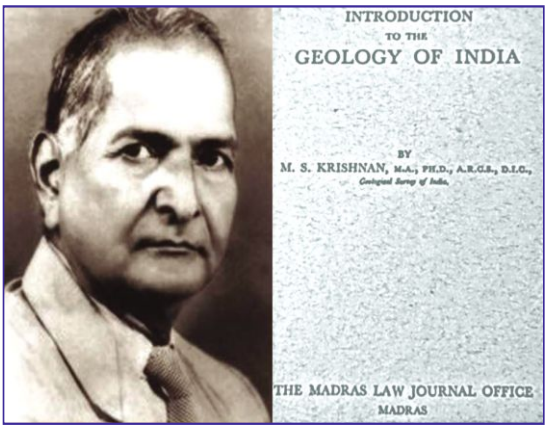


Fig-7: M.S. Krishnan carried out extensive exploration and brought out several diamond bearing fields in India.

Indisputable Records and Reports

NVBS Dutt, who worked as Director of the Geological Survey of India described about ancient diamond activity in Andhra Pradesh and its future prospects in 1953. He published a comprehensive book on the geology and mineral resources of Andhra Pradesh. He also published a list of diamond bearing localities around Munimadugu-Banganapalli, Ramallakota-Betamcherla-Kalava and Varakuru-Oruvakallu areas.

In addition to these publications, a plethora of information is available about diamond mining areas in Andhra Pradesh in State, Central Government Archives and departmental libraries. Geological Survey of India, Indian Bureau of Mines, National Mineral Development Corporation have published and unpublished reports. A comprehensive compilation of diamond mines of India was published in the books Diamonds in India in 1998 and Glorious Indian Diamonds in 2015.

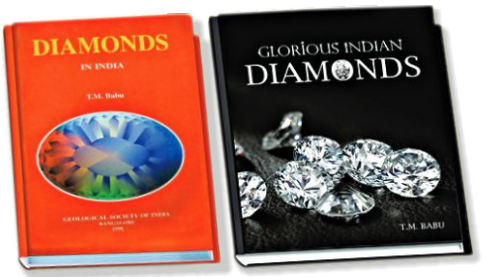


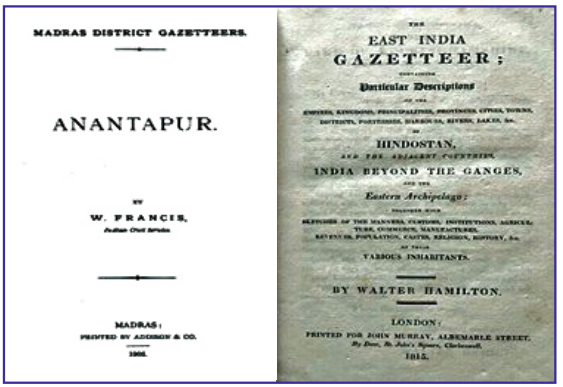
Fig-8: Comprehensive books on Diamonds of India were published in 1998 and 2015 bringing out all diamond locations in the country.

Death of Diamond Mining Industry

People question and could not understand why once such a great diamond mining and marketing industry of Andhra Pradesh had a sudden death and could not revive even after the country gained independence. There is more than one reason mostly based on political grounds and not of economic or technical considerations. As per some historians around 16th century, the invaders Mohammed Ghori, Ghazani, Mogul warriors, Britishers occupied most of north India. During that period most of the diamond mines were in South India, around the Godavari, Krishna and Pennar River valley areas as described above. After the fall of the wealthy Hindu kingdom of Kakatiya dynasty at Godavari River region there was rethinking and review about diamond mining industry. South Indian Kings, rulers and state heads believed that the diamond and gold mining centers present in their territories are vulnerable to attract more wars from invaders of north India. They ordered closing down all diamond mines one after another without leaving any earlier traces. After the fall of Vijayanagar empire ruling South India around 16th century the entire diamond mining in South India abandoned.

Invasions from Mogul rulers from North India came to an end when British colonial rulers have taken over the control of South India. There were few attempts for a revival of diamond mining industry in Andhra Pradesh. In fact, mining on a modest scale commenced at a few places. But things did not go well even under the British colonial rule in India for the diamond industry.

Walter Francis was a British collector for Anantapur District ruling southern part Andhra Pradesh around 1905. At that time most of diamond fields were under Madras Presidency officially called as the Presidency of Fort St George until 1937. In Gazetteer of Anantapur district published in 1905 at Madras by Addison & Co., he reported in page 10 that *"Of the economically valuable minerals diamonds come first. They occur occasionally on the surface of Vajra-Karuru in Gooty taluk"*. From page 167 to 168 under Vajra-karur elaborate details were furnished. Madras Presidency Diamond Fields Co Limited was floated to continue diamond mining operations. But there was considerable opposition from diamond interests of Hatton Garden as the London merchants many of them owned interest in South African diamond mines which was discovered. They don't want the highly valued Indian diamonds with more "fire" than African diamonds should come into the market as it will depreciate their own diamonds. Thus, to promote African diamond market, the Indian diamond mining and marketing industry was given a death sentence to close down. As a result, the glorious Indian diamond industry died a premature death during British colonial rule and could not revive even after Indian independence.


MADRAS DISTRICT GAZETTEERS.

ANANTAPUR.

W. FRANCIS,

MADRAS:

THE EAST INDIA GAZETTEER;

Particular Descriptions

HINDOSTAN,

INDIA BEYOND THE GANGES,

Eastern Archipelago:

BY WALTER HAMILTON.

LONDON:

Fig-9: W. Francis of British East India company reported about diamonds in India how it was closed down due to political reasons

Kohinoor - Mountain of Light

No other precious gem stone in the history of mankind got so much attention than Kohinoor diamond. Historians described its long intricate history, poets wrote poetry, film makers made movies, story tellers wrote novels making Kohinoor as central theme. In Maha Bharat epic, Bhagavat Purana and Vishnu Purana scriptures a large diamond similar to that of Kohinoor was described. Some legends claimed that Samantak-mani described in Hindu scriptures which was gifted by Sun God to King Satrajit for which Lord Krishna fought war with Jambavant was in fact the Kohinoor diamond. As there are many stories interwoven it is difficult to distinguish between fact and fiction or get clarity between legend and history.

As per historical records this famous diamond was first found during the Kakatiya Kings dynasty ruled parts of present-day Andhra Pradesh and Telangana from 1163 to 1323. That kingdom was spread out around Godavari and Krishna rivers with Orugallu as their capital, now known as Warangal. That kingdom was said to have huge quantities of diamonds and gold. During that period the Kohinoor diamond was known as Kollur as it was found near the village Kollur in Krishna River Gravels. King Pratap Rudra, Queen Rudrama Devi and others who ruled the area was known to have huge pile of diamonds and gold jewelry. Marco Polo and other travelers who visited the kingdom from 1289 to 1293 described about Queen Rudrama Devi rule and richness of the kingdom with plenty of wealth of gold and diamonds production and trade.

After that era, in 1323 that diamond was with Mohammed Bin Tughluq of Delhi Sultan who occupied Kakatiaya kingdom, looted their treasury and taken away all

diamonds including Kohinoor to Delhi. It was referred in Memoirs of Sulan Baber, the founder of Mogul dynasty in 1526. Babur killed Ibrahim Lodi and took the diamond and named it as "Babur diamond". William Methwold (1590-1653) English merchant and British colonial administrator in India of East India Company is reported to be the first to visit Kollur diamond mines in 1622 where in Kohinoor was found. Later, Aurangazeb (1658-1707) acquired and decorated it in his Peacock Throne and shifted to Lahore. In 1739 Nadir Shah defeated Mohammed Shah and took Kohinoor diamond to Persia.

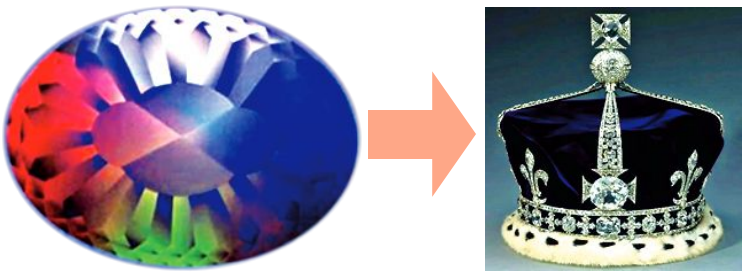


Fig-10: Kohinoor in original form when it was in India before its several cuts and recuts and insertion into the crown of British Queens

Kollur became Kohinoor

The original name of Kohinoor diamond was Kollur as it was found near Kollur village in the placer gravels at the bank of Krishna River. In 1739, when the person while handing over that diamond to Nadir Shah, told him that its name was Kollur. Charmed by its beauty, Shah touched it with great pride reported to have said *"Nahi…Ye..Kollur nahi hai. Yeh… KOHINOOR.. Hai"* (No. it is not Kollur…it is Kohinoor which means mountain of lights). Thus, Nadir Shah is credited with having renamed it Kohinoor and made it world famous popular name.

In 1747, he was killed while sleeping and Kohinoor was taken away by Ahmed Shah of Afghanistan. In 1830, Shah Shuja-ul-Mulk acquired it. Sikh King of Punjab Ranjit Singh of Lahore who was known as Tiger of Punjab captured, tortured, blinded him and grabbed that diamond and kept with him for years. In 1839 when fell sick, he decreed in his Death Will declaration to donate the Kohinoor to God Jagannath temple of Orissa. But after his death his deputies refused to obey his death wish and execute his will. Later, that diamond was inherited by Rajah Duleep Singh of Lahore, the last Indian owner of the gem. In 1849, British East India company occupied Lahore and proclaimed that area as part of British Empire of India. Lord Dalhousie, the Governor General arranged to shift the diamond to

London. On 3rd July, 1850 it was handed over by Sir J.W. Hogg, Deputy Chairman of Britisher's East India Company to Queen Victoria at Buckingham Palace, London.

Original weight of Kohinoor as per initial reports was 793 carats. But it was cut and recut several times. Tavernier, the jeweller from Paris reported to have seen it during Mogul king Aurangazeb. He described it as a magnificent diamond, sketched and wrote in his book on Six Travels to India that, it was recut several times reducing it to 186 carats during Mogul rule. That cut was known as the "Oriental Indian style Multifaceted Rosette". After it was taken away to London, once again it was recut and reduced to 108.93 carats by Mr. Voorzanger and Mr. Fedder of Amsterdam. But in 1992 the new HM office publication on the British Crown jewels and Regalia gave revised weight as 105.602 carats (21.12 grams) measuring 36 x 31.9 x13.04 mm in size.

Shah Shujah King who once saw Kohinoor was mesmerized and estimated its cost in the most uncommon, exaggerated way. He reportedly, said that "If strong man should take five stones and cast each one east, west, north, south and one straight up in the air and filled up that space with gold coins that would be the cost of Kohinoor". However, in 1992 Britisher valuers estimated it value as £ 100,000. Now it is priceless as it is not meant for sale.

Now Kohinoor is part of the Crown jewels and personal property of British Royal family. It is kept on display at the Jewel House, at the Tower of London with high security not allowing even photography of the stone. A visitor has to buy an entry ticket to visit the Tower of London to look at the Kohinoor.



Fig-11: Kohinoor diamond was discovered at Krishna River meander near village Kollur which was one of the largest mines in South India.

Claims and Counter Claims

In 1947, the State government of Orissa claimed that the Kohinoor belonged to the Puri Jagannath as its real owner King Ranjit Singh gifted it as per his legal Death Will. In 1953 government of India tried to get Kohinoor back to India. Kartar Singh Garib, president of Guru Gobind Singh Sevak Jatha requested UK prime minister Tony Blair to return back Kohinoor. Tushar Gandhi Head of the "Mahatma Gandhi Foundation" requested government of India to demand Britain to return Kohinoor to India. In 1976 Prime Minister of Pakistan Zulfikar Ali Bhutto requested British Prime Minister James Callaghan to give Kohinoor as it was finally taken away to London from Lahore which is now part of his country. Some persons argued that the way the original Indian land was divided as India and Pakistan, logically the Kohinoor has to be cut into pieces proportionately and gifted to both countries. A News Paper in Tehran claimed that it belongs to Iran legally and has to be returned back to that country. The great grandson of Lord Dalhousie who transported it to London claimed that the gem belonged to his family and they are the real owners.

But in spite of all claims and counterclaims the British Government said emphatic "NO". Thus, Kohinoor Diamond did not and might not come back to India. It is still in the Tower of London and there is not much of hope to get it back to India. But there is scope to discover another Kohinoor or larger than Kohinoor diamond from Andhra Pradesh from Krishna River valley and probably from the Kollur mine.



Fig-12: Present status of Kohinoor in Tower of London in the crown of jewels

Historical Slips and Hiccups

Correct identification of problems is half the way solving it. When India got independence, the then government followed many socialistic policies keeping the diamond exploration and mining industry totally under government control sidestepping people's participation away. State owned National Mineral Development Corporation, (NMDC) was involved in diamond exploration,

mining, production and marketing in the country. But NMDC concentrated its efforts, men, money, materials and machinery mainly on mining and bulk selling of iron ore than exerting more efforts on difficult diamond exploration, extraction and production in the country. No exclusive organization for diamonds exploration and mining formed in the government the way for coal as Coal India, BGML for gold, HCL for copper and HZL for zinc.

In 1994, the government of India came up with liberalization of mining policies including for diamonds. Reconnaissance exploration-search permits were given to several multinational companies like De Beers, Rio Tinto, BHP and others. But as no diamond mining leases were granted, all international diamond companies left India. Rio Tinto has to leave India without diamond mining even after discovering several diamond-bearing kimberlites. No mining rights and no mining permits were granted to them for diamond production.

Now, the government of India came up with another wrong policy of not permitting anybody to select any diamond bearing area based on their own search and research findings. As per the new policy the government itself selects some areas calling as blocks with specific boundaries and auction them to public. This new system led to dissatisfaction among Indian investors and people. No new economically viable diamond mine area came up after this mistaken policy implementation. Thus, ultimately though India became an independent country 77 years ago not even one regular new diamond mine and production center could be commissioned in Andhra Pradesh or Telangana or any other place in South India. It is found that there is scope to discover more economically viable diamond bearing areas as the area has favorable geological set up.

Now there is a ministry and a separate department with ample budget allotment for coal in India to look after all aspects of it. Likewise, there is a ministry for oil and gas for carrying out exploration and production. There is an organization to organize iron and steel production. But there is no single exclusive, responsible and accountable department for diamonds till now in India that could look after all activities right from exploration, mining and production of diamonds in the country. There is need to create one such exclusive organization for diamonds.

Though the glorious diamond mining and production industry of India died long back, the diamond cutting and polishing industry which was entirely under public domain with the people's participation survived through centuries. Now most of the raw diamonds mined in other countries in the world reach India for cutting and polishing. This fact itself speaks volumes about the versatile nature, capacity and capability of the people of India. If ample freedom is given to the people to explore, mine and produce diamonds there is scope to revive the ancient glory of diamonds

production in South India. In that process there is every possibility to discover many more large diamonds like Kohinoor as there is a favorable and suitable geological setup.

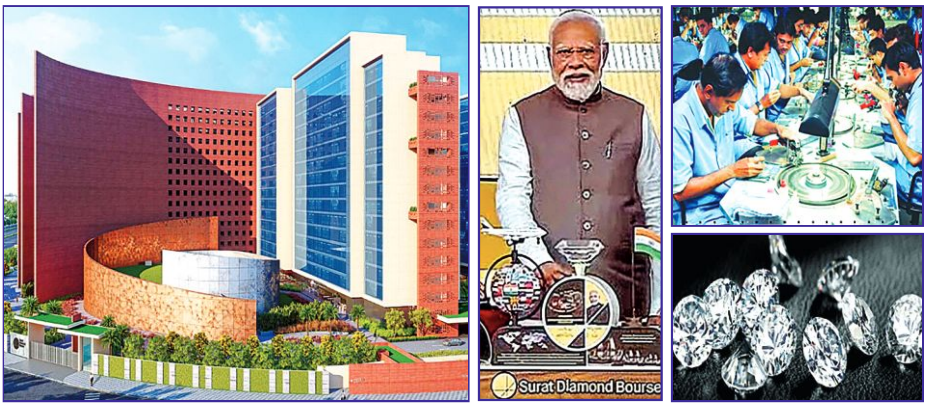


Fig-13: Surat in Gujarat state emerged as the famous cutting and polishing center handling most of diamonds mined in the world.

Kohinoor Homeland Spirit

In India, Andhra Pradesh and Telangana states have the largest number of kimberlites, the primary mother rocks of diamonds. Right from Wajrakarur area of Anantapur district in Andhra to Mehabub-nagar districts in Telangana, many kimberlites have been discovered. Diamonds bearing conglomerate beds of secondary sedimentary source rocks were found around Banaganapalle and other areas in Kurnool district, of Andhra Pradesh. Extensive diamonds bearing alluvial and colluvial placers were present in various parts of Krishna River Gravel horizons. Wide-spread earlier mines and old workings in all these three types of deposits right from kimberlites, conglomerates and placer deposits, stand as testimony to the potentialities of the state. Tirupati's Venkateshwara, Tiruvanantapuram's Padmanabhaswamy and many other temples in South India acquired several diamonds studded gold crowns and jewellery which also stand as visual evidences to the rich ancient heritage of diamond production in South India.

When the Geological Survey of India, the National Mineral Development Corporation were carrying out investigations, several diamonds were recovered at the exploration stage itself. Now there is a need to reorient exploration strategies in Andhra and Telangana states using modern and state-of-the-art technology methods to identify the economically viable deposit to start the first diamond mine in South India. It is very easy and convenient for any explorer to declare an area, as

not economically viable and walk out. But by better understanding the geological set up using the latest modern methods and techniques there are several instances in the world to bring an abandoned prospect to a workable mine. To achieve this objective, a dedicated team with the right persons with right guidance and background with the latest technological back up is necessary. By adopting latest "zero waste technology of mining and processing" making every commodity mined from an area useful to make the project economically viable. In addition to the technological advantages, economic extractability and viability there is need for political and government encouragement and back up to start the first diamond mine.

As indicated above the diamond mining industry can be revived as it was closed due to political reasons. Even now after monsoon rains a few diamonds are being recovered unofficially by locals from several places in Andhra Pradesh from Wajra-karur, Jonnagiri-Pagada Rayi and Paritala areas of Penna-Krishna River valley.

With the rich heritage and vibrant spirit of being the birthplace and homeland of the world-famous Kohinoor diamond, Andhra Pradesh holds immense potential for the revival of its erstwhile diamond mining industry in the near future. The enthusiasm and vigor of its people further fuel this promising prospect.



Fig-14: Diamonds studded crowns and jewelry found now South Indian temples testify rich ancient heritage and production

Rebirth Scope and Hope

Reviving diamond mining in Andhra Pradesh could be a promising venture, given its historical significance and potential resources. Some steps could help make Andhra Pradesh once again a prime diamond-producing state. The first step is to conduct comprehensive geological surveys to identify potential and economically

viable diamond-bearing areas. The Krishna, Pennar and Godavari River basins, factually known for diamond deposits, should be primary targets. The Geological Survey of India and State department of Mines and Geology and experts from other organizations have to obtain and leverage their expertise to locate workable diamond mine.

The government has to implement support policies and incentives for mining companies to invest in diamond exploration and extraction. The process of obtaining exploration and mining licenses need to be streamlined. Government has to encourage public-private partnerships to share the risks and benefits. This could bring advanced international exploration and mining technologies. Support of local communities affected by mining activities by proper rehabilitation and minimize ecological impact. Skill development training programs of workforce for diamond exploration and mining industry is necessary. This could create employment opportunities for local communities which can boost the regional economy. Andhra Pradesh diamond heritage known in the past as Golconda Diamond mart could be regained through effective marketing strategies. Highlighting the historic significance and purity as a brand identify could be established as Andhra-Golconda Diamonds. By focusing on these areas, Andhra Pradesh can potentially revive its diamond mining industry and become a significant player in the global diamond market once again.

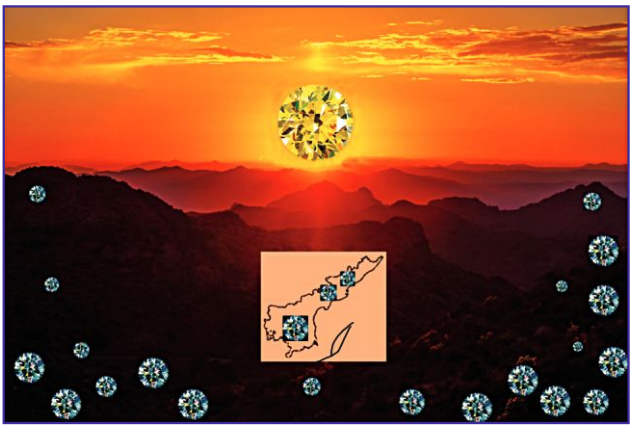


Fig-15: Realizing present setup and reorganizing future strategies there is ample scope for Andhra Pradesh and India to regain the past glory of diamonds production existed prior to 16th century

Further Readings

Babu T.M. (1996). State of Technology tools for integrated multidisciplinary exploration of gold and diamond Resources in India. International Workshop on Strategy, Tools and Laboratory Facilities for Diamond and gold exploration, Bhubaneswar. p.92.

Babu T.M. (1998) Diamonds in India. Geological Society of India, Gavipuram, Bangalore. 332 pages.

Babu T.M. (2015) Glorious Indian Diamonds, 418 pages DK Print world, New Delhi

Babu T.M. (2024) Another Kohinoor Diamond discovery in India. Mining Engineers' Journal, Hyderabad. vol.25, No.2 p.13 to 21.

Ball, V (1925) Travels in India by Jean Baptiste Tavernier. Baron of Aubonne (translated from French) ed. William Croke, London. Humphrey Milford. 2 vols.

Chaper M (1886) A diamondiferous Pegmatite. In Hindusthan Bulletin de la Societe Geologique de France. Cited by R.B. Foote (1889) Geol. Surv. India. Rec. XXII: 39-49

Dutt, N.V.B.S (1953) "Ancient Diamond Mining in AP and its Future". Indian Minerals VII (3/7): 138-50.

Dutt, N.V.B.S (1986) Geology and Mineral Resources of Andhra Pradesh and Late Proterozoic Tectonic Evolution of Peninsular India. Hyderabad: National Resources Development. Co-operative Society.

Francis, W. (1905) Gazetteer of the Anantapur District. Madras District Gazetteers. Printed by Addisson & co. Madras. 215 pages

Howard Henry (Earl Marshall of England) 1677, A description of the diamond Mines as it was presented to the Royal Society of London, Phil. Trans.II, Jour. Hyderabad Geol. Surv.907-17.

Kautilya (3rd century BC) Arthasastra (tr. R. Sharma Sastry, 1967) Mysore, Mysore Printing and Publishing House.

King W (1872) On the Cuddapah and Kurnool Formations in the Madras Presidency. Mem. Geol. Surv. India. Vol.XVIII. p105.

Krishnan, M.S (1951) Diamonds Chapter XVI Mineral Resources of Madras. Geol. Surv. India. Mem.80:99-105.

Krishnan, M.S. (1971) The Distribution of Diamond Deposits in India. Geol.Suv. Ind. Misc. Pub. 19 (Diamond): 1-6.

Ministry of Mines (1996) Foreign Investment Potential in India. The Mining Sector. Govt. of India publication. 14 p.

Murthy, S.R.N (1980). Diamond Occurrences in Ancient India. Jour. Geo. Soc. India 21(5):208-10.

Narasimham, G.V.N (2021) Pingali Venkayya (Architect of the Indian Tri-colour) (Grandson of Venkayya). Macherla-522426. Guntur District, Andhra Pradesh. p.222

Pingali Parasuramaiah (1984) The Diamond Lore, Swatantra Art Printers, Vijayawada. p.55,

Raman C.V (1968) Diamonds of Krishna valley, Current. Science. V.37 (19), pp541-542.

Tavernier, De Jean Baptiste (1676) Les six voyages De Jean Baptiste Tavernier, Ecuyer Baron D' Aubonee, Quil. A En Turquie, E. Collections of travels through Turkey into Persia and the East Indieces etc., 2 vols. London. tr. V. Vall (1925)

Varahamihira (1959) Brihat Samhita (Chowkhambha Series 4), Banaras.

Venkaiah, P. (1946) World's Unknown Parent Rock of Diamond. Krishi Magazine, Vijayawada, Special volume.

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