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CORRESPONDENCE

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REGARDING

GOLD MINES IN WYNAAD,

MALABAR DISTRICT.

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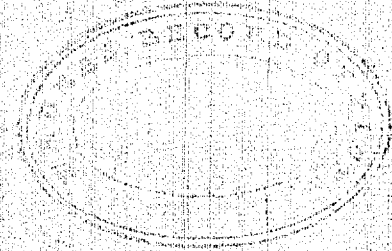
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CORRESPONDENCE

REGARDING

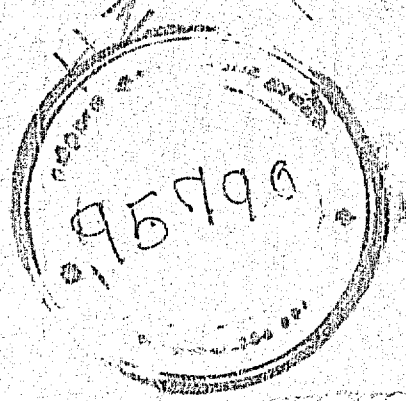


GOLD MINES IN WYNAAD,

MALABAR DISTRICT.

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1874.



47.11.58
CORRESPONDENCE

REGARDING

GOLD MINES IN WYNAAD, MALABAR DISTRICT.

In the Secretary to Government, Revenue Department, to the Principal Collector of Malabar, dated Fort Saint George, 4th January 1831, No. 8.

I am directed by the Right Honorable the Governor in Council to say that you will charge, in your accounts, the value of the gold dust received from time to time from your district to the Presidency, a part of which has already been, and the remainder will hereafter be, transmitted to the Honorable the Court of Directors.

You will be pleased to instruct Mr. Hudleston to collect as much of it as can be obtained, to be disposed of as may hereafter be directed.

The Right Honorable the Governor in Council will be happy to receive from you, or from Mr. Hudleston, a detailed account of the places and manner in which this dust is found and prepared for use, and a copy of such information as the records of your cutcherry for December 1831.

may contain respecting the endeavours made by the Collectors, since the province came into the possession of the Company, to develop the mines or places whence the gold issues.

W. SHEFFIELD, Esq., Principal Collector of Malabar, to the Secretary to Government, Revenue Department, Fort Saint George, dated Calicut, 10th January 1831.

I have the honor, with reference to your letter of the 4th instant, to

Places where the Gold Dust is found and the Quantity procured at each Place.	Weight in new Gold Fanams.	Rate at which the Gold Dust was purchased per 10 new Gold Fanams' weight.	Amount Value.
Locatodo in the Wynaad taluq.	2,501½	Rs. A. P. 5 0 0	Rs. A. P. 1,250 12 0
In the Nollamboor valley.	2,783½	4 12 0	1,300 14 8
Ceraloondy on the sea beach in the Wynaad taluq.	1,561½	4 7 3½	695 7 3
Moonaanaad, Moopayanaad, and Nambollocotta in Wynaad.	2,657½	4 8 3½	1,537 12 2
Gold fanams transmitted to weigh the gold dust with.	10		2 13 0
Total ...	11,459		5,297 11 5

acquaint you, for the information of the Right Honorable the Governor in Council, that I have already charged in my accounts the value of the gold dust procured in this district on account of Government, amounting, as per annexed memorandum,

to Rupees 5,287-11-5. Of this quantity by far the greatest portion has been forwarded to the Presidency, the remainder being 2,908½. New gold fanams' weight, valued at Rupees 1,326-6-2, will be delivered over by me to Mr. Huddleston, who has been instructed to collect as much more gold dust for the use of Government as can be obtained.

I beg, however, to state that, in consequence of an increased demand for this valuable commodity, owing to a greater number of persons resorting to this province from the eastern districts of Coimbatore, Madurai, Trichinopoly to purchase it, the price has risen, in the average, 5½ cent., or from Rupees 4-2-40 to 4-3-35 for 10 new gold fanams' weight.

Though gold is found in all the rivers of this district, from the sea which falls into the sea at Elatoor, about eight miles north of Calicut, as far south as the numerous streams flowing through the Palghat valley, at their junction, about 15 miles below Palghaticherry, form the Ponnay river, some of which reach the southern boundary between Andaman and Malabar, about 110 miles to the southward of Calicut, the principal streams which afford the largest supply of gold dust are the following.

The Toodakull river, which rises in the Koondah mountains, dividing the Wolloowanaad taluq from the taluq of Neringanaad, falls into the great Ponnay river at Mochickul, about two miles north-east of Trichinopoly.

The Arliparambur, a rivulet which flows through Wolloowanaad and Neringanaad, and joins the Toodakull river about two miles below Cherpoocherry.

The Arnakym river, which has its source in the Moorkoorty and Iru mountains, and forming the boundary between the Ernaad and Wolloowanaad taluqs, and passing the towns of Malapooram and Teeroorangady, falls into the sea at Caraloondy.

The Carantode stream which rises in the Moorkoorty valley and joins the Arnakym river near Pynaad in the Ernaad taluq.

The gold found at the places above mentioned is the purest procurable in the district, its touch being equal to 9½.

The sea beach from the town of Parparangady to Caraloondy, and to Beypoor, extending about eight miles in length, the latter place being seven miles south of Calicut. Here the gold is equal to 8½, and it is everywhere washed down from the mountains during the great freshes in the south monsoon; and, after being carried out by the flood beyond the mouth of the Beypoor and Caraloondy rivers, it is thrown back by the action of the wind when the sea runs high and is much agitated by tempestuous winds. It is deposited on the sands much higher up than the sea usually reaches, and when the weather is moderate.

Kutchambara on the bank of the Coodarapoya river, which comes from the Moorkoorty valley and unites with the Beypoor river about two miles below Nellamboor. The touch of the gold found here and in the bed of the Coodarapoya river is nearly 9½.

The Carumpoya and Poonapoya, or golden river, both which streams take their rise in a high range of mountains called the "Paral Mal" situated north-east of Moorkoorty, and forming part of the main chain of the Neilgherries; and, when collected in one body near Pooliempa

Wynaad, the stream receives the name of the "Paundypoya;" but this, on its approach near the ghauts, is again divided into two streams, and the main branch, called in the Nellamboor valley the Carumbye, rushes down the Alliampulli Cherram. The Poonapoya descends the mountains between Alliampulli and the Caracoar Cherram; and long before its junction with the Carumbye it receives both the Kellakumpoya and Caracoarpoya.

The Kellakumpoya and Caracoarpoya above mentioned: the former rushes down from Wynaad into the Nellamboor valley through the Andaloor Cherram, and the latter descends from Davala to the right of the road through the Caracoar pass.

Gold dust is also found on the plains in the Nellamboor valley, and particularly on elevated spots, particularly at Teeroowally, a hill near Atangady, about 150 feet above the level of the Beypoor river, during the greatest freshes; and on the slope of this eminence gold is procured from below the surface of the ground in pits dug by those who come in search of it.

Along the Beypoor river it is found in the Teeroowambaddy division of the district in a mountain stream, which, descending the ghauts to the left of the road through the Tamborcherry pass, runs through the Tamborcherry and Beypoor districts and forms a junction with the great Beypoor river between Shirwaddee and opposite to Mapooram in the Ernaad taluq. The touch of the gold found here, and of that which is generally procured in the Nellamboor valley, is about 8½.

Above the ghauts, in Wynaad, gold is found in Parkmeetil, a higher range of mountains between Manantoddy and Namballacotta, at a place called Choolmoosanaad, and at Nellyalam and Ponnay in Moopaynaad. It is like the gold found at Davala and its immediate vicinity in Namballacotta, but the Wynaad is much inferior to that which is washed down from the mountains actually appertaining to the Neilgherries and Khondahs, its touch being only 7½.

The manner in which gold dust is found and separated from the soil is as follows. The earth or sand in the mountains, hills, paddyfields, and beds of the rivulets known to be impregnated with this valuable ore is dug up, and it is only in or near water, and consequently in running streams, rills, and breaks in the mountains and ground into which the course of the water is most likely to drive the ore during the rainy season that gold is dug for, and being put into a patty, a kind of wooden tray hollowed in the centre and not unlike a turtle's shell, the soil is immediately submerged in water just enough to overflow it, and no more, and kept in an undulating motion by the washer with one hand, while the earth is stirred up with the other until all the earthy particles are washed entirely out of it, and a sediment is left in the hollow, consisting chiefly of a mixture of black sand and particles of iron and gold. The patty is then taken out of the water, and one end of it being somewhat elevated, water is gently poured upon its contents until the gold distinctly appears on the border quite divided from the principal mass. The golden particles are separated with a grain or two of quicksilver which is rubbed into them, and then put in a piece of tobacco leaf, which being placed in a crucible, or

more generally between two pieces of lighted charcoal, the heat causes quicksilver to evaporate, and the gold is then taken out in a pure state.

When gold dust is found in streams, a wooden trough, about 4 feet long and 15 inches wide, is frequently used, and into this the sand soil from the bed of the river or rivulet is thrown as fast as it is taken out, and then washed by the person in charge of the trough, who is constantly stirring the sand with his right hand and pouring a gentle stream of water upon it with his left, until nothing remains but the heavy black sand, the particles of iron and gold; and when the dust appears on its borders, it is collected with a proportion of quicksilver and then separated in the manner before mentioned.

When gold is found in small pieces, which is often the case in the several branches of the Beypoor river flowing through the Neil valley before they all unite above Mambaatangady, there is no occasion for quicksilver or heat.

In the rainy season the parties are worked upon the mountain and other elevated spots; but these places, owing to the want of water to assist the operation, are abandoned at the end of the rains, and the parties are employed during the dry months in the beds of rivers and small streams.

The sands on the sea beach between Parparangady, Caracol, Beypoor are most productive during the months of June, July, August, and September, when the rivers, which fall into the sea at Beypoor and Poondy, are filled by the south-west monsoon; but gold is found here, in smaller quantities, throughout the year.

There appears no reason whatever to doubt that golden ore is found in the soil in the mountains and hills of Malabar, and even in small spots in the valleys of Nellamboor and Moorcoorty, and the immediate vicinity of Davala and the Koondah and Neilgherry mountains; whilst it is found in the beds of rivers and other mountain streams as far as brought down by the monsoon rains.

Though a very extensive search has been made among the records of the office, since I had the honor of receiving the commands of the Right Honorable the Governor, under date the 18th November 1828, to afford information on this subject, I regret to state that I have not succeeded in ascertaining that any endeavour whatsoever was made by the several Collectors of this province acceded to the possession of the Honorable Company, to discover the mines or places whence the gold issues. These, however, appear to have been noticed by the Honorable Mr. Duncan, late Governor of Bombay, who enjoined the authorities then in the province, in the year 1793, to collect and submit to him every information that could be obtained on the subject, but it does not appear upon record that any scientific person was deputed to explore the places where the dust is found, in order to trace the source from whence the supplies are derived, or that any particular inquiry on the subject was set on foot, though it has been well known, from the earliest period, that gold is produced in the province, and the collecting of it has been farmed out, in Wynaad and the Nellamboor valley, for the last 40 or 50 years.

Received in the Neilgherry Consultation
Vol 379, p 3730-75
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Major R. CREWE, Commanding Neilgherries, to the Chief Secretary to Government, Fort Saint George, dated Ootacamund, 7th January 1832.

Adverting to the Minutes of Consultation of the 15th February 1831, in relation connected with which I hope to be enabled hereafter to report on fully for the information of the Right Honorable the Governor in Council, I now do myself the honor of requesting you will be pleased to nit to that authority the accompanying copy of a letter from Lieutenant Nicolson, which is accompanied by three specimens of gold purchased by from persons habituated to search for it, and where it was collected, at places specified on the cards attached to each respectively. I do not any- discover that these Coopul gold mines, in the neighbourhood of Mam- ady, have been before specifically brought to notice; although, in Field's report of the 10th January 1831, gold, it appears, has been digging pits on the Teerowally Hill near Mambaatangady. They to be extensive, are far more eligibly situated, especially as to salu- ary, than any other places yet discovered where gold has been found, so that a prosecution of the search at these mines may be considered desirable. In such case, if approved of by the Right Honorable the Governor, I should be disposed in person to repair to that place, because Lieutenant Nicolson's present materials, means, and number of men for the execution of the work placed under his superintendence are limited, and with the aid of, and in communication with, the Collector of Malabar, it occurs to me that measures y be devised, whereby these mines would be worked under the present superintendence by the natives of the country with a fixed and more in benefit to themselves, proportioned to their successful exertions, and a more advantage to Government than at present results. I shall, however, respectfully await the receipt of instructions in this matter for my guidance. Permit me also to ask for orders as to the disposal of the small quantity of gold already collected by the Pioneers at these Coopul mines. In conclusion, I take the liberty of bringing to notice that the absence of reports or information in this branch, placed under my general authority, is attributable to Lieutenant Nicolson and the Swiss, Mr. Hugonin, having contracted fevers, soon after the commencement of operations in June in the vicinity of Davalacottah, which, until recently, rendered their recovery very doubtful, and incapacitated them from exertion of any description.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to Major R. CREWE, Commanding Neilgherries, dated Coopul Gold Mines, 3rd January 1832.

I have the honor to report, for the information of Government, that, having arrived at Carcatode on the 10th ultimo, we continued our researches for the most lucrative places for gold in that neighbourhood until the 24th, when it became evident, from the daily average of work, that it was not worth while remaining there, at any rate at this season. The place seems famed for gold in consequence of the superior touch of the small quantity found there, a circumstance which greatly affects the nominal value of the metal to be

found elsewhere, a great deal of which is sold by the natives as Ca gold. The nature of the work in that direction will be found in the reports I shall duly have the honor of forwarding.

I have now to add that, with the view of pursuing the search through the Nellamboor valley, we arrived at this place on the 26th ultimo, and not a little surprised at finding a regular set of mines worked by five hundred Moplays who (if their headmen can be believed) are obliged one barley-corn weight of gold per man to the zemindar per day, and a direct daily tax of about Rupees 20 is levied by him, without anything to Government. On our arrival the whole of the Moplay off; but, in consequence of my issuing proclamations that in continuing work they should meet with no molestation, a great number have returned to the mines. These works are very extensive. The shafts are from 10 to 50 feet deep, and the deeper they are the greater is the quantity of gold to be found, the only impediment to the work being the accumulation of water which they have no idea whatever of raising, assembling in great numbers with chatties. We could easily employ syphons for this purpose; but, as our work would be overlooked by the Moplays, they would not fail instantly to apply the syphon to all the mines in the neighbourhood to our great disadvantage hereafter. Therefore until we have a sufficient number of workmen, and are sufficiently strengthened by Pioneers or others to place guards over the miners, we cannot work to any great advantage.

It will at once appear evident that where five or six hundred men find worth their while to work with the miserable and slovenly apparatus they possess, and with which the very least each man can possibly find worth the weight of the third of a gold faam per day, which trifling day's work seldom happens (as the quantity found by one man daily varies from just mentioned to the weight of 10 gold faams, on which occasion mud is always taken from the deepest shafts), it will then, as above mentioned, appear evident that, were these mines systematically worked on the B. principle, the quantity of gold to be had would be very considerable. situated as I am without the above means, and with so small a party, we can do little more than as many of the natives, and can only, for the present, continue the search for the most lucrative mines in the district, and for the places where it may be worth while for Government to keep up regular mining establishments, amongst which number these mines may undoubtedly be classed. The Pioneers have collected nearly an ounce of gold during the week they have been here; and had I the regular European apparatus, this ounce would, I have no doubt, have been a pound. This will be duly forwarded to yourself or the Collector as you may desire.

From H. CHAMBER, Esq., Chief Secretary to Government, to the Mint Committee, dated Fort Saint George, 18th January 1832, No. 9.

I am directed by the Right Honorable the Governor in Council to transmit to you the accompanying specimens of gold, and to desire that you will

cause them to be assayed correctly by the Mint-Master's Assayer both as to touch and real value.

You will be pleased to instruct Mr. Bannister to report distinctly on the three separate specimens, describing each according to the name of the mine appended to it; and I am to request that this report may be furnished with the utmost practicable expedition, as the season for mining operations on the Malabar Coast is rapidly drawing to a close.

From R. ATKINSON, Esq., Secretary, Mint Committee, to the Chief Secretary to Government, dated Fort Saint George, 28th January 1832.

I am directed by the Mint Committee to acknowledge the receipt of your letter of the 13th instant, directing them to cause three specimens of gold which accompanied it to be assayed by Mr. Bannister, the Mint-Master's Assayer.

2. I have now the honor, by direction of the Committee, to return the three specimens of gold sealed up in the enclosed parcel, and to forward herewith copy of the report made thereon by Mr. Bannister, the Mint-Master's Assayer, both as to touch and real value.

A Report of three Specimens of Gold forwarded with a letter from the Chief Secretary to Government, dated the 13th January 1832.

No. 1. The specimen of gold from the Coopul mines is very fine, being B. C. 1 grs. $3\frac{1}{4}$; its weight was 2 dwts. 14 grs., and its value Rupees 5-9-5. One hundred parts of this specimen would consist of the following metals:—

								Touch.
5 : 9 : 5								99-22
4 : 4								
Gain 1 : 5 : 5								
Gold	...	...	...	...	...	...	...	
Silver	...	...	...	...	...	...	...	76
								100

One ounce of gold of this fineness would be worth Rupees 43-4-8.

No. 2. The specimen of gold from the Nellamboor Rajah's mines is of fineness B. C. 0 grs. $2\frac{1}{4}$; its weight was 3 dwts. 4 grs., and its value Rupees 6-8-6. One hundred parts would consist of the following metals:—

								Touch.
6 : 8 : 6								94-53
3 : 12								
Gain 12 : 6								
Gold	...	...	...	...	...	...	...	
Silver	...	...	...	...	...	...	...	5-47
								100

One ounce of gold of this fineness would be worth Rupees 41-4-0.

No. 3. The specimen of gold from the Darala mines is of fineness W. C. 0 grs. $\frac{3}{4}$; its weight was 3 dwts. 2 grs., and its value Rupees 6-1-10. One hundred parts would consist of the following metals —

	Touch.
Gold	90.88
Silver	8.85
Copper	0.26
	100.

One ounce of gold of this fineness would be worth Rupees 99-10-6.

Fort Saint George, (Signed) W. BANNISTER,
23rd January 1832. Mint-Master's Assayer.
(A true Copy.)
(Signed) R. ATKINSON,
Secretary, Mint Committee.

From the Chief Secretary to Government, to the Principal Collector of Malabar, dated Fort Saint George, 3rd February 1832, No. 36.

I am directed by the Right Honorable the Governor in Council to transmit to you the accompanying copy of a letter and enclosure from the Officer Commanding on the Neilgherries, forwarding to Government specimens of gold found in different mines in your district, with copy of the report of the Mint-Master's Assayer thereon, and copy of a letter addressed under this date to Major Crewe.

The Right Honorable the Governor in Council desires that you will immediately make such inquiries as may be necessary to enable you to ascertain in whom the ownership of the mines is vested, and what claims require to be satisfied before the Government can obtain undisputed possession of the mines or their produce, if the right to all mines does not already belong to the ruling power according to the laws and usage of the country, and, in the meantime, you will obtain at prices not exceeding those specified by Lieutenant Nicolson, and forward to the Presidency as much of the gold as can be procured from each of the mines, the produce of which has been reported on by the Mint-Master's Assayer, taking especial care that the purchases be so effected as not to prejudice or abandon any right which may already belong to Government.

From the Chief Secretary to Government, to Major R. CREWE, Commanding Neilgherries, dated Fort Saint George, 3rd February 1832, No. 37.

I am directed to acknowledge the receipt of your letter of the 7th ultimo, and to transmit to you the report of the Mint-Master's Assayer on the three specimens of gold received from Lieutenant Nicolson.

The specimens were sent to the Mint without any communication of the cost of the several pieces as noted on the card attached to each, but with orders to report both as to the touch and real value of each. You will perceive from the following memorandum that the value of each is greater than the cost; and, if you are satisfied that the cost is correctly reported, it is obvious that the purchase, at the prices specified, will be advantageous to Government, especially of the gold from the Coopul mines:—

1	2	3	4	5	6	7	8
Specimens.	Weight.	Fineness.	Touch.	Value as stated by the Assayer.	Cost as stated by Lieut. Nicolson.	Gain in Value.	Value of an ounce of Gold of this fineness.
No. 1, Coopul Mines.	2 14	E. 1 3 1	Gold 92.22 Silver .78 100	Rs. A. P. 5 9 5 4 4 0	Rs. A. P. 1 5 5 4 3 4	4 8	
No. 2, Neilgherries Mines.	3 4	R. 0 2 1	Gold 94.53 Silver 5.47 100	6 8 6 5 12 0	0 12 0 4 1 4	0	
No. 3, Darala Mines.	3 2	W. C. 0 3/4	Gold 90.88 Silver 8.85 Copper 0.26 100	6 1 10 5 0 0	1 1 10 39 10 6	6	

You will be pleased to preserve carefully the assayed specimens herewith transmitted, and communicate with the Principal Collector of Malabar on the subject of the best mode of obtaining the gold on account of Government, which he will be fully qualified to state when he shall have ascertained in whom the ownership of the several mines is vested, and what claims require to be satisfied before undisputed possession of the mines, or their produce, can be obtained. A copy of the letter addressed to him under this date is herewith transmitted for your information.

From H. CHAMLER, Esq., Chief Secretary to Government, to the Mint Committee, dated Fort Saint George, 10th February 1832, No. 41.

I am directed by the Right Honorable the Governor in Council to transmit to you the accompanying specimens* of gold, and to desire that you will cause them to be correctly assayed, and the result, both as to touch and real value, reported for the information of Government.

* Received in a letter from Major Crewe, dated 30th January 1832.

From Major R. CREWE, Commanding Neilgherries, to the Chief Secretary to Government, Fort Saint George, dated Ootacamund, 30th January 1832.

Adverting to the matter connected with my communication of the 7th instant, I now beg you will do me the honor of submitting, for the consideration of the Right Honorable the Governor in Council, the enclosed copy of a communication received yesterday from Lieutenant Nicolson, which is accompanied by three specimens of gold, the quality of each of which, equally with the places at which they were collected, is stated in that officer's report.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to Major R. CREWE, Commanding Neilgherries and in General Superintendence, dated Caremat Jungles, 25th January 1832.

In continuation of my reports, for the information of Government, I have now the honor to acquaint you that the Moplas at the Coopul mines having commenced a system of devastation in filling up the shafts, &c., I have upon under the necessity of applying to the Collector for a Havildar's guard, on the arrival of which at Coopul (having heard that the same system of depredation was going on in the mines in this direction for the purpose of giving us every possible difficulty and impediment in our search) I immediately left half my party at Coopul under the command of the Pioneer Havildar with the necessary orders for protecting the works, &c., while I am continuing the search and endeavouring to prevent injury being done to the mines in this neighbourhood which are said to be very numerous and much richer than those at Coopul. As yet, however, we have only come upon one which is in a mountain called Combals Molly, one of the Chula Molly range close under Nellyaloni.

The average quantity of gold to be found in this mine may be taken at about a gold fanam's weight per man daily; but, in consequence of the constant search we are making in the jungles for the best mines, we have no time for gold washing.

I take this opportunity of a party returning to Ootacamund, who have brought pay for the detachment, to forward to you by them the gold which has been found by the Pioneers up to this date in searching the Nellamboor valley.

The situations of the richest mines I shall duly have the honor to forward in a rough map.

In now again submitting, for consideration, the necessity of my party being increased, I trust I may not be accused of presumption in suggesting the expediency of teaching the whole corps of Pioneers the methods of washing for gold, and furnishing them with trays accordingly—a system which, if well followed up, would, no doubt, lead to the discovery of many valuable mines, particularly in the Keondah and Moorkoorly Hills to which we have fairly traced the strata which contain gold in that direction. It may be as well to remark en passant, that the above-mentioned trays are very light, and with a little

ingenuity would form a much more comfortable and useful covering for the head, for men who are exposed to the sun the whole day, than the cap they now possess. The quantity of gold sent herewith is as follows:—

From the Coopul mines three ingots weighing 32 new gold fanams and 7 barley corns (touch 9).

From the Kellapumpoya and Peonapoya rivers, Nellamboor valley, three ingots weighing 30 new gold fanams, and 5 barley corns (touch $8\frac{1}{2}$).

From the Oarcotode and Carampoya rivers under the *Moorkoorly Hills* one ingot weighing 13 new gold fanams (touch $9\frac{1}{2}$). Total sent 83 new fanams' weight.

A small quantity of gold dust remains; but as it is not melted, and therefore very liable to be lost, I have not sent it.

From R. ATKINSON, Esq., Secretary, Mint Committee, to the Chief Secretary to Government, dated Fort Saint George, 23rd February 1832.

I am directed by the Mint Committee to acknowledge the receipt of your letter of the 10th instant, directing them to cause the specimens of gold which accompanied it to be assayed by the Assay Master:

2. I am further directed to return the seven specimens of gold sealed up in the enclosed parcel, and to forward herewith copy of the report made thereon by the Assay Master both as to touch and real value.

A Report on seven Specimens of Gold forwarded with a letter from the Chief Secretary to Government, dated the 10th February 1832.

No. 3.—The specimen No. 1 of gold from the Nellamboor mines is in fineness B. C. 0, $2\frac{1}{4}$ grs. Its weight, when received, was 3 dwts. 1 gr., and its value Rupees 6-4-4. One hundred parts of this specimen would consist of the following proportions:—

Gold	94.53
Alloy	5.47
	100

One ounce of gold of this fineness would be worth Rupees 41-3-8.

No. 4.—The specimen No. 2 of gold from the Nellamboor mines is in fineness B. C. 0, $2\frac{1}{4}$ grs. Its weight, when received, was 3 dwts. 1 gr., and its value Rupees 6-4-4. One hundred parts of this specimen would consist of the following proportions:—

Gold	94.53
Alloy	5.47
	100

One ounce of gold of this fineness would be worth Rupees 41-3-8.

No. 5.—The specimen No. 3 of gold from the Nellamboor mines is in fineness B. C. 1, $\frac{1}{4}$ gr. Its weight, when received, was 1 dwt. 7 grs., and its value Rupees 2-11-3. One hundred parts of this specimen would consist of the following proportions:—

Gold	96.9
Alloy... ..	3.91
	100

One ounce of gold of this fineness would be worth Rupees 41-13-8.

No. 6.—The specimen No. 1 of gold from the Coopal mines is in fineness B. C. 1, 3 grs. Its weight, when received, was 3 dwts. 16 grs., and its value Rupees 7-14-8. One hundred parts of this specimen would consist of the following proportions:—

Gold	98.93
Alloy... ..	1.4
	100

One ounce of gold of this fineness would be worth Rupees 43-2-10.

No. 7.—The specimen No. 2 of gold from the Coopal mines is in fineness B. C. 1, $3\frac{1}{4}$ grs. Its weight, when received, was 3 dwts. 11 grs., and its value Rupees 5-5-1. One hundred parts of this specimen would consist of the following proportions:—

Gold	99.22
Alloy... ..	78
	100

One ounce of gold of this fineness would be worth Rupees 43-4-2.

No. 8.—The specimen No. 3 of gold from the Coopal mines is in fineness B. C. 1, 3 grs. Its weight, when received, was 3 dwts. 17 grs., and its value Rupees 8-0-1. One hundred parts of this specimen would consist of the following proportions:—

Gold	98.96
Alloy... ..	1.4
	100

One ounce of gold of this fineness would be worth Rupees 43-2-9.

No. 9.—The specimen of gold from the Carcatode mines is in fineness B. C. 1, 3 grs. Its weight, when received, was 3 dwts. 4 grs., and its value

Rupees 6-13-8. One hundred parts of this specimen would consist of the following proportions:—

Gold	99.22
Alloy... ..	78
	100

One ounce of gold of this fineness would be worth Rupees 43-4-7.

Fort Saint George,
17th February 1832.

(Signed) W. BANNISTER,
Assay Master.

(A true Copy.)

(Signed) R. ATKINSON,
Secretary, Mint Committee.

From H. CHAMIER, Esq., Chief Secretary to Government, to the Principal Collector of Malabar, dated Fort Saint George, 2nd March 1832, No. 71.

With reference to my letter of the 3rd ultimo, I am directed by the Right Honorable the Governor in Council to transmit to you the accompanying copy of a letter and enclosure from Major Crewe, dated 30th January last, forwarding to Government specimens of gold found in your district with copy of the report of the Assay Master thereon.

From H. CHAMIER, Esq., Chief Secretary to Government, to Major R. CREWE, Commanding Neilgherries, dated Fort Saint George, 2nd March 1832, No. 72.

With reference to your letter of the 30th January last, I am directed by the Right Honorable the Governor in Council to transmit to you the accompanying copy of the report from the Assay Master on the specimens of gold received from Lieutenant Nicolson, which are herewith returned.

From Major R. CREWE, Commanding Neilgherries, to the Chief Secretary to Government, Fort Saint George, dated Ootacamund, March 1832.

In furtherance of the matter connected with my communication under date 8th January last, I have now the honor of submitting, for the consideration of the Right Honorable the Governor in Council,—

No. 1, copy of a Report from Lieutenant Nicolson, accompanied by a specimen of gold obtained in the Nellamboor valley from the mines at present rented by the Rajah of that district.

No. 2 are copies of a correspondence between Lieutenant Nicolson and Mr. Hudleston, the Principal Collector in Malabar, wherein Lieutenant Nicolson accounts for the circumstances to which he attributes his having purchased the specimens of gold heretofore forwarded at what is considered a very low rate, viz., "from the purchase having been effected from the gold washers themselves, previous to its falling into the hands of Sowcars," and minor errors also in Lieutenant Nicolson's former report of the value of the specimens then sent, but not affecting their aggregate value, are also explained away.

Lieutenant Nicolson, I regret to state, is now alarmingly ill at Calicut from fever contracted in the jungles, and if he recovers it is not probable that his liability to fever will admit of his prosecuting this labor during the following season. Mr. Hugonin is also at that place, and, as I deem it no longer prudent to keep persons out in the jungles (and were it otherwise, no benefit could result in Lieutenant Nicolson's absence), the party of Pioneers employed on this duty have been remanded to regimental head-quarters. As relates to the Swiss, Mr. Hugonin, whose fatigue, exposure, and serious illness from fever have been of no ordinary degree, I beg respectfully to submit, for the consideration of the Right Honorable the Governor, how far it may be found expedient to extend remuneration to this indigent and useful person for past services. From the tenor of his engagement with Government, a very few rupees would cover the amount he thereby stands entitled to; but in moving about in search of mines, in ascertaining their relative products and value, it would seem to me that he has been differently employed than was originally contemplated, and it is under this view that I presume to submit his case. His further employment and remuneration are also points on which I beg to receive instructions.

A bill for sums advanced to Mr. Hugonin, by the Principal Collector and by myself, for coolies and implements necessary, as sanctioned by the Minutes of Consultation of the 15th February 1831, I take the liberty to enclose, and trust it will meet with approval.

With reference to this subject generally, and to the instructions more especially conveyed to me in your letter of the 8th February last, I have the honor to report that, after communication with the Principal Collector in Malabar, who has had personal interviews and intercourse with Lieutenant Nicolson and Mr. Hugonin, the best information arrived at leads to the conclusion that, in the first instance, it would be prudent to ascertain what can be effected through the medium of the people of the country from whom gold can be purchased on favorable terms; and by machinery calculated to facilitate their operations is deemed desirable, as without pumps wherewith to clear the mines of water and a stamping-mill (a model of which is now under preparation by Mr. Hugonin at Calicut) for pounding the stones in which the ore is found, it seems impossible to arrive at a correct estimate of the productive powers of the mines. Lieutenant

Nicolson assures the Collector that the deeper the shaft be carried, the richer will be the vein, and inquiry would seem to bear him out in this, as Mr. Hudleston has ascertained that in some of the mines the people actually dive for the sake of what they can collect below the surface of the water. Without the aid of machinery it is not anticipated that the treasures believed to be contained in these mines can be fairly developed; and as Lieutenant Nicolson has observed, and it is made apparent that several hundreds of the natives of the country do now actually procure a livelihood by washing for gold, unaided by machinery, it is reasonable to infer that by the application of proper mining apparatus, adequately superintended and promoted by such moderate outlay of capital as should be found requisite, highly profitable returns would be arrived at.

After examination of the various mines in Malabar, those at Coopul are considered the best for any experiments Government may be pleased to decide upon. Their produce is good, and they are not rented. This latter reason, however, from the smallness of the sums collected from the gold farms, would not be deemed a consideration, were other mines found to be more worthy of being worked. In concluding this report, I feel it a duty to record the obligations I am under to the Principal Collector, Mr. Hudleston, through whose means I am enabled to furnish that information I now respectfully submit.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to Major R. CREWE, Commanding Neilgherries, dated Ariacode, 28th February 1832.

For the further information of Government, I have the honor to report our return to the Coopul mines, after having duly searched as much of the Nellamboor valley as the jungle has permitted us to penetrate, and I am happy to add that we have been as successful as could be wished. The mines in that direction are innumerable. The principal ones, however, are in the thickest part of the jungle immediately under the Wynnad Hills and near the following villages belonging to the Tercoopaad of Nellamboor, viz., Carembat, Katchambara, Moondairy, and Maneecocote. The Carembat jungle is mined throughout whenever the ground will admit of water being supplied from the neighbouring rivers, this being the only thing requisite, as the whole of the soil under the hills contains gold, the quality of which is much the same as the specimen I have had the honor to forward labelled "from the Nellamboor Rajah's mines." This, you will perceive by a small specimen herein enclosed (weight 5 new gold fanams), cost Rupees 2-4-0.

I now beg to state that, in consequence of an intimation from the Collector of Malabar, requesting to see me respecting further operations, I am proceeding to Calicut, when I shall have the honor to await your further orders.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to Major R. CREWE, Commanding Neilgherries, dated Calicut, 5th March 1832.

The Principal Collector of Malabar having furnished me with copies of communications from Government, dated 3rd February last, respecting the purchase of gold in Malabar on account of Government, I have the honor to enclose a copy of a communication forwarded by me on that subject.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to the Principal Collector of Malabar, dated Calicut, 5th March 1832.

In reply to yours of the 1st instant, and with reference to the communications therein contained from Government, I have the honor to state that my having obtained, at such low prices, the specimens of gold lately forwarded to Government arises from my having purchased them from the *gold washers themselves* previous to their getting into the hands of the *Sowcars*, whose customary profits would have otherwise made them much dearer; but it appears that a slight inadvertency has occurred in consequence of my not having had the means of determining the *exact* proportion of each specimen to an ounce, which circumstance has caused a slight *overcharge* of the specimens from Nellamboor and Wynaad, and an undercharge of the specimen from Coopul. This, however, does not affect the cost of the whole, viz., Rupees 15, nor its value, according to the Mint-Master's report, viz., Rupees 18-3-9; and, if people were stationed at the several mines to purchase the gold on account of Government, they could obtain it at the following rates:—

	Value according to the Mint-Master's Report.
	Rs. M. A. P.
In Wynaad, per ounce 32	39 10 6
In the Nellamboor valley, per ounce 34	41 4 0
At Coopul and Carcatode, per ounce 36	43 0 0

If required to be melted into ingots 4 annas per ounce must be added for goldsmith's hire and borax; so that the purchase of Wynaad gold will yield a profit of upwards of 23 per cent., Nellamboor gold 29 per cent., and Coopul gold 19 per cent.

REVENUE DEPARTMENT.

Extract from the Minutes of Consultation under date the 15th February 1831.

Resolved that Henry Louis Huguonin be employed to search for gold in the mountains on the Malabar Coast under the immediate control of Lieutenant Woody Nicolson, of the 49th Regiment, Native Infantry, who has been selected by Government to superintend the undertaking under the general authority of Major Crewe, Commanding on the Neilgherries; and that,

as Mr. Huguonin will require some small advances to enable him to commence his operations, he be allowed to receive a sum of Rupees 200 from the General Treasury at Madras, and that Major Crewe be authorized to draw upon the Principal Collector of Malabar for this purpose as far as Rupees 300, which he will issue to Mr. Huguonin in such sums as he may consider necessary.

2. Resolved that Major Crewe be desired to detach a Havildar and party of Pioneers under the command of Lieutenant Nicolson with Mr. Huguonin, both to assist and check him in his operations; and that the Principal Collectors of Malabar and Coimbatore be directed to afford Lieutenant Nicolson and Mr. Huguonin all the aid in their power. During his employment on this service, Lieutenant Nicolson will be allowed the usual pay of a Pioneer Officer of his rank employed upon a special local duty.

3. Ordered that copies of the letter from the Principal Collector of Malabar to the Secretary to Government, under date the 10th January 1831, be furnished to Major Crewe and Lieutenant Nicolson, and that Major Crewe be desired to order Lieutenant Nicolson and Mr. Huguonin to commence operations in such part of the mountains as, after consultation with them, appear to him most likely to be productive of gold.

4. Resolved that the Principal Commissary of Stores be directed to supply Lieutenant Nicolson, of the 49th Regiment, Native Infantry, with such implements for mining as, upon consultation with Mr. Huguonin, he may consider necessary, and that Lieutenant Nicolson and Mr. Huguonin be ordered to proceed without delay to the Neilgherries, where they will report their arrival to Major Crewe and receive his instructions.

5. Resolved that Mr. Huguonin be required to execute, in due form, an agreement in the terms proposed in the draft appended to the President's Minute, and that a copy of it be furnished to Major Crewe and Lieutenant Nicolson for their information.

(A true Extract.)

(Signed) H. CHAMIER,
Secretary to Government.

(A true Copy.)

(Signed) R. CREWE, Major,
Superintending.

From H. CHAMIER, Esq., Chief Secretary to Government, to Major R. CREWE, Ootacamund, dated Fort Saint George, 10th April 1832, No. 100.

I am directed to acknowledge the receipt of your letter written in March (date not specified), and to acquaint you that the Right Honorable the Governor in Council has been pleased to sanction the bill accompanying it, amounting to Rupees 421-12-10, for sums advanced by you and the Principal Collector of Malabar to Mr. Huguonin employed to search for gold in the Province of Malabar.

By the letter addressed to Dr. Christie at Bombay, you will observe that that officer has been directed to repair to the Neilgherry Hills, and it would, therefore, be advisable to postpone any arrangements for the introduction of mining apparatus, as strongly recommended by you, until he shall arrive. His scientific attainments, and probable experience of the use of the best and latest inventions of machinery, will enable him to offer suggestions by which our researches may be much facilitated.

The Right Honorable the Governor in Council has, as you will observe, nominated Mr. Hugonin to serve under the orders of Dr. Christie, and is prepared to remunerate his services, on such a just and moderate scale as you may on consideration deem them to merit.

From Major R. CREWE, Commanding Neilgherries, to the Chief Secretary to Government, Fort Saint George, dated Ootacamund, 23rd July 1832.

I do myself the honor of submitting, for the consideration of the Right Honorable the Governor in Council, a letter from Lieutenant Nicolson, under date the 17th instant, regarding which I beg respectfully to observe—

1. That, as the time approaches for the prosecution of any farther labors decided on in the search for, or attainment of gold, arrangements in furtherance of such objects should at once be commenced upon, so that any parties, materials, and working implements to be provided should be got in readiness, and operations entered upon the instant the season admits.

From the tenor of my report of the 20th March last, founded on authentic reports, the result of personal observation or minute inquiry on the part of the persons furnishing the information, I am of opinion that the various and productive mines discovered last season would justify the application of our means this year to the working some one of them, and it would seem to me that arrangements in furtherance of this object would be most efficiently and satisfactorily arrived at in communication and co-operation with the Collector of Malabar; and during the same period I would suggest that Assistant-Surgeon Christie be separately occupied in search for similar geological and other useful products in such directions as his science and observation may suggest.

2. Lieutenant Nicolson's memoranda of expenses incurred and losses sustained in several cases, as annexed to his letter, appear to have been the unavoidable causes of the nature of the undertaking he had entered upon; but those more especially arising out of sickness and extreme fever engendered in the jungles, during the two past seasons, both which attacks long threatened to terminate fatally.

3. As relates to the last paragraph of Mr. Chief-Secretary Chamier's letter of the 10th April last, I beg to suggest that a monthly salary, retrospectively, be granted to Mr. Hugonin of Rupees 70, which sum (his unremitted and useful services considered, and his loss of health also by fever to an

(Lieutenant Nicolson) may not, I trust, be deemed unrea-

sonable. I however beg to be honored with the decision the Right Honorable the Governor in Council for further guidance.

FINANCIAL DEPARTMENT.

Extract from the Minutes of Consultation, under date 31st August 1832, No. 220.

Read the following letter from Major CREWE:—

(Here enter 23rd July 1832, No. 191.)

Submitting a letter from Lieutenant Nicolson relative to the search for gold; recommending that arrangements be made, in co-operation with the Collector of Malabar, for prosecuting the search; and suggesting that a monthly salary of Rupees 70 be granted to Mr. Hugonin.

Resolution thereon.

Resolved accordingly that Major Crewe be authorized to instruct Lieutenant Nicolson to make the necessary arrangements, in communication with the Principal Collector of Malabar, for working, with the aid of Mr. Hugonin, some one of the mines discovered last year in that province, and that a party of Pioneers, properly furnished with the necessary tools and implements, be detached to assist in the execution of the work as soon as the season may admit, the gold found being immediately made over to the Principal Collector of Malabar, who will depute a native revenue officer to attend on Lieutenant Nicolson to receive charge of it and remit it to his treasury. During the period employed in this work, Assistant-Surgeon Christie, as recommended by Major Crewe, will pursue his researches separately in such parts of the Malabar, Coimbatore, and Salem Districts as may afford the best prospect of further useful discoveries.

As it appears from the memorandum annexed to Lieutenant Nicolson's report of the 17th July 1832, and from former statements, that he has incurred considerable expense in prosecuting the inquiries entrusted to him last year; that his labors have been very successful; and that his health has suffered materially from fevers contracted in the jungles where he was employed: Resolved that he be authorized to draw from the treasury of the Principal Collector of Malabar a monthly allowance of Rupees 200, in addition to the allowance sanctioned under date the 15th February 1831, from the commencement of his employment, under the orders of Government of that date, and as long as he may continue to be so employed.

Resolved, also, at the recommendation of Major Crewe, that a monthly allowance of Rupees 70 per mensem be granted to Mr. Hugonin for the same period, and payable by the Principal Collector of Malabar; this allowance to be in lieu of any remuneration to which he would be entitled under

the agreement with the Government, referred to in the Minutes of the 15th February 1831, paragraph 5. and executed day.

From Major R. CREWE, Commanding Neilgherries, to the Chief Secretary, to Government, Fort St. George, dated Ootacamund, 6th October 1832.

As relates to the Minutes of Consultation, under date 31st August last, the purport of which was duly communicated to Lieutenant Nicolson, I now beg to enclose a communication from that officer connected with the labors of approaching season at the Coopul mines, and I take the liberty of respectfully submitting, for the consideration of the Right Honorable the Governor in Council,—

1. That from past experience and from all information to be arrived at, without pumps for the removal of the water out of the shafts, it would seem impracticable adequately to prosecute the work. In the outset two might be sufficient, but after a short time, as the shafts become deeper, two additional ones would be requisite, making a total of four, and which, if Lieutenant Nicolson's information is correct, are procurable from Mr. Law's Depot of building materials at the Presidency.

2. Cranes and tripods I calculate on being able to have prepared at Palghautcherry, and I shall take measures to this effect.

Stamping-mills are much to be desired. In the last report a model of one was stated to be in preparation at Calicut under Mr. Hugonin's superintendence; everything shall be done in order to having one prepared; but, if unsuccessful, some preparation of granite, in the shape of pestle and mortar or even sledge-hammers, may serve as substitutes, and, under any circumstances, the work can progress without the two former, though not to an equal extent.

The melting the ore I do not immediately see the necessity of, but this equally with the purchase of gold at the mines. The selection of trustworthy persons for such purposes, as also for the supply of coolies, and superintendence of all local matters, are duties devolving, I conceive, on the Principal Collector in Malabar, who alone possesses means adequately to provide for their performance.

3. A further supply of chests of mining tools I would also recommend; and should they and the pumps be sanctioned, I beg to suggest their early despatch to Calicut by sea, as well from motives of economy as to carriage, as from the important object of their reaching their destination in sufficient time to be brought into use, as required, during this season.

4. Smiths and carpenters for the construction of scaffolding and repairs of various tools in use will also, I conceive, be supplied on the spot under the orders of the Principal Collector; and

5. As relates to the insalubrity of the climate, and fevers contracted during the two former seasons, in part from want of adequate protection against the heavy dews, I beg to suggest the practicability of the construction of a

of sheds, on an appropriate site, near to the mines, of which leaves, by the inhabitants of the country, the expense would be most trivial.

Discharge of these duties Lieutenant Nicolson will leave Ootacamund for Palghautcherry on the 8th instant, en route to Calicut, where he will commence preparations in communication with the Principal Collector in Malabar, and there await the receipt of further instructions, with which I beg to be honored, the above points.

From Lieutenant W. NICOLSON, Superintending Gold Mines in Malabar, to Major R. CREWE, Commanding Neilgherries, dated Ootacamund, 1st October 1832.

With reference to the Minutes of Council of the 31st August last, respecting the gold mines in Malabar, I have the honor to request you will be pleased to signify my most grateful acknowledgments for the readiness and liberality with which Government have repaid my humble endeavours, and I now beg to forward a few suggestions for the future management of the mines. With regard to the choice of mines, those at Coopul would seem, all things considered, to be as good as any for commencing operations on; but, although the party and tools, which were furnished me last year, were sufficient for searching the country, I have already had the honor to state that nothing can possibly be accomplished on a grand scale without the common machinery requisite for working any mine in the world, viz., pumps for raising the water out of the shafts, cranes for craning up the ore and earth, stamping-mills for crushing it, troughs for washing it, and (if the metal is required in bars) apparatus for melting it; all the other implements requisite are contained in the mining-chests of tools forwarded by Government, of which, however, a much greater number will be now necessary, in order to furnish the miners with them, and I should think that, in addition to the two chests already sent from Madras, if ten more be now dispatched to Coopul, they will not be found too many. Carpenters and smiths (for the repairs of these articles and the construction of scaffolding, &c.) will of course be necessary. Three-inch cylinder pumps may be procured, at Mr. Law's Depot on the Mount Road, at Rupees 260 each (the price in London is, I believe, 10l.). Cranes, I understand, may be made up at Palghat, to which place Mr. Hugonin and myself are now proceeding, but the greatest requisites are stamping-mills and steam-engines, neither of which, I fear, can be made up in India, unless at enormous expense, and they could never, of course, be compared to those of English manufacture.

Without the articles above mentioned, all that can be done in the present state of the mines is to see that the whole of the gold that is found be purchased on account of Government, instead of its going to the Nairs, &c., as hitherto; and this circumstance will greatly depend on the strict honesty and trustworthiness of the native civil authorities attached to the party in counteracting the tricks, obstacles, and difficulties continually thrown

in our way by those who have hitherto shared in the profit and who will now find themselves obliged to give up these mines. I have now to add that it is of the utmost importance rendered secure from the night-air and dews, should be employed at the mines, without which it is next to an impossibility that the climate can be withstood for any length of time by any but the natives of the district in that neighbourhood. It is, I presume, needless to say that the revenue officer, who attends on the party, should always be provided with a sufficient sum for purchasing daily the quantity of gold found in the mines by the Moplas.

In conclusion, I most respectfully beg to submit that a sight of these mines would do more than all I can write on the subject, and I, therefore, humbly beg to suggest, that a Committee of such competent persons as Government may deem fit may assemble at Coopal, with a view to the full consideration of the circumstances I have above mentioned, and of the plans which I have now the honor to submit for the future management of the mines.

FINANCIAL DEPARTMENT.

Extract from the Minutes of Consultation, under date 12th October 1832, No. 257.

Read the following letter from Major R. CREWE, Commanding Neilgherries:—
(Here enter 6th October 1832, No. 254.)

Resolved that the Military Board be instructed to purchase two three-inch cylinder pumps at Mr. Law's Depot, and forward them, with eight chests of mining tools, to the Principal Collector of Malabar, at the earliest practicable moment, for delivery to Lieutenant Nicolson. If these articles cannot be sent by sea before the monsoon, they should be forwarded direct to Lieutenant Nicolson at Palghat.

Resolved that authority be given to Major Crewe to cause the requisite number of cranes and troughs to be made up at Palghat.

The Principal Collector of Malabar will cause a sufficient number of carpenters and smiths to be supplied to Lieutenant Nicolson, and a trustworthy native revenue officer to be in attendance; he will also cause a range of temporary sheds to be erected for the protection of the party at night.

From T. V. STONEHOUSE, Esq., Acting Secretary to Government, Financial Department, to the Military and Marine Board, dated Fort St. George, 12th October 1832, No. 260.

I am directed by the Right Honorable the Governor in Council to transmit, for your information, the accompanying extract from a letter from Lieutenant Nicolson, to the Officer Commanding the Neilgherries, dated 1st instant, together with an Extract from the Minutes of Consultation under this date.

From W. BANNERMAN, Esq., Acting Secretary to the Board of Revenue, to the Chief Secretary to Government, dated Fort St. George, 6th June 1833, No. 230.

I am directed by the Board of Revenue to request that you will lay before the Right Honorable the Governor in Council the accompanying letter from the Principal Collector of Malabar, dated the 25th ultimo, forwarding the report of the Committee appointed, under date the 14th December 1832, to inspect and report upon the gold mines in Malabar.

Report of the Committee appointed by Government to examine the Gold Mines in the Zillah of Malabar.

The Committee, in carrying into effect the orders of Government, have directed their inquiries to three subjects:—

- I.—The productiveness of the gold mines in the zillah of Malabar.
- II.—The machinery that would be required, and the expense of working them.
- III.—The propriety and utility of sending to England for machinery for such a purpose.

On these different subjects information has been derived from three sources:—

(1.) The correspondence of the former Principal Collectors of Malabar and the Officer conducting the search for gold with Government or its servants; (2.) Personal inspection of some of the places where gold is found; and (3.) The examination of persons connected with the mines. Some of the most important documents and evidence will be given in the appendix; and the result of the personal examination will be seen throughout the report, where it particularly bears on any point of inquiry. The Committee regret that they could not obtain such positive evidence on all points as they would wish to have laid before Government. They had to derive their information on many subjects from persons connected with the mines, who were interested either in concealing or enhancing their value; and they had, therefore, to guard against wilful misrepresentation on the one hand, and exaggerated statements on the other. In the absence of those satisfactory data, which the subject scarcely admits of, they have been led by the strongest presumptive evidence they could collect; and, in stating the result of their inquiries, they have not lost sight of the importance of their decision, as on it will probably depend either the abandonment of mines, which might prove a valuable source of revenue to Government, or an immense outlay of money in the purchase of machinery, which might ultimately prove useless.

I.—On the productiveness of the gold mines in Malabar. In attempting to ascertain this, the Committee directed their inquiries to the eight following heads:—

- (1.) The number of mines in the zillah.
- (2.) The number of persons employed in mining.
- (3.) The length of time the mines have been worked.
- (4.) The taxes levied at different times on the produce.
- (5.) Present state of the mines of Coopul and Mambant, and the native mode of working them.
- (6.) Quantity found by one man per day.
- (7.) Quantity annually produced.
- (8.) The condition of those connected with the mines.

1. Previous to noticing the number of mines, it may be useful to take a brief survey of the country in which they are found, and of the geological features which it presents. Nearly the whole of the Province of Malabar, except that part immediately along the coast, consists of lofty mountains covered with dense forest or thick jungle. The principal chain more immediately connected with the present subject is formed of the Koondah and Moorcoorty Hills to the south-east of Calicut, the Neilgherries to the east, and the Wynaad mountains to the north-east. These send off numerous lateral ranges, between which are deep valleys in most places closely covered with forest. The most extensive of these is that of Nelloomboor, including nearly the whole of the Ernaad Taluq, bounded on the east by the Neilgherries, on the north by Wynaad, on the north-west by a lateral range running south from the ghauts called the Wavoot Hills, and on the south by the Koondah and Moorcoorty mountains. From these on all sides innumerable mountain-streams descend, and, uniting near Nelloomboor, form the Beypoor river, of considerable magnitude, which falls into the sea about eight miles to the southward of Calicut. The names of the different streams are particularized in a valuable paper on the gold mines by Mr. Sheffield, which will be found in the appendix. In the mountainous district of Wynaad streams in the same manner descend through every valley and unite into large rivers which fall into the Cauvery in the Mysore and Coimbatore countries. The whole of the mountains above mentioned seem to be of primitive formation. In the Nelloomboor valley, so far as the observations of the Committee went, the prevailing rock is gneiss, a kind of stratified granite. Above this, in most places, is a species of clay iron stone, which from its softness, enabling it to be cut into the form of bricks for building, received from Dr. Buchanan the name of laterite. It is what geologists call the overlying rock of the whole country between the ghauts and the sea to the westward, and many of the smaller hills are entirely formed of it. When fresh dug, it is perfectly sectile; but on exposure to the heat of the sun and to the weather, it becomes of considerable hardness. So far as the gold mines are concerned, it may be considered to be a deposit formed in the lapse of ages, from the gradual disintegration of the immense mountain masses in the neighbourhood, in which process part of the precious ore may be supposed to have been washed down along with the earthy particles. However this may be, it is certain that gold exists more or less abundantly in the whole of the country on the western side of the ghauts in every stream which takes its rise from the Koondah, Neilgherry, and Wynaad mountains, and in the sands of the sea-shore along

the whole of South Malabar. It is throughout in the form of minute grains. One of the persons examined states that he had once or twice seen a piece as heavy as a gold fanam (about the 1/16th part of an ounce troy); but in all the specimens examined by the Committee the portions were infinitely smaller.

The most complete list of the places where gold mines have been opened, which has been furnished to the Committee, is as follows, distinguishing those which are situated in hills and those in the beds of rivers, which latter form by far the largest proportion:—

Table of Places in Malabar in which Gold Mines have been opened.

IN THE ERNAAD TALUQ.

1. Pallykooth River.	13. Maroothay River.
2. Kannamannah River.	14. Koottakel do.
3. Moothoota do.	15. Carembat do.
4. Marootangant do.	16. Maroyath do.
5. Pathillypaddom do.	17. Aracode do.
6. Karote River.	18. Varoor do.
7. Eddakara do.	19. Mambaat do.
8. Catchaperrah River.	20. Careatode do.
9. Mannakast do.	21. Coopul Hill do.
10. Maroothoyl do.	22. Aripamaad do.
11. Poolakotte do.	23. Teeroowally do.
12. Poothoo Piryarato River.	

IN THE WYNAAD TALUQ.

1. Davala Hill.	2. Poolyode Hill.
3. Nellyalom Hill.	4. Cherunkode Hill.
5. Ponery do.	

IN THE KOORMENNAAD TALUQ.

1. Poonoor River.	2. Malapooram River.
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IN THE CALICUT TALUQ.

Polwyge, Teeroowambaddy, and Iroopoomjy Rivers.

IN THE NEDINGANAAD TALUQ.

Pundaloor and Aliparamb Rivers.

IN THE SHERNAAD TALUQ.

Caraloendy and Parparangady on the sea-shore.

2. It is difficult to ascertain the exact number of people engaged in mining throughout the whole Province of Malabar, but the best-informed persons examined by the Committee do not make it exceed 1,000. Most of these are married, so that probably between 4,000 and 5,000 people derive a portion of their means of subsistence from this source. The population of the Ernaad, Wynaad, Neringanaad, Koormennaad, Calicut, and Shernaad taluqs, in

which mines principally exist, by a Census taken in Fasly 1239 (1829-30) was 412,279, making the proportion of those engaged in, or deriving subsistence from, mining speculations only $\frac{1}{10}$ th of the whole. Now, from Caldwell's Travels in South America, as quoted in the *Quarterly Review*, vol. XXXII., p. 147, it is learnt that in Chili, a country rich in mines of gold and silver, and the population of which is 600,000, two-fifths of the people are engaged in mining. It may at first sight appear invidious to institute comparisons between Malabar and America; but when we remember that a search for the precious metals has ever been a favorite speculation with men of all countries, and that there is no want of enterprise among the natives of India, when their own interest is nearly concerned, the small number of persons engaged in mining operations in Malabar may lead us to form a low estimate of the quantity of gold in the country. Of the 4,000 or 5,000 persons said above to be connected with the mines, few or none indeed gain their subsistence entirely by this means. It appears in evidence before the Committee that, in the search for gold, they employ only those periods during which the weather interferes with the carrying on of agricultural operations. They resort to the beds of rivers in the dry season, and to the hills during the rains, whenever their leisure or inclination leads them; and no instance is known of a person deserting other employments for the exclusive search for gold, another presumptive proof of the general belief of the unprofitableness of the pursuit.

3. No correct information could be obtained regarding the length of time during which gold mines have been opened in Malabar. It is pretty certain that Tippoo attempted to make them a source of revenue during his possession of the country. Mr. Sheffield in his letter, which has already been alluded to, states, "that it has been well known, from the earliest period, that gold is produced in the province, and the collecting of it has been farmed out, in Wynad and the Nellamboor valley, for the last 40 or 50 years." In the same document it is mentioned that the Honorable Mr. Duncan, Governor of Bombay, as far back as 1793, drew the attention of the local authorities to the gold mines. The celebrated Dr. Buchanan, who travelled through Mysore in 1802-3, casually alludes to gold being collected in the Nellamboor valley, and the privilege of collecting it being farmed out to a Nair.—(Travels in Mysore, vol. II., p. 441.) Dr. Whitelaw Ainslie in the first edition of his *Materia Medica of Hindoostan*, published at Madras in 1813, gives an account of the places where gold is found in India, which, as it is applicable to the present subject, may be here quoted with advantage. "Gold dust has been found," says he, "in the bed of the Godavery, and in Malabar in the bed of the river which passes Nellamboor in the Innada District. It has, moreover, been procured in very small quantities in Wynad, in the Arcot District, and in the sand of the Beypoor river near Calicut.

"Though the sources are evidently numerous from which this valuable metal can be obtained in the Indian Peninsula, it would seem from the little interest they have hitherto excited that none of them promised to be very productive."—(Ainslie's *Materia Medica of Hindoostan*, 1st Edition, p. 54.) We have thus positive proof of the existence of some gold mines for at least

40 years. Those at Coopul have been opened by the Moplas within the last eight years, and those at Teeroowally not more than four or five.

4. The tax levied at different times on the produce. In an extract of a paper, dated 9th January 1829, by Mr. Sheffield, which will be found in the appendix, it is stated that, in 1801, the gold dust in the Ernaad country was farmed for Rupees 1,408-8-0. He mentions also that at the time of writing (1829) the privilege of gathering gold was farmed out above the ghauts for the sum of Madras Rupees 1,250, and below the ghauts in Ernaad for Rupees 937-15-4, making a total of Rupees 2,187-15-4. Since 1803 a tax of Rupees 33 a year each has been levied on a certain number of pautties or troughs employed in washing for gold. At present this amounts in Ernaad to Rupees 839, which is a falling off of Rupees 569 a year since 1801, and in Wynad to Rupees 1,200. Besides this, the privilege of collecting gold in Caraloondy has within the last two or three years been farmed for Rs. 168, which makes the whole amount now received by way of tax upon gold paid to the Company Rupees 2,207. The smallness of this sum may be adduced as another presumptive proof of the little value attached to the gold mines in Malabar. Had their productiveness been considerable, it is not probable that it would have escaped the observation of the active and talented gentlemen who have at different times been employed in assessing the revenue of the province, more especially when we consider that a tax on the precious metals is the fairest possible, as, when they are employed as currency, it falls upon nobody.—(Mill's *Pol. Econ.*, p. 298.) Accordingly we find that, in the Spanish Colonies, a seigniorage of one-fifth was levied on the produce of the mines (Maive's Travels in Brazil *passim*); and Thunberg mentions that in Japan, which may "in gold contest the palm with the richest country in the world," the Emperor received two-thirds of the quantity collected.—(Travels, vol. IV., p. 103.)

5. Present state of the mines of Coopul and Mambaat, and the native mode of working them. The Committee, in the prosecution of their personal examination of the mines, assembled at Nellamboor, a village near the centre of the valley of that name already described, situated on the Beypoor river, about 30 miles in a direct line and in a nearly easterly direction from Calicut. Having there learnt from Lieutenant Nicolson that he considered the mines of Coopul in the immediate neighbourhood the best specimen of those in Malabar, they resolved to be guided by the result of their examination of them in forming an opinion of the rest, on the ground that, if they were found to be worth working, they would be the best to commence operations on, and, if they were not productive enough to warrant any outlay for machinery, the reasoning applied to them would, *a fortiori*, be applicable to every other place where gold is said to be found.

The mines at Coopul are situated about five miles in a south-west direction from Nellamboor. The road to them passes through jungle, interspersed with patches of paddyfields which are crossed by causeways. The principal mine is on the side of a small hill, which rises with a gentle acclivity to the height of about 50 feet, and which has been completely cleared. The soil is a light sandy clay, the laterite protruding through it in many places.

The mine is an excavation about 40 feet square, and reported to be about 45 feet deep. It is cut through the laterite, which has been already described as the overlying rock of the district, and which is here traversed by veins of quartz in fragments varying much in size. The principal shaft was filled with water to the reported depth of 30 feet, but a small one, which was kept free by chatties, was open for the inspection of the Committee. From the report of Mr. Nicolson, it appears that the Moplays generally pursue the veins of quartz, and wash the portions of rock and earth composing them, from a belief that they are most productive. The Committee had an opportunity of inspecting the process followed by the natives in washing for gold. The ingredients removed from the mine are put into a small hollow tray or trough of an oval shape, and resembling in form a turtle's shell, called by the natives a *murriya*, submerged in water and agitated with the hand until all the earthy particles are removed. The larger stones are thrown aside, and by repeated washing there at last remains but a small portion of sand. The tray is now inclined to one side, and water is poured in with the hand. The sand is gradually washed nearly away, with the exception of a small portion of a black color, in which are seen a few minute grains of gold. The larger particles of the metal are removed, and those which are too small to be taken up by the hand are obtained by pouring in a drop of mercury, with which it immediately amalgamates, and from which it is afterwards easily separated by heat. The process with each tray or *murriya* takes up from about 20 minutes to half an hour. The quantity found in each, worked in the presence of the Committee, was exceedingly small, but it proved to them satisfactorily that gold did exist in the spot examined. Mr. Nicolson stated to them, however, that the most productive veins were in the principal shaft which was completely covered with water; and that fair specimens could not be obtained until this was cleared by pumps. Under these circumstances, the Committee deemed it expedient to request Mr. Nicolson to remain in the neighbourhood of the mines, until

Appendix II., 5. pumps should arrive from Calicut, in order to procure favorable specimens of ore for their examination. His answer is given in the appendix, and will be more particularly noticed hereafter.

The number of men employed at this mine was variously reported to be from 300 to 500. From the immense accumulation of water we may presume that it had been altogether deserted by the natives for a considerable time. The washing before the Committee was carried on by a few of the Pioneers under Mr. Nicolson's orders.

The Committee afterwards proceeded to a small hill opposite to the one above described, where, in the midst of jungle, they found numerous excavations varying in dimensions, some of them apparently from 10 to 30 feet in depth. They seem to extend over a space of ground equal to about a square mile. They are worked only during the rains, as the want of water prevents operations being carried on in them during the dry weather. Unlike the one first described, these are confined to the alluvial deposits on the surface, and do not extend into the laterite.

Next morning the Committee proceeded to examine some mines situated in the bed of the Beypoor river near Mambast, about seven miles in a westerly direction from Nellamboor. They found extensive excavations from 20 to 30 feet in depth on a bank apparently thrown up by the river when swollen by the rains on one side of its channel. The superstratum consists of sand and gravel, below which are large nodules of quartz and gneiss; then occurs a stratum of sandy loam, in which the gold is found diffused in grains. It is said that about 250 Moplays are usually employed in searching for it during the dry weather. About 50 or 60 were at work when the Committee visited it, and they had an opportunity of examining the operation of washing the soil on a larger scale than was exhibited at the Coopul mines. Instead of the small trays or *murriyas*, troughs varying in length from five to seven feet and somewhat more than a foot in breadth, properly called *panties*, are placed over a running stream, or small artificial nullah, one end being raised somewhat higher than the other. These are filled with the earth, which is washed by water being constantly poured in at the raised end, being at the same time freely agitated with the hand. Near the other extremity small pieces of bamboos are laid across to prevent the grains of gold being washed away with the earthy particles. The larger stones are thrown aside, and when naught but sand remains, it is removed into the small trays, and the rest of the operation is the same as that before described. The grains were collected by means of a drop of quicksilver; the amalgam was afterwards wrapped in rag, and placed between two pieces of burning charcoal, the heat of which dissipated the mercury and left the gold in a state of purity. The Committee were informed that the various mines, formerly mentioned as worked in the beds of rivers, resemble the one above described. During their stay at Nellamboor they had also an opportunity of ascertaining, as far as one experiment went, the quantity of gold contained in a determinate weight of the earth taken from the mines of Coopul and Mambast, and the following is the result:—

(a.) Two maunds or 66 pounds of the earth from the upper stratum of the Mambast mine being washed produced quarter of a barley corn, value 1 $\frac{1}{2}$ th part of a rupee. Time reported by the Company's Gumastah 9 $\frac{1}{2}$. Time occupied in washing 20 minutes.

(b.) Two maunds of the lower stratum produced a still smaller quantity.

(c.) The same quantity of the pounded quartz from the Coopul mines produced three-quarters of a grain. Time occupied in washing alone 50 minutes.

(d.) The same quantity of the red earth from Coopul produced one grain. Time occupied in washing alone 50 minutes.

On this subject it may be allowable to quote the following note from Professor Jamieson's Mineralogy:—"The sand of any river is worth washing for the gold it contains, provided it will yield 24 grains in a hundred weight; but the sand of the African rivers often yields 68 grains in not more than five pounds weight, which is in the proportion of 50 times as much."—(Vol. III., pp. 58, 59, note at bottom.)

6. The quantity found by one man per day, by the rude methods of working above described, has been variously stated, and it must be expected to vary according to the industry of the parties, the degree of productiveness and other obvious circumstances. The natives examined by the Committee state it to be about two grains daily. Mr. Nicolson in his answers says, a good workman will collect six grains a day; but mentions the quantity collected by the Pioneers employed under him to be only three grains. They are inclined to think, however, from all that has come to their knowledge, that one-third of a gold fanam, or two grains, is a fair average.

As in the course of this report, and in the documents copied in the appendix, repeated allusion is made to the new and old gold fanams as a measure of weight and value, it may be useful to state here the proportions they bear to the more usual standards. The average weight of a new gold fanam is six grains nearly, and 80 may be reckoned to the ounce troy. The touch is 46½, and the average net Mint value of 100 pieces is Rupees 24-8-11. The average weight of the old gold fanam is about 5-79 grains; the touch is 47½, and the Mint value of 100 pieces is Rupees 24-7-3.

7. The quantity annually produced is also difficult to be determined. The proverbial unwillingness of a native to state his wealth, and the jealousy more especially regarding any interference of the English with the mines, render it almost impossible to gain any correct information on the subject. The quantity sold in the different bazaars in Malabar and the adjacent provinces, if it could be possible to ascertain it, would be some criterion to guide a calculation; but the Committee have been unsuccessful in their inquiries on this point. One of the most respectable natives examined by the Committee states the annual quantity at 40,000 new gold fanams' weight, or 500 ounces. Lieutenant Nicolson says that 700 Moplays would collect eight ounces a day. The Gumastah employed by Government to buy up gold assorts, he could purchase about 1,000 gold fanams' weight in the neighbourhood of Nellamboor alone; but from his price being low, this is but a small proportion of the whole produce. Mr. Sheffield mentions that he was informed the annual produce below the ghats was 5,200 gold fanams' weight, and in Wynaad 6,000, making the total 11,200, or 140 ounces troy! Amidst these conflicting statements, a calculation founded on data already admitted offers the only means of forming even a guess at the actual annual produce. Assuming, therefore, 1,000 persons to be the number employed in working the mines throughout the whole zillah, the average produce of each man's labor a day to be one-third of a gold fanam's weight, and the average time each man works to be exactly half the year, the total produce will amount to nearly 61,000 gold fanams' weight, or 750 ounces, which at the rate of Rupees 35 an ounce will be worth Madras Rupees 26,250 per annum. From various circumstances brought to the notice of the Committee, and more particularly from the facts which will be adduced in the next paragraph, this is probably far above the reality; but, even considering it to be near the truth, it is but an insignificant quantity when diffused throughout so large a population as that of Malabar, or when it is compared with the total produce of the globe, which is reckoned at a million and a quarter of ounces.

8. The condition of those connected with the mines, in the absence of more direct evidence, will also enable us to form some opinion of their productiveness. Little stress can be laid on the condition of the miners themselves. The accounts of all travellers in America agree in stating the portion of the population employed in the search for gold to be invariably the poorest and most miserable. In this country, as has been already stated, mining is not pursued as an exclusive occupation. The time not occupied in agriculture is given up to it by a portion of the inhabitants. But these are not in more comfortable circumstances than their neighbours, so far as can be known from the state of their houses, their dress or ornaments. They seem to be enabled merely to purchase a larger portion of tobacco, salt, and betel, which to them are actual necessities of life. Not an instance is known of a person becoming rich by mining. The Teroopaad, or petty Rajah of Nellamboor, who has a large extent of country, his own property, and who pays a tax to Government for the privilege of mining, is said to have acquired a considerable portion of his wealth by the gold produced on his estate. Every grain found is so much gain to him, as he exclusively employs his slaves, whom he is obliged to feed at any rate, in the search, and from all accounts he is a hard task-master. His case, therefore, cannot be considered a fair exception to the above statement of the general poverty of those connected with the mines; nor can this be owing to the want of industry on the part of the Moplays and others. The large excavations already described as having been made by them at Coopul, and the difficulties they have to contend with in keeping the shafts free from water, show their perseverance in the search. It may here be asked, why, if the profit of mining be so trifling, they continue to employ their labor in this manner? It can only be explained to arise from that natural eagerness which men in all countries show to enter into mining speculations, and by that "unaccordable infatuation" which often prompts men to desert even the "less arduous and more wholesome labors of agriculture" for the search after gold and silver. — (Caldclough's Travels in South America loc. cit.) Had the productiveness of the mines been considerable, it is highly probable that in a country where labor is so cheap as in Malabar, where a cooly can be hired for a pagoda a month, and where a thirst for gain is a well-known feeling of a large portion of the inhabitants, some person possessed of capital would have invested it in working them. Not an instance, however, is known of a person employing coolies for this purpose. One or two monied men indeed are in the habit of advancing small sums to the workmen, charging interest on the same, and buying up the gold at a certain price. But these men, though they must be well aware of the actual quantity yielded, have never entered upon the speculation themselves; and we can only ascribe this to a conviction on their part of its unprofitableness.

In the foregoing short statement of the results of the inquiries regarding the past productiveness of the mines, it will be seen that, though found over a large extent of country, the quantity of gold, so far as is yet known, is in no place great; that the number of people employed in mining bears a very small proportion to the total population of the districts in which gold is found; that those, moreover, are principally cultivators and coolies who in

this search employ only the time not occupied in agriculture; that the mines, though known for the last 50 years, have never attracted any marked attention; that the tax levied on them has been trifling, and that in one district at least it has been considerably reduced; that the richness of the earth in the precious ore is far below that which is reckoned encouraging in other countries; that the quantity found by one man daily is barely sufficient to furnish him with the necessaries of life; that the quantity annually produced is trifling when compared with the extent of territory and the population; and that no instance has occurred of native capitalists having engaged in the speculation by employing coolies on their own account. These considerations weigh powerfully with the Committee in giving it as their decided opinion that the productiveness of the mines is by no means such as to warrant entering upon any operations upon them on a grand scale with European machinery. They are aware that in this decision they differ widely from Lieutenant Nicolson. They are far from wishing to accuse that gentleman of any intention to mislead; on the contrary they consider that he has been actuated by a desire to benefit the Government under which he serves; but, at the same time, they may be allowed to remark that his sanguine and enthusiastic temper seems to have led him to form his opinion of the value of the mines in Malabar, more by his wishes than by the facts before him. He has looked on the bright side of the question on all occasions; has always taken the highest average as a guide for his calculations; and has overlooked circumstances which, if properly considered, would have convinced him of the futility of his speculations.

II.—The machinery that would be required, and the expense of working the mines. As in the event of Government determining to work the mines on their own account, it is probable that they would order the commencement of operations on those at Coopul, the Committee in their estimate of the quantity and price of machinery, and the expense of working them, have applied their calculations to the excavation which they personally examined at that place, and which has been already described. For the purpose of working this and all others most efficiently, besides the common mining tools, would be required the machinery noted in the following table, in which the probable cost of each is also given:—

Machinery.	Probable Cost.
	Rs.
Windlass Crane	700
Twelve Wheelbarrows	200
One Stamping-mill	3,500
A set of Troughs and Rakes with a Floodgate ...	1,500
Twelve Cribbles	100
Twelve Iron wire Sieves	200
Twelve Carts for carrying earth to the river ...	600
A Steam-engine Pump with building complete ...	12,000
Total	19,000

Of these, all but the steam-engine pump could be made up in India, but it is questionable whether they could not be obtained better and cheaper in England. The price above stated is merely hypothetical, as neither Mr. Nicolson nor the Committee have any data before them whereby to calculate the exact cost of machinery for one mine, but they consider that they have kept considerably within bounds at stating it at Rupees 19,000. Besides this, a reservoir for water would be required in the neighbourhood, and buildings for the workmen, &c., which even if built of *pisé* work and thatched in the common manner, as suggested by Mr. Nicolson, would yet amount to at least Rupees 1,000 more, making the whole outlay at first Rupees 20,000.

To work a mine with the above machinery, 100 coolies would be required at Rupees 3½ each and 60 bullocks at Rupees 5 each *per mensem*. Besides these, carpenters, smiths, iron, timber, &c., would amount to about Rupees 350 a month more. A European Superintendent, one Assistant, and a certain proportion of maistries would be required, the salaries of whom would amount to at least Rupees 500 a month. An important item, moreover, in the expense of working all machinery is the wear and tear, the interest on capital, and the insurance against loss, all of which might in this country be reckoned at about 20 per cent. Mr. Crawford, in his interesting account of the gold mines of Montradak in Borneo, rates it at 25 per cent. even on the comparatively rude machinery employed by the Chinese in that country.—(Indian Archipelago, vol. III., p. 477.)

On looking at the probable produce of a mine worked in this manner, and comparing it with that of the rude method at present pursued by the natives, it should be borne in mind that, even with the best machinery, the quantity of earth must be the same in both methods, as it is removed by means of manual labor with pick-axes, &c. Something certainly might be gained by blasting with gunpowder, but the labor saved in this way would be inconsiderable. The principal advantage of machinery lies in the facility of keeping the shafts free from water, the rapidity of bringing the earth containing the gold to the surface, and the washing of a large quantity at once. Aided in this way, it must be fair to suppose that one man will do the work of five without machinery. In South America, if they may judge from the following extract, the estimate is much lower:—"Sir William Adams, in a recent pamphlet on the actual state of the Mexican mines, maintains that the Anglo-Mexican Associations may reasonably expect to raise *treble* the quantity of ore formerly obtained by working them scientifically and by the aid of machinery."—(Conder's *Mexican Traveller*, vol. XXVI., p. 318.) If the larger estimate even be allowed, the quantity that would be yielded by the mine at Coopul in a month or year could easily be settled. One-third of a gold fanam or two grains having been previously stated as the produce of one man's labor at present, with machinery, it may be reckoned at 10 grains, which, with 100 men, would be 1,000 grains a day. It is not likely that the Moplays could be induced to work more than 24 days in the month, the others being allowed for feasts and fasts, to which the natives of this country are particularly attached. This would give 24,000 grains a month, or exactly 50 ounces, or 600 ounces a year. The price at which gold

can be bought at the mines, without the smallest outlay, is Rupees 35 an ounce, and it must be fair to calculate at this rather than at the Mint or bazaar value of the gold. The result will be best shown in the form of a table :—

Dr.	Per Contra.	Cr.
To interest at 20 per cent. per annum on Rupees 20,000 ...	Rs. 4,000	
„ pay of 100 men, at Rupees 34 per mensem, for one year ...	4,200	
„ hire of 60 bullocks, at Rupees 5 each per mensem, for one year ...	3,000	
„ iron, timber, smiths, carpenters, &c., at Rupees 350 per mensem, for one year ...	4,200	
„ a European Superintendent, at Rupees 300 per mensem, for one year ...	3,600	
„ one Assistant Superintendent at Rupees 50 a month, and five maistries at Rupees 10 each per month, for one year.	1,200	
	20,000	
„ balance in favor of the Mine in a year ...	200	
Total...	21,000	Total... 21,000
		By produce of 100 men at the rate of 10 grains per day each working 24 days in the month at an average throughout the year, reckoning the price of gold at Rupees 35 per ounce ... 21,000

In the table of expenses they have not included the salary of persons who would be required to superintend the steam engines, nor the waste that would ensue in the employment of mercury in the process of amalgamation which the small size of the grains would render necessary. Indeed, it is scarcely possible to calculate the exact outlay of money that would be required. All would depend on the skill and economy of the Superintendent. Government, if it once entered on the speculation, would be required to sanction all his demands, as a non-compliance with them would ever be a ready excuse for any failure in the produce. Add to this, too, the disadvantages that Government works labor under in the absence of that superintending care of those more immediately interested in the labors. It is generally remarked that private adventurers work mines far more economically than Government, or even an exclusive Company.—(Mills' Essay on Colonies, p. 30.) The experience of mankind seems to agree on this point, as in Taylor's Selections from Humboldt, p. 184, we learn that "all the metallic wealth of the Spanish Colonies is in the hands of individuals." In this part of their statement also, the Committee differ widely from Mr. Nicolson, and the remarks formerly made on his calculations of the quantity of gold in Malabar, apply equally to those on the productiveness of the mines when worked by machinery. In the table drawn out by him, and which accompanies his answers in the appendix, he has overlooked altogether the interest on capital and the charge for wear and tear. He has rated the increase which would accrue from the use of machinery at greatly too high a proportion. He has, moreover, gone on the broad assumption, for which the

Committee cannot see any good grounds, that wherever shafts are sunk there gold is to be found. Mr. Taylor, a gentleman intimately acquainted with the practical part of mining, says in his introduction to the work already quoted: "The whole business of mining is experimental; hardly a shaft is sunk, or level driven, but it is, as we properly say, for the purpose of trial" (p. xviii). What is applicable to a country so rich in the precious metals as South America is doubly so to Malabar, and the time consumed in sinking unproductive shafts would be another item in the balance-sheet which has not been noticed in the calculations, but which would materially diminish the profits.

III.—In the two foregoing divisions of the subject, the Committee have anticipated their decision on the third, viz., the propriety and utility of sending to England for machinery to work the mines. It will be seen that they are decidedly adverse to the measure; and they trust that the grounds on which they have formed their opinion have been sufficiently clearly stated, to carry conviction to the Board of its correctness. They consider they have clearly proved that the productiveness of the mines is by no means such as to warrant the outlay of a considerable sum with a very doubtful prospect of profit. But even did the precious ore exist in such quantity as to realize the golden dreams of the most enthusiastic speculator, the unhealthiness of the country in which the mines are situated would weigh as a powerful objection on the minds of the Committee against recommending the purchase of expensive machinery to work them. In the deep forests and jungles of Malabar during six months of the year, from April to October, a fatal form of fever arising from miasmata is apt to attack Europeans who venture to reside in them. Sufficient proof of this will be given in the appendix, and a forcible one exists in the letter, marked No. 5, from Lieutenant Nicolson. That gentleman has been thrice attacked with fever, and on the last occasion his life was despaired of for several days. Indeed, the Committee doubt if any European of skill and acquirements in science, sufficient to enable him to superintend the operations of mining, could be induced for any salary to remain in their neighbourhood during the whole year. The very time of his absence, too, would be that in which the mines could be most conveniently worked from the constant supply of water, and when also the machinery would be most likely to get into disrepair from exposure to the violence of the monsoon. Instances are not wanting to show how soon machinery in this country left under native management becomes totally useless, nor could natives of respectability from other parts of India be induced to undertake its superintendence, for their dread of the jungles exceeds that entertained even by Europeans. The Committee repeat that, if every other objection were done away with, and proved to be untenable in all points, this consideration alone would induce them to dissuade Government from entering upon the speculation.

Naught now remains to be remarked on by the Committee, except Mr. Nicolson's statement of the existence of gold on the Neilgherries, and his suggestion of the propriety of continuing the search in that direction. It has been already surmised that the original deposits of the precious ore are in the Koondah, Moorkoorty, and Neilgherry ranges; and if they were

discovered at a sufficiently great elevation, the argument founded on the unhealthiness of the country would not of course be applicable to them. But no proof has been adduced before the Committee of their existence; no veins have yet been traced in these mountain masses; and Mr. Nicolson rests his assertion on the vague report of a native, communicated to him in a letter, a copy of which is given in the appendix.

The Committee on mature consideration of all points, and guided more particularly by the conviction on their minds of the usual unprofitableness of speculations in gold mines, derived from a careful perusal of various works on the subject, do not feel justified in recommending the adoption of Mr. Nicolson's suggestion. But should there be a difference of opinion on this subject, and should Government consider it advisable to pursue the search for gold on the Neilgherries, they would beg to suggest the employment of some person, who to moderation and discretion in his views united general acquirements in science, and a practical knowledge of mining, resulting from personal experience either in Cornwall or in South America. It would be difficult to find such a person in this country, and the measure of bringing one from England with the requisite qualifications would entail considerable expense on the Honorable Company.

(Signed) F. CLEMENTSON,
Principal Collector.

(„) A. ROSS, Major,
Suptg. Engr., Malabar
and Canara.

(„) F. W. WARD, M.D.,
Acting Surgeon.

CALCUTTA,
25th May 1833.

APPENDIX.

No. I.

MINUTES OF EVIDENCE.

Examination of Cunniah, a Shroff, employed in the purchase of Gold for Government.

Q. How long have you been employed in purchasing gold for the Government?

A. I was first employed in June 1832, and since that time have been engaged in buying gold five months and a half.

Q. How much have you bought during that time?

A. Three thousand four hundred and thirty-two (3,432) new gold fanams' weight.

Q. At what rate did you purchase it?

A. I bought three thousand one hundred and thirty-two (3,132) new gold fanams' weight at the rate of $17\frac{1}{2}$ old gold fanams for 10 new gold fanams' weight, and three hundred (300) at the rate of 13 old gold fanams for 10 new gold fanams' weight.

Q. How many old gold fanams and how many new are there in a rupee?

A. Four old and three and a half new.

Q. How many rupees did you pay for the above quantity?

A. Madras Rupees one thousand five hundred and five and a quarter (1,505 $\frac{1}{4}$).

Q. What is the touch of the gold you bought?

A. That at $17\frac{1}{2}$ was $9\frac{1}{4}$, that at 18 was $9\frac{1}{2}$.

Q. Is this all the gold you could obtain during those $5\frac{1}{2}$ months?

A. Yes, it was.

Q. Where was the gold you bought obtained from?

A. Coopul, Mambaat, Carcatode, and Poonoor, all in the Company's territories.

Q. Did you buy any from the Teroopad's mine?

A. None; his price is higher.

Q. What quantity of gold do you think is obtained in a month from the whole of the Company's mines?

A. I think I could purchase one thousand new gold fanams' weight in a month.

Q. Could that quantity be actually collected from the mines in the space of one month?

A. Yes.

Q. From how many mines do you say this quantity could be obtained?

A. From eleven or twelve places.

Q. Are all those places in the Company's territory?

A. Yes.

Q. What is the name of these eleven or twelve places?

A. In the Ernaad taluq—(1) Coopul, (2) Mambaat, (3) Chatacottapooram, (4) Wallaroengal, (5) Carcatode, (6) Carava, (7) Tiryally, (8) Ariacodepcoory. In the Koormenaad taluq—(1) Poonoor, (2) Malapooram.

Q. Of all these places, where did you get most gold?

A. At Coopul during the monsoon, at Mambaat and Poonoor in the dry season.

Q. From your own knowledge how many people are employed daily in the Coopul mines during the monsoon?

A. About 250 or 300 daily.

Q. Do they work all the year round?

A. In the rivers they work in the dry season, on the sides of the hills during the monsoon.

Q. At the above ten places how many people obtain their livelihood by the search after gold?

A. I do not think there are more than five hundred altogether. They move about from place to place. Some are also cultivators and petty merchants, who only employ the time not occupied in other pursuits in the search for gold.

Q. Are coolies employed for hire in working the mines?

A. No. The parties who find the gold divide it equally among them daily.

Q. How much does one man obtain a day in this way?

A. I cannot say precisely.

Q. If 50 men were employed for three days, what would they consider a fair remuneration?

A. Half an old gold fanam value (two annas) each per day.

Q. Do they get more or less than this on an average?

A. Generally less.

Q. How many hours do they usually work a day?

A. From sunrise to sunset, with the exception of about an hour to their meals.

Q. Has any person become rich by mining?

A. No. There is no instance of a man employing coolies.

Q. Is it ever known that people desert other pursuits for the exclusive search for gold?

A. They had better be employed as coolies.

Q. Do shroffs ever advance money to the miners?

A. There is a Moplay, named Onnee Pekur Moodelliar, who is in the habit of advancing money to the Moplays on condition that all gold found is to be sold to him at the rate of (18) eighteen fanams for ten (10) new gold fanams' weight, and he generally sells it for 12 fanams.

Q. Do you think people would work the mines if a tax was levied on the produce?

A. Very few of them would.

Examination of Onnee Pekur Moodelliar, inhabitant of Pynaad, in the Ernaad Taluq.

Q. What is your occupation?

A. I am a cultivator and a Moplay priest.

Q. Are you in the habit of advancing money to the miners?

A. Yes.

Q. How long have you been connected with the mines?

A. Six years.

(N.B.—After these, various questions were proposed to him, but his answers were elicited with so much difficulty, and were altogether so contradictory and unsatisfactory, that the Committee directed him to retire without recording them.)

Examination of Moolacherry Kanen, an inhabitant of Nellamboor.

Q. How much gold do you think is found in the zillah of Malabar?

A. At Coopul about 50 persons only wash for gold, and I don't think they can get more than 100 fanams' weight in a month. I can only give information regarding the gold mine at Coopul, and am not aware how many persons are employed, and what quantity of gold is found in other places.

Q. Could the quantity you mention be found in one month?

A. I don't think that much gold could be found now.

Q. In how many places is gold found?

A. There is a hill on the south and another on the north of Coopul, on the summit of each of which there is a shaft, and it is there the gold mentioned by me is found.

Q. Are those places situated within the limits of the Sircar?

A. The two hills mentioned by me are the Jenum property of Manjery Teroopad and Nanempore Teroopad.

Q. In which of the places mentioned by you is most gold found?

A. On the shaft on the southern hill.

Q. Can you state with accuracy how many persons are employed there daily?

A. About 30 or 40 persons.

Q. Do they work at it the whole year?

A. I don't know.

Q. How many persons subsist by the washing of gold at the places above mentioned?

A. I think about 50 persons maintain themselves by it.

Q. Are hired coolies employed to wash for gold?

A. No.

Q. How many fanams' weight of gold do you think are found by each man per day?

A. I think a quarter of a fanam's weight.

Q. If 50 men work for three days, what quantity of gold must be found to be profitable to them?

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A. If they get 30 fanams weight they have no cause to be dissatisfied, but if less they will not gain by it.

Q. Will they, on an average, find more than that quantity or less?

A. They don't get more.

Q. How many nurrigas* will they work a day?

A. When they begin in the morning they work till evening.

Q. Has any person become rich by washing for gold?

A. Except maintaining themselves, I have seen nobody become rich.

Q. Are people in the habit of neglecting other occupations for the exclusive search after gold?

A. No.

Q. Are shroffs in the habit of advancing money to those who wash for gold?

A. The man called Moodelliar, an inhabitant, used to advance money, but no one else.

Q. What would be the effect of levying a tax on the gold found?

A. I don't think they would continue to wash for gold.

Examination of Coonata Ramaswamy Paniker, nephew of Ittoany Paniker, of Hindoo Shudra Caste, aged 71 years, Cultivator and Mookiesten of Coopul Deshom, Nellamboor Umshom, and Ernaad Taluq.

Q. How much gold do you think is found in the zillah of Malabar?

A. I am not certain as to how many fanams' weight of gold may be found. It is Oonnee Pokur Moodelliar, an inhabitant of Pynaad Deshom, Ernaad taluq; who employs Nairs, Moplays, and Tiers to wash for gold. He purchases all the gold that is found, and the best information can be obtained from him.

Q. Is gold found all the year round?

A. The washing for gold is carried on to a great extent in the months of Meethoonam, Karkadagom, and Chingom (June, July, and August), and in the dry weather also, but not so frequently.

Q. In how many places is gold found?

A. I know that gold is washed for in Aripaanaad Parramba, situated in Coopul, and in Mambant Umshom. In Teeroowally it used to be washed for five or six years ago.

Q. Are those places situated within the limits of the Sircar?

A. They are all situated within the limits of the Government lands.

Q. What is the name of the places where gold is washed for?

A. At Aripaanaad situated in Coopul, and at Manerooty in Mambant, but I do not know the name of the place where the mines are at Teeroowally.

Q. In which of the places mentioned by you is most gold found?

A. I do not exactly know.

Q. Can you state with accuracy how many persons are employed there daily?

* 2½ Nurrigas = 1 hour.

1 Nurriga = 24 minutes.

A. At Coopul 150 or 200 persons were daily employed in mining. I cannot say how many are employed at Mambant and Teeroowally, as I have not gone to those places.

Q. Do they work at it the whole year?

A. In the months of Kany and Toolam (September and October) about (50) fifty persons are employed; the rest are engaged in reaping the harvest and in cultivation. In other months they are all engaged in mining.

Q. How many persons subsist by the washing of gold at the places above mentioned?

A. As the miners are also cultivators, I cannot say how many maintain themselves by washing for gold.

Q. Are hired coolies employed to wash for gold?

A. Fifteen (15) men are required to work one pantty or tray for washing for gold, and the produce of their labor is divided equally among them. Nobody employs coolies for hire.

Q. How many fanams' weight of gold do you think are found by each man per day?

A. I cannot say, for the miners are not in the habit of telling how much they find.

Q. If 50 men work for three days, what quantity of gold must be found to be profitable to them?

A. I do not know; one quarter of an old gold fanam is necessary for a man's daily expenses.

Q. How many nurrigas will they work a day?

A. They begin four nurrigas after sunset, and leave off four before sunset.

Q. Has any person become rich by washing for gold?

A. The miners being inhabitants of Wallcowanaad taluq, I cannot answer that question. I have not heard of any man becoming rich by mining.

Q. Are people in the habit of neglecting other occupations for the exclusive search after gold?

A. The cultivators occasionally wash for gold.

Q. Are shroffs in the habit of advancing money to those who wash for gold?

A. Oonnee Pokur Moodelliar is in the habit of advancing money, but not the shroffs.

Q. What would be the effect of levying a tax on the gold found?

A. I am unable to say anything accurately on the subject. Those who wash for gold must be consulted.

Examination of Kalpally Caroonagara Menon, Pymaish Sheristadar, Principal Collector's Cutcherry, Calicut.

Q. How long have you known anything about the gold mines in the zillah of Malabar?

A. Since 1802 or 1803.

Q. In how many places is gold found in the zillah of Malabar?

A. In many places; but the principal in the Ernaad taluk are (1) in the beds of rivers Kutchambara, Kannamannah, Carcatode, Mamhat; (2) on hills Carambat, Errakirra, Coopul, Teeroowally, Arisoomada.

Q. How long do you think gold mines have been opened in that part of the country?

A. Some of them before Tippoo Sultan's time; all in fact mentioned above except Coopul and Teeroowally. Coopul has been opened only seven or eight years, Teeroowally four or five. These two were first discovered by the Moplas who search for gold in all directions.

Q. Were the mines ever farmed?

A. Major Macleod, the Collector, farmed them in 1803.

Q. What mines were farmed out?

A. All the mines in Ernaad above mentioned, except Coopul and Teeroowally.

Q. How long did they continue to be farmed?

A. Two years only, in 1802 and 1803.

Q. Do you know how much they were farmed for during those two years?

A. I think that the farm during that time produced 3,396 and odd new gold fanams.

Q. Do you know the actual quantity of gold extracted from the mines during those two years?

A. According to the account 7,150 new gold fanams' weight.

Q. Why did they discontinue the farm?

A. Another Collector succeeded Major Macleod, who upset what he did and discontinued the farm of gold.

Q. Was that the only tax ever levied on the gold mines?

A. From 1803 a tax, I think, of Rupees 33 a year was levied on every patty employed.

Q. How many people gain their livelihood by mining at the present time in the whole zillah of Malabar?

A. About 1,000 families, or about 5,000 people.

Q. Are these people engaged during the whole year exclusively in mining?

A. No; only when they have no other occupation. Some of them are coolies, and some are cultivators.

Q. How many patties are employed throughout the whole zillah of Malabar?

A. Those called patties are long troughs; the round basin-like utensil is called marriya.

Q. How many men are required to work one patty?

A. Two men. One day they collect the earth, the next they wash it.

Q. What is the size of such a patty?

A. About six or seven feet long and a little more than one broad.

Q. How much will these two men with such a patty find in one day?

A. From actual inspection I know the produce to be four barley corns a day at an average, twelve barley corns being equal to one fanam's weight.

Q. How many men work a marriya daily?

A. The marriya is never worked by itself. It is used to carry the earth

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from the mine to the patty, and at the end of the process when merely sand remains.

Q. Do the miners work all the year round?

A. No; they work just when they like.

Q. Where is gold found in the greatest quantity?

A. I think in Coopul.

Q. Could the mines at Coopul be worked all the year round?

A. Only six months in the year, viz., June to November. In other months they resort to the beds of the rivers.

Q. How many men are generally employed at Coopul?

A. From 400 to 500.

Q. How much gold does each man get a day?

A. Two persons at one patty will get four barley corns.

Q. What is the largest quantity you have ever known to be found in one day?

A. One fanam's weight, but very seldom.

Q. What is the largest grain of gold you ever saw?

A. The weight of a fanam's weight; but this has happened only two or three times.

Q. Does any rich man employ coolies to work the mines?

A. No, Oonnee Pokur Moodelliar advances money to the miners and two or three Moplas besides.

Q. How much do you think Oonnee Pokur Moodelliar buys in a month?

A. I do not know.

Q. At what rate does he buy gold?

A. Eighteen fanams for ten new gold fanams' weight.

Q. Why are so many fanams given for so much smaller weight?

A. Because the new gold fanams contain a very considerable alloy; in fact, little or no gold at all.

Q. How many hours must the two men work daily to obtain one gold fanam's weight?

A. From 7 A.M. to 6 P.M., taking the different departments in turns.

Q. Could coolies be obtained by the Company easily?

A. Yes; 4,000 or 5,000.

Q. How much would be the monthly hire of a cooly in that part of the country?

A. Three rupees a month.

Q. Where could the coolies be obtained from?

A. The Moplas, Tiers, and people of the country would be happy to work for the Company.

Q. Has any person become rich by mining?

A. Not one instance has come to my notice. The Teroopaad has made a little, but he has slaves to whom he gives nothing.

Q. If coolies can be so easily had, why does not Oonnee Pokur Moodelliar employ some at his own expense?

A. Because he would lose by it. He would be obliged to pay wages, and the workmen would be careless.

Q. Do you think that all the gold found near Nallambore is bought by the agent?

A. No; his price is too low.

Q. Where is it taken to be sold?

A. Principally to Pulgaht, Coimbatore, and Calicut.

Caroonagarn Menon's verbal answers on some points connected with the taxes on gold not having been considered by the Committee sufficiently explicit, and it being necessary to refer at leisure to documents in the custody to enable him to make them more so, a list of written questions was given to him, to which the following are his answers:—

Q. In how many places is gold found in Malabar?

A. In Ernaad, Wynaad, Koormanaad, Nedingannaad, Shernaad, and Calicut taluqs the washing for gold is carried on, but the principal places where this exists and where a tax has been imposed, are in the Ernaad and Wynaad taluqs.

Q. Mention the names of all the places where mines have been opened?

(The answer to this question has been already given in the report.)

Q. How long have they been worked?

A. In Ernaad and Wynaad taluqs the washing for gold was in use before the Honorable Company took possession of the country. In Coopul, Aripoonad, Teerobwally, Mambat, &c., it was begun within these eight or ten years.

Q. Were the mines ever farmed?

A. In 1834, 324 pautties were farmed out for 65 workmen in the above-mentioned 17 places in Ernaad taluq. In Shernaad taluq the places called Caraloondy and Purparangady have been farmed out since the last three or four years. In the accounts of Wynaad taluq for the year 1833 a sum of 360 pagodas is inserted on this account.

Q. If so, how long was the farm continued?

A. In Ernaad taluq the farm continued for two or three years; afterwards it was assessed to the revenue.

Q. How much did it produce altogether?

A. I cannot exactly say what it produced. However, it has appeared that in the 17 places in Ernaad taluq 7,170 fanams of gold will be found every year, from which, after deducting about 3,306 fanams' weight for the Sircar's share, the surplus would be sufficient to cover the expenses of working as well as to compensate the farmer, pay the Jenmakar's share, &c. I have heard it said that something more than 7,170 fanams' weight (which was the account given by the farmer and Koodians) has been the produce of this place; as to the produce of other places I have not obtained any account as yet. I have also heard that at Coopul, which is now the principal place where gold washing is carried on, 6,000 and odd fanams' weight, and at Caraloondy within 4,000 fanams' weight of gold will be found. As small quantities of gold are obtained by washing in many different places, which have not been included in the Government accounts, it cannot be accurately ascertained what quantity may be obtained.

Q. During the time the mines were farmed, what was reported to be their produce?

A. That 3,306 fanams' weight of gold was the Sircar's share, and the remainder that of Jenmakar, Koodians, and coolies.

Q. Why was the farm discontinued?

A. After the farm had been continued for two or three years it was ascertained how much gold would be found every year, and an assessment was fixed according to that produce. I have heard that this was the reason for discontinuing the farm.

Q. Has any tax been levied on the gold found?

A. In Ernaad and Wynaad taluqs a tax is levied, but in Caraloondy and Purparangady the gold dust is farmed out.

Q. How much has this amounted to?

	Rs.	A.	P.
A. Ernaad taluq	839	3	7
Wynaad do.	1,260	0	0
In Caraloondy the farm at present is	108	0	0
Total	2,207	3	7

Q. When was it remitted?

A. The whole has not been remitted. The tax on two pautties was suspended in favor of Edamannaad Tiroolpad in Fussy 1241, in consequence of the adyara (laborers) working on them having died.

Q. Do you know how many pautties are employed now in the whole zillah of Malabar?

A. I heard that of the pautties included in the accounts there are 22½ in Ernaad, about 40 in Wynaad, and above 30 in Caraloondy. Of those not included in the Jummah there are more than the numbers above stated, and I think there cannot be less than 200 pautties altogether besides round wooden trays, which will amount to about 500. I hear that in different places there are about 1,000 workmen and 500 round trays besides the above, and that the pautties included in the Jummah are worked by the Jenmakar's workmen, and the rest by Moplays and Tiers, the greater part Moplays.

Q. How much gold do you think can be obtained in a year throughout the whole zillah of Malabar?

A. It cannot be said with any accuracy what portion of gold can be obtained, yet I think that about 40,000 fanams' weight may be got in a year.

MEMORANDUM.

On reference to the accounts written at the time of farming out the mines in Ernaad taluq the Sircar's share in every 100 gold fanams' weight was 46, and the remaining 54 went towards paying laborers, &c. The average quantity of gold found by two people with one pautty in one day is four barley corns' weight; 12 barley corns are equal to one gold fanam in weight; at this rate, if 1,000 men work 500 pautties and wooden trays for eight months (four months in each year being deducted for absence on

account of sickness, feasts, &c.) they will annually find about 40,000 fanams' weight of gold.

(Signed) CAROONAGARA MENON,

19th March 1833.

Sheristadar.

(True translation.)

(Signed) D. WHITE.

Answers to additional Questions proposed to Caroonagara Menon.

Q. Is a tax now levied on the gold produced in Malabar?

A. Some of the principal spots are now taxed.

Q. What is the amount of this tax?

A. About Rupees 2,207 in the annual tax on pautties including the farm, viz., in the Ernaad taluq Rupees 839, in the Wynad taluq Rupees 1,260, and Caradoondy farm, Rupees 108.

Q. How is it levied, whether on the gold or on a certain number of pautties?

A. Agreeably to the difference of the quality of gold the pautties are taxed, but the spot, Caradoondy, is farmed.

Q. How many pautties are thus taxed?

A. There are about 75 pautties; the tax on them is about Rupees 2,099, and 30 and odd pautties are in Caradoondy and Parparangady in the Sherinaad taluq, and those pautties are farmed for Rupees 108.

Q. Does the Teroopaad pay any tax to Government?

A. He pays 800 and odd rupees for the gold mines, besides a considerable sum of money as revenue on garden and rice lands situated in different umshoms.

Q. Who is the Teroopaad?

A. He is a Saumunda, a caste lower than Shastrya.

Q. Is he perfectly independent of the Company?

A. He is a Nandwaye and a dependant of the Company.

Q. Does the land under him pay no tax of any kind to our Government?

A. He also, as others, pays the revenue on his lands.

Q. What is the extent of his territory.

A. He has lands in different umshoms in Ernaad taluq, but he now chiefly resides in Nellamboor Umshom in Vaddoor Hobily; that umshom is about 12 miles in extent.

Answers of Mr. Nicolson to written Questions proposed by the Committee.

From Lieutenant W. NICOLSON, Superintending Search for Gold, to the Principal Collector of Malabar, dated Calicut, 7th April 1833.

In compliance with the request contained in your letter of the 15th ultimo, I have now the honor to forward answers to the questions therein put to me by the Committee.

Q. Throughout what extent of country does gold exist in the zillah of Malabar?

A. As far as we have hitherto discovered, gold exists more or less throughout the whole range of ghauts, extending from Manaur to the neighbourhood of Tambercherry, but appears to be more plentiful about the centre of this range in the vicinity of Nellamboor.

Q. In what places more particularly have gold mines been opened by the natives?

A. As far as we have yet discovered, gold mines have been opened by the natives at Davalacotta, Nellyalam, Karoor, and Naadghanny above the ghauts, in the neighbourhood of Carembat, Moondairy, Manjeecont, Kutchambara, Yerakarra, and Coopul, in the Nellamboor valley, at Pooloor, Carcatode, Beeroucherry, Callowl, and Manarghant, further south, also near Tambercherry to the northward.

Q. How many of these are in the beds of rivers, and how many in other situations?

A. If those of all sizes are required, I cannot exactly say, for they are innumerable; the principal ones, however, I have laid down in the rough map now before the Committee.

Q. What mines do you consider could be worked with the greatest profit to the capitalist?

A. Of those already discovered I consider Coopul and Carembat the best for commencing with in consequence of the extent of work already accomplished, by which much future labor would be avoided; but I should think that all the mines, whose localities admit of being worked to a sufficient depth, would yield much the same profits to the capitalist.

Q. Is the situation of these profitable mines such that a European could live in their vicinity throughout the year?

A. That must greatly depend upon the particular constitution of the individual; generally speaking, I should think that many might live in their vicinity, and if in hale health perhaps at the mines. But I see no reason to doubt that mines will now be discovered on the Koondahs and Neilgherries at sufficient heights to preclude all danger from fever.

Q. If not throughout the year, during what months would his residence be safe?

A. From the 1st October to the 1st of April, in order to be certain of avoiding the first showers of the monsoon, in the months of June and July also, during the very heavy rains there would be little or no danger.

Q. Could natives from other parts of India who might be employed in working the mines withstand the climate for any length of time?

A. I have had little or no experience in this respect, except with the Pioneers, and my own servants who have generally stood the climate well during the months above mentioned, viz., from October to April, and I should think that, with proper precautions, natives from other parts of the country would soon become inured to the climate, although perhaps they might suffer a little at first.

Q. How long have the mines particularized above been worked by the natives?

A. It is impossible for me to say, as it is against the interests of the natives to give us the slightest correct information on the subject. I was informed last year by some very old slaves that Tippoo had caused some of the mines to be worked on his invading Malabar, but I could get no information that I could depend upon. The appearance of some of the mines would lead me to suppose they had been worked for a century.

Q. How many persons are actually employed at present throughout the zillah of Malabar or at the mines you have visited in the search for gold?

A. I have not had opportunities of obtaining correct informations on this subject; but, as far as I have been able to ascertain, I should think that about 4,000 or 5,000 are employed altogether.

Q. Is it known that persons connected with the mines have become rich? If so, particularize the names of the parties.

A. This is a subject which the natives have, of course, cautiously kept from my knowledge to the utmost of their power; but, as far as my inquiries have led me to judge, I believe that many of the head Moplays have made very large profits by working the mines even in the slovenly manner in which they carry on operations; amongst these the only names I have been able to ascertain are Attomay (a rich Moplay residing near Carcatode) and his brother, a Moodelliar, who buys nearly all the gold from the Coopul mines, also Massulyod, ryot, in Pynaad, and Caracaden Mamoo in Wallowanaad.

Q. Are the miners generally persons in easy circumstances? Are they enabled to procure more comforts than others? Or are they enabled merely to earn a daily subsistence?

A. The miners appear to want for nothing; they receive from the head Moplays whatever they can possibly require in the mode of life they are accustomed to from childhood; and they appear to wish for no more, since it frequently happens that with one lucky day's work they remain idle for ten. I have often offered them regular monthly pay for regular daily work, but they have generally refused, giving as a reason for so doing that they would not be tied down to work every day, nor longer in a day than they wished, as it often happens that three or four lucky hours will keep a miner for two or three days, until after which he will not return to his work; it is, therefore, their own fault if they do not earn more than a daily subsistence for themselves and families.

Q. Do they subsist by this search entirely, or do they occupy only a portion of their time in this way?

A. They give a portion of their time during certain seasons to the cultivation of grain, harvest, &c., without which provisions, &c., would become exceedingly dear for them; during the remaining months of the year they are employed at the mines.

Q. Does each man work on his own account, or are there any instances of capitalists employing coolies at certain wages per day or month? If the latter, particularize the instances which have come under your notice?

A. The head Moplays receive the gold found by each miner, giving to him and his family its supposed value in articles of food, raiment, &c., on which they charge enormous profits, so that the miners are much imposed upon by these maistries, for whom, however, they appear to have a kind of superstitious veneration. I have every reason to think that capitalists work many of the mines, but whenever I have attempted to inquire into the matter, or deputed natives to do so, I have always found the affair enveloped in such a veil of impenetrable falsehood and mystery, owing to the intrigues of the Terecopad and others, that I have never been able to ascertain the real truth.

Q. Could the mines be worked all the year round? How many days would the natives work in the year? And how many hours would they work each day?

A. The mines could certainly be worked the whole year round. How many days the natives would work in the year must depend on their castes, feasts, &c., but they might work nine hours a day.

Q. Have you ascertained the average quantity of gold found by each man daily?

A. Yes; the average quantity from the best shafts with the present mode of work is about the weight of a gold fanam daily with a good workman.

Q. Have you ascertained by experiment the number of grains of gold contained in a certain quantity of earth, say a cwt. or so?

A. No, for this is quite uncertain; but whatever percentage of metal may be supposed requisite in Europe, it must be recollected that mines worked in Europe require to furnish much larger profits than in this country in consequence of the difference of the price of work. Again, a small quantity of earth or ore can scarcely be taken as a criterion of the value of a mine, as it is impossible to say how long its quality may last. A trial of the average produce of a certain given time, say 12 months, compared to the expense thereby incurred, is the only method, in my opinion, of ascertaining the real value of the mines. One thing, however, is certain, that machinery once made will wash a ton of earth or ore at less expense than a cwt. is washed on the present drivelling system of the Moplays.

Q. How long have you had opportunities of observing personally the productiveness of the mines?

A. Altogether about ten months at different intervals.

Q. How many men have been employed under your superintendence? How long have they worked in the mines? And how many hours have they worked each day?

A. The only men regularly employed under me have been a Havildar's party of Pioneers, whose time has been almost completely taken up in carrying on the search for the best mines, cutting down the jungle, &c. When, however, they were employed in the mines, they worked about nine hours a day.

Q. What has been the daily produce of the labor of each man in grains of gold?

A. The average daily produce of one man was about three grains of gold, but it must be recollected they are complete novices at the work; as to the Moplas I found, whenever I employed them, that they would *wilfully waste the gold* (on purpose to mislead me) so as to find even less than a Pioneer.

Q. What machinery do you consider actually necessary to work the mines most efficiently? What part of it could be made in India? What would be actually required from England? What would be its probable cost? Be good enough to give the information here required in the form of a table.

A. The ordinary works and machinery requisite for working all gold mines are as follow:—

- 1st.—Mining tools.
- 2nd.—Windlass cranes and wheelbarrows.
- 3rd.—Steam-engine pumps.
- 4th.—Stamping-mills.
- 5th.—Cribbles and sieves for sifting the earth and pounded ore.
- 6th.—Floodgates, troughs, and rakes for washing it.
- 7th.—An apparatus for amalgamating and evaporating mercury with the least possible loss.
- 8th.—An apparatus for melting the metal in crucibles with the different fluxes.

Of the above numbers 1, 2, 4, 5, and 6 can be procured in India (*vide* table of machinery), but certainly not to be compared to those of English manufacture, while I should think the time, labor, and expense of making them up would be far greater, so that, if it is decided to send to England for any of the above, it would, no doubt, be far better to send for all. Their probable cost is beyond my immediate means of calculation. In all mining operations such matters are, I believe, left at first in a great measure to the judgment and economy of some competent agent who is interested in the undertaking, and who I presume cannot possibly form a *correct* estimate of the expenses to be incurred until after having fully entered into all the details connected with some of the mines in Europe or America, where similar works have been in progress, and comparing the result of such inquiries with the nature and localities of the mines in this country.

Q. What buildings would be required, and what would be the expense of erecting them?

A. The buildings required must entirely depend upon the extent of the works. The expense of erecting them would, however, be but trifling as masonry on *pise* and strong thatch would, I should think, answer very well.

Q. Would a reservoir for water be required, and at what expense could it be completed?

A. If the Coopul mines are fixed on for commencing operations, as there is no water at hand but what comes from the shafts, either a reservoir must be built, or the earth and ore must be conveyed to the river about a mile east of the mines which, on reflection, I think, would be better at first than going to the expense of building a reservoir, for if the mines are worked on a large scale, it is doubtful whether the water from the shafts would be sufficient, and as it is always muddy, it would require a much longer time to wash the earth

and ore than in a running stream; the price of building a reservoir, however, would probably be about Rupees 400 or 500.

Q. With this machinery how many men would you recommend being employed?

A. For every set of machines, as mentioned above, I should think 100 men sufficient, but the fewer the better in proportion to the machinery, for it must be expected that the greater the number of workmen employed, the greater will be the quantity of gold pilfered.

Q. From your own experience could a sufficient number of coolies be obtained among the natives of the country to work the mines for daily or monthly hire?

A. I should think that, although at first there might be some difficulty in getting a *certain* number of the natives to work *regularly*, still, as they would shortly see the advantages of machinery and the *advances*, labors thereby avoided, they would, no doubt, increase in numbers accordingly so as to furnish eventually a sufficient number of workmen for as much machinery as it might be found expedient to employ.

Q. What are the wages of a daily laborer per day or month in the part of the country where the gold exists?

A. About Rupees 3½ per month is what is generally paid to coolies, and 6½ Rupees to maistries.

Q. Aided by machinery what quantity of gold (in ounces) do you consider would be obtained daily?

A. I should expect that, with one set of machines where water is in plenty, about half a pound might at first be obtained daily, but the quantity might be expected to increase with the depth of the shafts.

Q. What would be the value per ounce of the gold, in Madras rupees?

A. The price paid at present at the mines is Rupees 55 per ounce in the Madras market from Rupees 50 to 55 per ounce troy (weighing Rupees 31) according to the demand for gold of this superior touch.

Q. In the present condition of the mines, could all the gold produced at the mines be bought for Government and at what price?

A. All the gold at present produced at the mines might, no doubt, be purchased on account of Government if trustworthy and really honest and zealous natives could be employed in procuring it, but this I fear, from my past experience, is totally out of the question; the price, as already mentioned above, would be Rupees 55 an ounce.

Q. How many new gold fanams' weight do you reckon to the ounce troy?

A. Eighty.

Q. Do you consider that the Government agent now employed at the mines has been enabled to purchase all the gold produced by the mines in the Ernad and Coormund taluqs; if not, be pleased to state your reasons for thinking so?

A. I am told that this man has not purchased in one month as much as I purchased myself in one day last year at Coopul only, since he talks of getting five and six gold fanams' weight only per day, whereas I have purchased more than an ounce in the same time. I cannot, however, at present purchase a fanam's worth in consequence, I have every reason to

believe, of the intrigues of this man with the head Moplays. And such are the profits of merely buying the gold from the Moplays that it is natural to suppose that any native so employed will purchase as much as he can on his own account and that of his friends, knowing detection to be so difficult, at the same time that I believe him to be in league with the Tercopaad to get the Sircar as little gold as possible, in order to endeavor to persuade Government that the mines are not worth working. There seems no reason, however, to doubt that gold and other metals would be found in abundance throughout the whole range of the western ghats should a more extensive search be entered into, which is much to be recommended before any of the mines already discovered are systematically commenced upon, as no doubt many more eligible spots exist as to climate, &c., high up in the mountains (vide the letter received from Appavoo Moodelly, now before the Committee), but whatever mines are worked, much the same machinery will be required so that it might be commenced upon at once; and should it be in contemplation to send for European miners, such as have been employed in the mines in Mexico (the climate of which is much the same as Malabar), it would, of course, answer better, in every point of view, than getting them direct from Europe.

A Table of such Tools and Machinery as are to be procured in India with their probable Cost and the Expense of working them compared to the probable Profits to be expected.

Tools and Machinery.	WORKING POWER.		Probable Prime Cost.
	Men.	Bullocks.	
Six chests of mining tools ...	24 workmen in the shafts.	...	RS.
One windlass crane, complete ...	4 do. ...	12	about 700
Twelve wheelbarrows ...	12 do. ...	...	200
One stamping-mill ...	4 do. ...	12	3,500
A set of troughs and rakes with a floodgate ...	12 do. ...	3	1,500
Twelve cribbles ...	12 do. ...	...	100
Do. iron wire sieves ...	12 do. ...	...	200
Do. carts for carrying earth to the river ...	12 do. ...	30	800
Maistries ...	3 do. ...	...	...
Total ...	100	60	7,000

Probable Monthly Expenditure.	Probable Monthly Income.
RS.	RS.
One hundred workmen, at Rupees 34. 350	Half a pound of gold per day, tray weight 6 ounces. 300
Sixty bullocks ... 300	Half a pound of gold per month, days 30 thirty. Gives a sum of ... 9,000
Smiths, carpenters, timber, iron, &c. ... 350	
Superintendence, foremen, &c. ... 500	
Total ... 1,500	9,000 monthly income.
	1,500 monthly expense.
	7,500 probable net monthly profits.
So that one ounce of gold per day (value Rs. 50) would pay the above expenses.	(Signed) W. NICOLSON, Lt., Supt. Gold Mines.

EXTRACTS FROM, AND COPIES OF, DOCUMENTS RELATING TO THE MINES.

Extracts of a letter to the Secretary to Government, Revenue Department, from Mr. Sheffield, Principal Collector, dated Calicut, 10th January 1891.

Though gold is found in all the rivers of this district from the streams which fall into the sea at Elatoor, about eight miles north of Calicut, and as far south as the numerous streams flowing through the Palghat valley, which at their junction, about 15 miles below Palghat, form the great Ponany river, some of which reach the southern boundary between Cochin and Malabar, about 110 miles to the southward of Calicut. The places and streams which afford the largest supply of gold dust are the following:—

The Toodakull river, which rises in the Koondah mountains and, after dividing the Walloowanaad taluq from the taluq of Neringanaad, falls into the great Ponany river at Moochickul, about two miles north-east of Tartallah.

The Arliparambur, a rivulet which flows through Walloowanaad and part of Neringanaad, and joins the Toodakull river about two miles east of Cherpoolecherry.

The Arnakyem river, which has its source in the Moorcoorty and Koondah mountains, and forming the boundary between the Ernaad and Walloowanaad taluqs, and passing the towns of Malapooram and Teror-rangady, it meets the sea at Caraloondy.

The Caratado stream which rises in the Moorcoorty valley and joins the Arnakyem river near Pynaad in the Ernaad taluq.

The gold found at the places above mentioned is the purest that is procurable in the district, its touch being equal to 9½.

The sea-beach from the town of Parparangady to Caraloondy and thence to Beypoor, extending about eight miles in length, the latter place being seven miles south of Calicut. Here the gold is equal to 8½, and it is evidently washed down from the mountains during the great freshes in the south-west monsoon, and after being carried out by the flood beyond the mouths of the Beypoor and Caraloondy rivers it is thrown back by the action of the surf, when the sea runs high and is much agitated by tempestuous weather, and deposited on the sands much higher up than the sea usually reaches when the weather is moderate.

Katchambara on the bank of the Coodarapoya river, which comes from the Moorcoorty valley, and unites with the Beypoor river about two miles below Nellamoor. The touch of the gold found here and in the bed of the Coodarapoya river is nearly 9½.

The Carnampoya and Peonapoya, or golden river, both which streams take their rise in a high range of mountains called the "Paral Mallah," situated north-east of Moorcoorty, and forming part of the main chain of the Neilgherries, and when collected in one body near Poellimparan in Wynaad, the stream receives the name of the Paudypoya, but this, on its approach

near the ghats, is again divided into two streams, and the main branch, called in the Nellamboor valley the Carumbye, rushes down the Allampully Cherrum. The Poornapoya descends the mountains between Allampully and the Caracoar Cherrum, and long before its junction with the Carumbye it receives both the Kellamunpoya and Caracoorpoya.

The Kellakumpoya and Caracoorpoya above mentioned; the former river rushes down from Wynaad into the Nellamboor valley through the Pandaloor Cherrum, and the latter descends from Davala to the right of the road through the Caracoar Pass.

Gold dust is also found on the plains in the Nellamboor valley, and frequently on elevated spots particularly at Theerocwally, a hill near Mambant angudi, about 150 feet above the level of the Beypoor river during the highest freshes, and on the slope of this eminence gold is procured some feet below the surface of the ground in pits dug by those who come in search of it.

North of the Beypoor river it is found in the Taeroowambadilly division of Polwy, in a mountain stream which, descending the ghats to the left of the road through the Tambarcherry Pass, runs through the Tambarcherry and Polwy districts, and forms a junction with the great Beypoor river between Pawoor and Shirwadde and opposite to Mapeorera in the Ernaad taluk. The touch of the gold found here and of that which is generally procured in the Nellamboor valley is about 8½. Above the ghats, in Wynaad gold is found in Parkmeetil, a higher tableland between Manantoddy and Namballacotta, at a place called Cheollyode in Moornamad and Nellyalom and Ponerry in Mooperyanaad; it is likewise found at Davala and its immediate vicinity in Namballacotta; but the gold of Wynaad is much inferior to that which is washed down from the lofty mountains actually appertaining to the Neilgherries and Koondals, its touch being only 7½.

There appears no reason whatever to doubt that golden ore is homogeneous to the soil in the mountains and hills of Malabar, and even many elevated spots in the valleys of Nellamboor and Moorcoorty, and the immediate vicinity of Davala and the Koondah and Neilgherry mountains, whilst that which is found in the beds of rivers and other mountain streams is fortuitously brought down by the monsoon rains.

Though a very extensive search has been made among the records of my office since I had the honor of receiving the commands of the Right Honorable the Governor, under date the 18th November 1828, to afford information on the subject, I regret to state that I have not succeeded in finding that any endeavor whatsoever was made by the several Collectors, since this province accrued to the possession of the Honorable Company, to discover the mines or places whence the gold issues; these, however, appear to have been noticed by the Hon. Mr. Duncan, late Governor of Bombay, who enjoined the authorities then in the province, in the year 1793, to collect and submit to him every information that could be obtained on the subject; but it does not appear upon record that any scientific person was deputed to explore the places where the dust is found, in order to trace the sources from whence the supplies are derived, or that any particular

inquiry on the subject was set on foot; though it has been well known from the earliest period, that gold is produced in the province, and the collecting of it has been farmed out in Wynaad and the Nellamboor valley for the last 40 or 50 years.

Extract of Answers attached to a letter from Mr. Sheffield, Principal Collector of Malabar, to the Right Honorable the Governor, dated Angadypooram, 9th January 1829.

Q. Can gold be procured in considerable quantity?

A. I am informed by the proprietors of the forest tracts where the gold dust is found, and by the persons to whom the privilege of washing for that valuable commodity is farmed out, that the quantity procurable annually below the ghats in the Nellamboor valley and from the Carcatode nullah may be estimated at 5,200 new gold fanams or 577½ star pagodas' weight, and that the quantity procurable annually in Wynaad may be estimated at 6,000 new gold fanams, or 666½ star pagodas' weight. The privilege of gathering gold is farmed out above the ghats in Wynaad for the sum of

Rupees 1,250, and below the ghats in Ernaad* for

* Exclusive of Carcatode where no tax has hitherto been levied on gold dust.

Rupees 927-15-4 per annum. In 1801 the gold dust in the Ernaad district was farmed for Rupees 1,408-8-0.

As a small quantity of gold is found in all the streams which run through the Nellamboor and Moorcoorty valleys, it is supposed that the mines from which it is washed are in the Nedoobettoc, Parimala, Neilgherry, and Koondah mountains, which extend in a south-westerly direction from Dhanaiguncotta, and from whence the Beypoor river principally derives its sources.

Extract of a letter from Lieutenant Nicolson, to Major R. Crewe, dated Cannanore, 28th March 1832.

In further continuation of my reports for the information of Government, I have the honor to acquaint you that another severe attack of jungle fever shortly after my arrival at Calicut rendered it necessary, in the opinion of the Medical Officer there, that I should be removed to this station in order to be in readiness to meet the probable necessity of my being obliged to embark on a long sea voyage, or for England, for the recovery of my health.

With regard to the gold mines which we have already discovered, and the best means of obtaining the greatest possible quantity of gold on account of Government, I beg to observe that it appears to me, first, that the only people who can be employed with advantage, on account of the insalubrity of the climate, are those who are resident at the several spots where the mines are situated, and who have been accustomed to the work.

Extract of an extract from the Minutes of Consultation, under date 31st August 1832.

As it appears from the memorandum annexed to Lieutenant Nicolson's report of the 17th July 1832, and from former statements, that he has

incurred considerable expense in prosecuting the inquiries entrusted to him last year; that his labors have been very successful; and that his health has suffered materially from fevers contracted in the jungles where he was employed: Resolved that he be authorized to draw from the treasury of the

Principal Collector of Malabar a monthly allowance of Two hundred rupees. 200 rupees, in addition to the allowance sanctioned under date the 15th February 1831, from the commencement of his employment, under the orders of Government of that date, and as long as he may continue to be so employed.

From Lieutenant W. NICOLSON, Superintending Search for Gold, to the President of the Committee for the Gold Mines assembled at Nellamboor, dated Coopul Gold Mines, 13th March 1833.

I am duly honored by the receipt of your letter of this date according to which I shall, of course, remain here and use every exertion in my power to meet the wishes of the Committee.

I beg to submit, however, that the chests of mining tools and the crane I have lately made up at Cochin (at my own expense), and which are now at Calicut, are necessary, as well as the pumps to carry on operations with celerity; and I have, therefore, the honor to request that they also may be forwarded to me.

I beg, however, to solicit the consideration of the Committee as to the lateness of the season and my dear-bought experience that there is no remaining with safety in these jungles beyond the end of March, until when, my health permitting, all the activity in my power may be relied upon.

From Lieutenant W. NICOLSON, Superintending Gold Mines, to the Principal Collector of Malabar, dated Calicut, 9th December 1832.

I have the honor to acknowledge the receipt of your letter of the 7th instant, and to inform you that I am proceeding without delay to Cochin, from whence I will forward the reports and information which you require.

I beg to enclose a letter (copy) from a native at Ootacamund, and have the honor to request its transmission to Government for consideration.

From M. APPAYOO MOODELLY, to Lieutenant W. NICOLSON, Superintending Search for Gold, dated Ootacamund, 5th December 1832.

Since your leaving the hills for Palghautcherry, I came to the knowledge of an individual who, for a considerable time, had intercourse with the natives of these hills, and was accustomed frequently to resort here for bartering. This individual has given me to understand that he could trace certain places on the hills where there are gold mines, and wishes only to be encouraged

for the purpose of discovering them, but upon certain conditions, which, could you be pleased to undertake in arranging these matters, he would adily proffer his services.

The scheme is as follows:—

1st.—Implements such as 10 pick-axes and 15 mamoties are to be provided by Government.

2nd.—An overseer to be appointed by Government as a check on him, who is to be paid at the rate of 10 rupees per mensem by the individual in question.

3rd.—The Tahsildar to be directed to furnish and retain on the spot as many laborers as the manager of this affair chooses, who will be paid regularly at his expense with this proviso, that the Tahsildar give him a daily receipt of money expended in paying the laborers and number employed.

4th.—Upon digging into a particular spot where a mine is expected to be found, should the object be frustrated by no discovery, the expenses incurred by paying laborers, &c., should be placed to his account; but should the undertaking be successful, these expenses to be placed to the account of Government.

5th.—Wherever a mine is detected, the proportion of gold dust contained therein to be duly shared by the manager and Government for a period of three years, after which time the profit arising therefrom to be wholly appropriated to the advantage of Government.

Such being the project laid down by this person, I am desirous to learn your opinion and such instructions you may be pleased to give or any additional arrangement to see how far he would accede to them, and therefore I respectfully solicit a speedy reply to prepare him to meet you at your arrival.

From E. SMITH, Esq., Sub-Collector, to the Principal Collector of Malabar, dated Calicut, 22nd December 1832.

I have the honor to acknowledge the receipt of your letter of the 16th instant, enclosing one to your address from Lieutenant Nicolson, regarding gold mines which are said to exist on the Neilgherry Hills, and requesting that I would make such inquiries as I considered necessary.

That such mines somewhere exist I think there is but little doubt from the quantity of gold that is found in the beds of the rivers below the hills, but I have myself questioned many of the natives, who seem to have no idea of any such thing. I regret that I was not able to find out Appayoo Moodelly, the writer of the letter to Lieutenant Nicolson, as I might then have learned more of the nature of his plans, imperfectly developed as they are at present, I do not think the Government would be warranted in giving him the assistance he requires to prosecute his search, particularly as he is at no risk whatever himself.

I would, therefore, suggest that Lieutenant Nicolson be requested to call upon the man for further information regarding his plans, and that the work, if found likely to succeed, should be prosecuted under the superintendence of the Officer Commanding the Neilgherries, who, from being on the spot, could, with greater facility, superintend the details and check in some measure the roguery which would be practised.

No. 1,122.

Extract from the Minutes of Consultation under date the 25th October 1833.

Read the following letter from the Acting Secretary to the Board of Revenue:—

Submitting copy of a letter from the Principal Collector of Malabar, forwarding the report of the Committee appointed to inspect and report upon the gold mines in Malabar. (Here enter No. 230, 6th June 1833.)

Order thereon.—Ordered that the report of the Committee appointed to inspect and report upon the gold mines in Malabar submitted with the above letter be recorded.

Report of the Committee appointed by Government to examine the gold mines in the zillah of Malabar. (Here enter 25th May 1833.)

Resolution thereon.—Having attentively considered the able report of the Committee, the Right Honorable the Governor in Council is fully convinced of the inexpediency of working the gold mines in Malabar on account of Government. Resolves that the proposed undertaking be abandoned. The services of Lieutenant Nicolson, who was employed in superintending the search for gold in Malabar, have already been replaced at the disposal of His Excellency the Commander-in-Chief.

FINANCIAL DEPARTMENT.

No. 286

Extract from the Minutes of Consultation, dated 30th November 1832.

Read extract from a letter to the Officer Commanding the Neilgherries in the Military Department, dated 23rd November 1832.

Ordered that all papers hitherto recorded in the Public Department on the subject of the employment of Lieutenant Nicolson and Mr. Hugonin in

search of gold in the province of Malabar be transferred to the Revenue Department, whence orders upon all future references connected therewith will be issued.

(A true Extract.)

(Signed) H. CHAMIER,

To the Revenue Department.

Chief Secretary.

No. 1,100.

Extract from the Minutes of Consultation under date the 11th December 1832.

Read the following Extract from the Minutes of Consultation in the Financial Department:—

Ordering the transfer to this department of all papers hitherto recorded in the Public Department on the subject of the employment of Lieut. Nicolson and Mr. Hugonin in search of gold in Malabar, whence orders upon all future references will be issued. (Here enter 30th November 1832.)

Order thereon.—The papers which accompanied the foregoing extract are ordered to be recorded.

From F. CLEMENTSON, Esq., Principal Collector of Malabar, to the Secretary to Government, Revenue Department, Fort Saint George, dated 21st May 1834, No. 32.

With reference to the 2nd paragraph of Mr. Secretary Chamier's letter, under date the 4th January 1831, conveying the orders of the Right Honorable the Governor in Council to collect as much more gold dust as can be obtained, I do myself the honor to submit an account showing the quantity purchased, since the account rendered by Mr. Sheffield in his reply of the 10th of that month, at the several mines and streams at which gold is found in this district, amounting in the aggregate to 12,727½ new gold fanams' weight, equal to 159 oz. 43½ gra. Troy weight.

2. The price paid for the above quantity of gold dust is Rupees 5,566-8-2, and, as it has been necessary to employ a small establishment exclusively for the purpose of purchasing the very limited quantity daily procurable, the charges on this account amount to Rs. 294-4-8; total Rs. 5,860-12-10, which gives an average of Rupees 4-8-8½ per every 10 fanams' weight of

Rupees 4-13-5 per gold, or Rupees 4-13-2 per cent. below the price* 10 gold fanams' weight. quoted in the 2nd paragraph of Mr. Sheffield's letter above adverted to.

3. As Government have deemed it proper to abolish the establishment for searching for gold mines, I have discontinued purchasing the gold dust pending the further orders of the Right Honorable the Governor in Council.

4. Independent of 12,727½ fanams' weight of gold dust purchased since Mr. Sheffield's departure to England there is in the treasury under my charge a quantity weighing 2,908½ fanams made over by that gentleman; * 195 oz. 214½ grs. Troy total 15,635½ fanams' weight of gold dust, which cost weight.

Rupees 7,187-9-0. I accordingly request I may be favored with the orders of the Right Honorable the Governor in Council regarding the disposal of the same, as also with special sanction for the amount disbursed, viz., Rupees 5,860-12-10.

5. I further take this opportunity of soliciting the orders of Government respecting the disposal of the six chests of miners' tools and four cases of cylinder pumps and leaden pipes forwarded from the Presidency in October 1832, for working the mines, and the two chests of miners' tools which Lieutenant Nicolson brought from the Neilgherries, supplied to him from the public stores at Madras under the orders of Government, dated the 15th February 1831.

No. 473.

Resolved to sanction the disbursement of Rupees (5,860-12-10) five thousand eight hundred and sixty, Annas twelve, and Pice ten expended by the Principal Collector of Malabar in the purchase of gold dust, including charges for a shroff and other persons employed in procuring the same and cooly-hire.

2. Resolved, further, that the Principal Collector be authorized to sell the whole quantity of gold dust collected and deposited in his treasury, weighing 15,635½ gold fanams, if he can obtain a price which will cover the prime cost and charges; if not, he will apply for further orders.

3. The miners' tools, cylinder pumps, and leaden pipes, specified in the 5th paragraph of the above letter, will be delivered over to be kept in the Arsenal at Cannanore.

Fort Saint George,

4th June 1834.

(Signed) D. SMITH,

Offg. Secretary to Government.

No. 1.
Statement showing the Quantity of Gold Dust purchased by Order of Government, dated the 4th January 1831, and lodged in the Treasury of the Principal Collector of Malabar.

Description of Gold Dust.	Quantity purchased Weight in new Gold Fanams.	Rate per 10 new Gold Fanams weight.	Amount paid.	Establishment and Contingent Charges as per Account No. 2.	Total Cost and Charges.	Average Price per 10 new Gold Fanams weight including Charges.
Caracoto in Ernad	785½	2½	366	8	7 0 4 0	8½
Perumbil in do.	1,553	4	310	11	5 4 0	9
Coopal in do.	2,981½	4	1748	5	8 3	...
Peenoor in do.	953	4	488	8	7 0 0 8	...
Nellamoor in do.	536½	4	254	13	7 0 0 8	...
Caracoto in Shornad	112½	4	50	10	10 0 8	...
Manabast in Ernad	1,542	4	674	10	10 0 8	...
Nambellacotta in Wynnad	3,029½	4	1,257	10	10 0 8	...
Total	12,727½	4 5	11,145 5 566	8	21	8½
Add Gold Dust made over by Mr. Sheffield on the 10th Jan. 1831	2,908½	...	1,325	6	2	...
Grand Total	15,635½	...	6,892	14	4	...

* These were purchased early in 1831, when prices were high.

E. E. F. CLEMENTSON,
Principal Collector.

Account Particulars of Charges incurred on account of Extra Servants employed for procuring Gold Dust at the several Mines and Streams in the Province of Malabar.

		RS.	A.	P.
By Cash paid to 1 Shroff, his pay from 14th November 1832 to 15th February 1834, at Rs. 9-12-9 per month...		146	15	3
Do. to 1 Kolkar, from 28th July to 14th September 1832, at 4 Rupees per month		6	6	1
Do. to 1 do. from 29th July to 18th August 1832, at 4 Rs. per month		2	11	3
Do. to 1 do. from 1st to 14th September 1832, at 4 Rs. per month		1	13	10
Do. to 1 do. from 2nd August to 14th September, 1832 at 4 Rs. per month		6	11	8
Do. to 1 do. from 10th August to 14th September 1832, at 4 Rupees per month		4	11	2
Do. to 2 do. from 14th November 1832 to 13th February 1834, at 3 Rupees each per mensem		30	0	0
By Cash, being cooly-hire for conveying at ten different times 4,000 Rupees worth of copper pice from the Huzur Treasury to the several places at which gold dust was daily purchased in small quantities		36	15	5
Total Rupees two hundred and ninety-four, Annas four, and Pice eight.		234	4	8

P. B. C. B. M. F. T. S. O. B. R. M. E. N. T. S. O. N.
Principal Collector.

செப்பன்ருபவர் பெயர்
பா. சுகுமாரன்
செப்பன்ருதற்காக எடுத்த
கொள்ளப்பட்ட நாள்.
1993
செப்பன்ரு முடித்த நாள்.
2001
செப்பன்ரு முடித்த நாள்.
2001
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