80-5

M.R.O. 1—20,002—12-8-65.

(1) Number of Pages 10

(2) Date of repair 29-11-1965

(3) Initials of the Referencer

MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Rev DEPARTMENT

G.O. No.	80	Press
B.P. No.		Mis.
Dated	15-1-1873	196 .

Not to be folded or roughly handled

No. 3. Read the following letter from the Resident in Travancore and Cochin, to the Chief Secretary to Government, Fort St. George, dated Trevandrum, 26th July 1872, No. 85.

I have the honour to send copy of a letter* to my address from the Diwan of Travancore, requesting information with regard to the mining and exportation of plumbago in Ceylon, and the manner in which the Ceylon Government derive revenue from transactions connected with the mineral. I hope the Madras Government may be pleased to procure the information desired from the Ceylon Government.

* No. 2863, dated 22nd instant.

2. I may observe that the question of developing a trade in plumbago in Travancore is not a new one. It has on several occasions attracted attention, as will be seen by reference to the papers noted and others. Opinions seem to have differed considerably as to the value of specimens of the mineral sent from Travancore for exhibition or examination. There seems no doubt, however, that a good quality does exist. I believe the practical question turns on whether the deposits of good quality can be found in sufficient quantity at their different sites to make the working really remunerative. Improved inland communications and [illegible]orts adjacent to the tracts in which the mineral [illegible]d are circumstan- favourable to the development of a trade.

Extract Minutes of Consultation, No. 289, dated 3rd March 1855, with Memorandum by Dr. Royle on the plumbago of Travancore, dated 20th November 1854.
Report from General Cullen, Resident in Travancore, to the Madras Government, dated 9th February 1857, No. 13.
Do. do. 16th July 1857, No. 40.
Do. do. 17th ,, ,,
Do. do. 24th Nov. ,, No 65.

3. None exists at present, notwithstanding the attention that the matter has attracted heretofore; but it seems well worthy of further and careful investigation.

From the Diwan of Travancore, to the Resident in Travancore and Cochin, dated Trevandrum, 22nd July 1872, No. 2863-R 862.

Mr. S. V. Morgan, of the Patent Crucible Company, Battersea Works, London, has lately made inquiries in regard to Travancore plumbago, which is believed to exist in the District of Nedoovengaud, and at my request Mr. Barton has kindly promised to visit the locality and give me his opinion as to the feasibility of creating a trade in the mineral, which seems to be in considerable demand in Europe.

2. Mr. Morgan tells me that the Company of which he is a member exports from Ceylon about £100,000 worth of plumbago annually, that the mining is very simple and conducted entirely by the natives, who find it to be one of their most profitable pursuits, while the Government derive considerable revenue from royalties, &c. I understand also that reports have been published giving a complete history of the development of this industry in that island. I shall be much obliged to you if you could kindly procure for me a copy of such reports. Any information which the Ceylon Government can furnish in regard to the process of mining and preparing the plumbago for the market, the implements and machinery used, the cost of getting up and returns from a given quantity of the mineral, the terms on which land is granted, the nature and extent of the revenue derived by Government will also be thankfully accepted. Should Mr. Barton's report be encouraging, and this Government resolve to mine for plumbago, I should further be glad to know if the Government of Ceylon would be able to aid us in procuring the necessary machinery, and whether a small party of miners would be disposed to come over and work in Travancore, and on what term[illegible]

Proceedings of the Madras Government, Political Department,

2nd August 1872.

No. 4. To the Honorable the Colonial Secretary, Colombo, dated Ootacamund, 2nd August 1872, No. 298.

I am directed to forward, for the information of His Excellency the Governor of Ceylon, copy of a letter received from the Resident in Travancore, enclosing a communication from the Diwan of Travancore, in which information is solicited on the subject of plumbago mining operations in Ceylon.

2. I am to request that, with the permission of His Excellency the Governor, the information required by the Diwan may be obtained and forwarded to this Government for communication to the Travancore Government.

(Signed) R. S. ELLIS,
Chief Secretary.

Proceedings of the Madras Government, Political Department,
2nd August 1872.

No. 4. To the Honorable the Colonial Secretary, Colombo, dated Ootacamund, 2nd August 1872, No. 298.

I am directed to forward, for the information of His Excellency the Governor of Ceylon, copy of a letter received from the Resident in Travancore, enclosing a communication from the Diwan of Travancore, in which information is solicited on the subject of plumbago mining operations in Ceylon.

2. I am to request that, with the permission of His Excellency the Governor, the information required by the Diwan may be obtained and forwarded to this Government for communication to the Travancore Government.

(Signed) R. S. ELLIS,
Chief Secretary.

Govt. of Madras.

POLITICAL.

To

THE HON'BLE THE COLONIAL SECRETARY, COLOMBO.

Dated August, 2nd.

Read.

Encl.

G. O., 2nd August 1872, *No.* 298.

AUGUST.
Nos. 3-4.

Forwarding copy of a letter from the Resident in Travancore, enclosing a communication from the Diwan of that State, in which information is solicited on the subject of plumbago mining operations in Ceylon.

87/3

Proceedings of the Madras Government, Political Department,
30th December 1872.

No. 37. Read the following letter from the Colonial Secretary, Colombo, to the Chief Secretary to Government, Fort St. George, dated Colombo, 4th December 1872, No. 74 :—

With reference to your letter, No. 298, of the 2nd August last, applying for information on the subject of plumbago mining operations in Ceylon; I am directed by the Governor to transmit, for the information of His Excellency the Governor of Madras in Council, the enclosed copy of a report by the Government Agent for the Western Province of this Island.

From the Government Agent for the Western Province, Colombo, to the Honourable the Colonial Secretary, Colombo, dated Colombo, 13th November 1872, No. 781.

With reference to your letter, No. 413, of the 30th August last, I have the honour to report that the plumbago exported from this province is principally produced in the Pasdun and Raygam Korales ; although it is also found in the adjoining Korales of the Saffragam District, and in the Srigane, Kewagam, and Hassitigam Korales, of fair quality, though not in equal abundance.

The annual yield of the mines in the Pasdun Korale is probably 4300 tons, and that of the other Korales 2120 tons, and the quantity exported from the Island from the Western, North-Western, and Southern Provinces, according to the last Customs Return, was 6263 tons.

When dug on Crown Land on leases, as usual, not extending beyond twelve months, or on private lands purchased from the Crown, with a reservation of the right of the Crown to the minerals they contain, the plumbago is subject to a Royalty of one-tenth the produce commuted at £1

Although met with in nearly all kinds of soil, but principally [illegible]ay, plumbago is not unfrequently found embedded in rock, and I have specimens taken from limestone quartz and gneiss. Natives, however, seldom put themselves to the expense and trouble of blasting, and adopt no scientific means for discovering its existence in any locality. A very superficial observation or accident generally induces an application for permission to open a pit, and the search results as often in disappointment as in success.

There are about 347 diggings in full operation at the present moment in the Western Province, 238 of which are carried on on public property.

I annex letters from the Mudaliyars of Raygam Korale and Kalutara, describing the *modus operandi ;* and regret, from all I can learn, that there is no disposition on the part of miners to proceed to Travancore and work there on any terms.

Memorandum referred to in the Raygam Korale Mudaliyar's letter, No. 322, *of the* 2*nd November* 1872.

The process of mining and preparing Plumbago for the market.—A spot for digging is found out by the appearances which the surface of the ground presents, these appearances being usually small pieces of plumbago discovered in the surface soil amongst the gravel, or the rocks and stones being here and there stained with the colour of the mineral. There are also other appearances in the ground which the practised eye of the digger recognises as indicative of the existence of the mineral. When he is satisfied by these marks he sets about digging, for which he employs coolies. The veins which he first meets with are called *gol illang* or *rock veins*, and *kola illang* or *leaf veins*. The former class consists of very small, thin streaks or veins embedded in hard rock. These veins at first are not continuous, frequent breaks of several feet being found at intervals. The veins become larger as they go deeper into the ground. The mineral is extracted from these *gol illang* by breaking up the rock or stones in which it is embedded by means of hammers and crow-bars. This kind of plumbago is of inferior quality, being generally harder, and is mixed with iron

quartz and other extraneous ingredients. The other *kola illang* is also found on the surface, but, unlike the former, consists of plumbago which is soft and loose, and is found in detached pieces in loose sand or clay instead of being encrusted with a thick layer of hard rock. Both these kinds of veins are sometimes found in the same mine; but *kola illang* is generally found in *owitas* or other kinds of clay or sandy soils. The plumbago obtained from these two kinds of veins, when properly washed and cleaned, becomes what is called the "plumbago dust" of commerce. Sometimes entire mines contain nothing but this kind of dust.

By digging deeper and deeper the digger comes to the more substantial veins, if the mine happens to be a good one, and it is then that he obtains the principal portion of his plumbago. The deeper the pit is sunk, the better in quality and greater in quantity is the mineral. The size of the veins varies from half aninch to three or four feet in circumference, that of an ordinary one being generally about one foot. But at the *joints*, that is, at the points from which two or more veins branch out from a common one, the size is much larger than elsewhere. At this stage of digging the most expensive part of the process is pumping out the water which oozes out in the pit. This is done by means of a rude crane and buckets, and sometimes (but that is very rarely) by means of a regular pumping-machine. In this work much labour and time are spent. In most mines the digging and the pumping out water go on at the same time during all day, and at the close of the evening the work is stopped to be resumed next morning. But in large mines, in which the same process goes on in the daytime, the night is wholly devoted to the pump. The buckets for drawing out the water are each about 2½ or 3 gallons in capacity, while the *rattan* basket used for raising up the excavated earth or the plumbago will hold about half a cwt. of plumbago.

After the plumbago is taken out of the pit it is washed in a sort of sieve like a basket, and any impurities or other extraneous matter adhering to it are scraped off by means of small knives. It is then sto[illegible] but erected for the purpose on the spot, from which it is again removed only by the [illegible] it from the digger. If the mine happens to be in a [illegible] which carts or [illegible] ssible, the digger must transport the mineral to some p[illegible] convenient to the purchaser. Coolies are then employed to convey it to the desired spot in *pingos*, each *pingo* consisting generally of 1 cwt. A cooly is paid for this work at the rate of 6¼ Cents per mile. No other preparations of the mineral for the market is made by the digger himself. Such further preparation is made by the purchaser after removing to his own neighbourhood or to Colombo, where he sorts the mineral into three classes of "*lumps*," "*chips*," and "*dust*," and these being put in casks, about 5 cwts. in each, are then sold to some Colombo merchant, or are sent directly to Europe for sale.

The coolies employed in plumbago mining are principally, or nearly, all Sinhalese. Each of them receives three meals and from 25 Cents to 50 Cents per day from the employer.

Pumping the mine at night is paid for at the rate of Rupee 1 to Rupees 1-50 each for one night, but he must find his own food.

Next to the difficulty of draining the mine of the water which unceasingly accumulates in it, is that of digging through ground consisting mostly of hard granite rock-veins often seen between these rocks, and are so closely jammed in by them that no digging can be performed without blasting the rocks. The risk, expense, and delay incurred by this are sometimes so great that diggers, soon after spending 300 or 400 Rupees, often give up the work in despair.

Between 400 and 500 of the inhabitants of my district are employed as coolies in plumbago mines, principally in Pasdun Korale, Kukulu Korale, and Kewagam Korale. Each of the mines give employment to from 12 to 100 or 150 coolies. Nambessana, Urugala, Kigiriya, Ratmalagda, Remnore, Batagode, Kehelpenawa, Wagawatte, Uduwara, and Patakude are the principal villages in my district which supply these coolies.

2. *Implements and Machinery used.*—1, Mammooties; 2, Crowbars; 3, Pickaxes; 4, Hammers; 5, Wooden buckets; 6, Cane baskets; 7, Crane; 8, Pumps (sometimes); 9, Knives; 10, Instruments for boring rocks; 11 *Watte* baskets.

Of these, the mammooty is, of course, used for digging; the crowbar and pickaxe as much for breaking up the ground as for digging up the plumbago; the hammer for breaking *gol illang*;

Proceedings of the Madras Government, Political Department,
30th December 1872.

buckets for drawing up water; baskets for holding plumbago and earth which are to be raised from the pit; crane for removing both these; the knife for cleaning the lumps of plumbago; and *watte* baskets for washing the plumbago.

For a mine worked by fifty coolies the following quantity of implements will be required:—

10 Mammooties, at 50 Cents to 62½ Cents each.
10 Crowbars, at Rupees 1½ to 2 each.
2 Pickaxes, at 75 Cents to Rupee 1 each.
5 Hammers (of which one is a sledge hammer), Rupees 15.
2 to 12 Buckets, at 75 Cents to Rupee 1-25 each.
30 to 40 Cane Baskets, at Cents 12½ to 25 each.
2 Cranes.
5 or 6 Knives, at Cents 4 to 8 each.
4 boring Instruments, at Rupees 1½ to 3 each.
5 or 6 *watte* Baskets, at Cents 12½ to 25 each.

There is, however, one remarkable peculiarity in plumbago veins, which I have never heard of as characterizing any other mineral veins. It is that all plumbago veins, both in this district and in the adjoining Korales, seen from north to south or *vice versa* or nearly so, but never from east to west or from west to east. Whenever a vein happens to take the latter direction, it will be found to be near the surface of the ground, and if searched for deeper will be found to have come to an end, or if not to revert to the other direction, viz., from north to south. I do not know whether this is also the case in other districts in the island, but if it be, the cause must be sought for in some geological mystery as yet unexplained by any one.

No plumbago mine, in my district at least, has been worked to a greater depth than seventy-eight or eighty feet, both because of the increase of water at t[illegible] and especially because of [illegible] of the [illegible] under the fallen mass of earth. An accident of this kind happened in Pasdun Korale about three years ago, and killed, I believe, two men.

3. *Cost of getting up and returns from a given quantity of the Mineral.*—It is extremely difficult to make even an approximate estimate of the cost of getting up a given quantity of the mineral, because such costs depend on the nature of the ground in which the mine is to be sunk, and on the quantity of the mineral which it might contain within the reach of the digger—two facts on which the intending digger can never be certain beforehand. And even if on the first point considerable knowledge be gained at the outset, on the second no one can prophesy with any certainty until the digger actually works the mine and meets with a good vein. Nor can I in any degree state the amount of the returns which a particular quantity of the mineral is likely to make to the digger; for the same reason I may, however, state that there have been diggers who had spent some Rupees 400 without any return at all, and others who by spending the same amount have been gainers by more than Rupees 4,000.

4 and 5. *Whether a small party of miners could be disposed to go over and work in Travancore, if so, on what terms?*—It has not yet come to my knowledge that any one of the inhabitants of my district is willing to go to Travancore and to work there on any terms.

From A. GUNAWARDUE MUDALLY, to the Government Agent, Colombo, dated Kalutara, 7th October 1872, No. 568.

With reference to your circular letter of the 16th ultimo, requesting information on several points in connexion with the process of mining and preparing plumbago, I have the honour to state for your information—

1*st*.—The intended digger for the ore selects a suitable land for the purpose of the plumbago region, which his experience enables him to do by a careful examination of the soil, which presents, on the surface of plumbago lands, either grains of the mineral itself, or gravel, or other

substances tinged with the colour thereof. When he is satisfied that the land contains what he is in search of, he begins by digging first a pit to a depth of three or four feet by three or four yards square, and when encouraged further by the discovery of smoky orifices or traces (called illans) which are to be found in plumbago lands, and which lead the miner either perpendicularly or laterally to the bulk of the treasure, he extends his operations in earnest till he reaches and secures it. The ore thus secured is stored in temporary sheds put up for its reception near the quarry, when it is purified by scraping off the dust and rust and then washed and dried before it is taken to the market in casks by means of carts or pada boats.

2. The mammooties, pickaxes, crowbars, spades, baskets, buckets, small knives, and pumps are the implements generally used by the miners, and timber materials when the said illans or smoky traces are extended laterally, in order to protect the subterraneous passage and the miner from the dangers of landslips.

3. A ton of plumbago from a moderately rich mine costs the digger some 30 or 40 Rupees, and this quantity, when sold at Rupees 120, gives him a profit of Rupees 75 or Rupees 80.

4 and 5. Though due publicity was given to the invitation, I could find no miner who is disposed to go over and work at Travancore on any terms.

No. 38. ORDER THEREON, 30th December 1872, No. 460.

Communicated to the Resident in Travancore and Cochin, with reference to his letter dated the 26th July 1872, No. 85; also to the Revenue Department for communication to the Board of Revenue.

Chief Secretary.

To the Resident in Travancore and Cochin.
,, Revenue Department, with copy of Proceedings
dated 2nd August 1872, No. 298.

Exd. J. Wright.

No. 87.

Govt. of ~~1872~~ Madras.

POLITICAL.

To

THE RESIDENT IN TRAVANCORE
AND COCHIN,
&c., &c., &c.

Dated December, 30th.

Recd. Jany. 13. Encl.

G. O., 30th December 1872, No. 460.

DECEMBER.
Nos. 37-38.

Communicating letter from the Colonial Secretary, Colombo, transmitting copy of a report by the Government Agent for the Western Province of Ceylon on the subject of plumbago mining operations in that Island.

No 80.

Comm. & Trade Dept Ceylon

R. 15/1

15 Jany 73.

19 Feb 1873 Ceylon Despatch