Revenue Department

Minutes of Consultation

27th July 1858

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Order No 10407/27th July 1858

பாதுகாக்கும் பிரிவு

செப்பனிடுபவர் பெயர்: ஏ. அவாலிவேல்

செப்பனிடுவதற்காக எடுத்துக் கொள்ளப்பட்ட நாள். 8/08 — 11/08

சரிபார்க்கும் முதல் முறையாள கையொப்பம்	சரிபார்க்கும் 2ம் முறையாள கையொப்பம்	ஒப்புக்கி உதவியாளர் கையொப்பம்

Fort Saint George, Revenue Consultation of 27th July 1858.

No. 67. Read the following Extract from the Minutes of Consultation in the Public Department under date the 14th July 1858, No. 890.

Read the following letter from P. W. WALL, Esq., Mineral Viewer; to T. PYCROFT, Esq., Chief Secretary to Government, Fort Saint George, dated Bangalore, 11th June 1858.

Sir,

I have the honor to inform you that in accordance with the instructions of Government conveyed to me in the Extract from the Minutes of Consultation No. 435, dated 3rd September 1857, I have during the past season been engaged in the examination of the Kurnool and other portions of the Ceded Districts in reference to the Silver Lead Ore and other Minerals of those localities and to submit herewith a report of my investigations thereupon.

Report on the Silver Lead Ores of Kurnool and other portions of the Ceded Districts.

In the previous communication I have had the honor to make in reference to the Lead Ores that had reached Madras, I alluded to the per-centage of silver contained in the mineral from one of the localities as being much larger than the average of those ores worked in England and in consequence as being worthy of further attention being directed to.

The chief point therefore to which my attention has been directed in my investigations, during the past season has been to ascertain the circumstances under which the mineral existed, if there were reasonable grounds for presuming it was to be obtained in any quantity, and what were the general conditions under which mining operations would be able to be conducted in the several localities in which it occurred.

The following are the names of the places visited by me at or near which the mineral under consideration exists.

Coilcontlah in the Dhone Talook of Kurnool, Gazerpully in the Nundial Talook of the same district.

Jungumrauzpillay Village and Ghaut.

In the Bundwail Talook of Cuddapah and Buswapoor in the Dhoor Talook of the same.

In addition to the above places, search which I directed to be made in a range of hills called Lunkamulla immediately south of the last named place has been successful in finding the mineral in considerable quantity. It was however only brought to me after I had left the district, and I was not able to visit the spot.

Coilcontlah is situated about six miles to the west of the village of Dhone in the Talook of that name, the site where the lead ore occurs is ¼ mile south of the village.

The surface of the country in the immediate neighbourhood is exceedingly rugged occasioned by the protrusion of granite hills rising to an extreme height of about 500 feet above the level of the main adjoining valley; Dykes composed of felspar, porphyry and trap intersect the granite forming low hills; well marked on account of their dark color in continuous ridges through the country; being apparently of less decomposable matter than the enclosing rock, they have been left protruding from it as now seen; these dykes have a general direction east

and west and extend over a large portion of the Ceded Districts, they become more numerous farther southward. At Pennaconda in the south division of Bellary they form a very marked feature in the appearance of the country on account of their number.

In addition to the above there is a large quartz dyke passing near the site of the lead mine as well as one of the same material enclosing large quantities of specular Iron seen near the public bungalow at Yeldoorty 12 miles distant from Coilcontlah, these like the trap dykes have a general direction E. and W.

The hills about Coilcontlah are for the most part very bare of timber ; a low brushwood occurring at intervals only on their sides.

In the valley between these hills a considerable thickness of and resulting from the washings of their sides covers over the rugged surface of the rock beneath, the inequalities in which form natural reservoirs for water ; into this sand the Natives dig their wells for agricultural purposes and obtain an abundant supply of water through nearly the whole of the dry season ; the sinking of one of these pits was the occasion of the discovery at this place of the mineral now the subject of consideration.

The water thus occurring and in considerable quantity was a source of much inconvenience to me in endeavoring to examine the ore "in situ" as it would also be in any subsequent mining operations, and much increase their cost especially as the nature of the ground offers little or no facility for assisting the drainage of under ground works by means of an adit level.

On my arrival at Coilcontlah in the beginning of January I found the water in the lead pit standing at between two and three feet only beneath the surface of the ground. I therefore availed myself of the little fall in the surface of the valley and cut a small channel, by which I was enabled to lower the water surface five feet and proceeded thence by such Native appliances as the district afforded to lift out the remaining water to examine the ground from whence the ore had been procured.

Upon reaching the bottom of the pit and clearing it of the rubbish that had accumulated I found the ore to occur in a well marked vein capable of being distinctly traced as far as I was able to lay bare the enclosing rock from the surface sand with which it was covered ; about 12 feet of this sand here covers the rock, this and five feet in depth of the vein or rock had been previously excavated no doubt for the purpose of obtaining the mineral it contained.

At the extreme north corner of the pit the vein has a width of 2 feet 9 inches, thence southward it rapidly increases within 2 or 3 feet of distance to a width of 4 feet and continues to expand throwing out numerous threads or pipe veins, the main one becoming less rich in ore and eventually towards the south corner totally devoid of it ; in the opposite direction the vein appears suddenly to contract to a few inches only in width, my excavation there did not reach the same depth as where the vein has its greatest width.

The vein generally is well defined by its walls of clear amethyst quartz, it does not however contain metal throughout even the short length I was able to examine it ; thus in the upper part at the north corner of the wall these walls enclose a white China clay only. The gangue enclosing the metal is a bluish quartz, compact but exceedingly full of joints and fissures at which the stone is colored with oxide of iron resulting from its decomposition ; it is on this account not difficult of excavation, the stone is easily broken also when first excavated, but hardens much on exposure when it becomes very tough and difficult to break.

The ore occurs variously intermingled with the quartz gangue or in large cubical crystals giving the stone a porphyritic appearance, in other parts of the vein large masses of pure ore entirely free from the gangue are able to be extracted.

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After getting the level of the water in the pit sufficiently low to examine the vein I caused the pit to be deepened about the three feet and the ore from a length of six feet of the vein to be broken, picked and sorted. It yielded.

9 cwt. 3 qrs.	of first sort containing by estimation...	75 per cent.
6 „ 0	second do. do.	33 „ „

the result after properly dressing therefore would be per fathom 9 cwt. of ore.

The direction of the vein is nearly due north and south towards the south corner, its tendency is more towards the S. E. it has an underlie to the east apparently about 75° but in places it is nearly vertical, the strings branching out from it incline 30° or 40° only to the horizon.

Following the direction of the vein as indicated at the well, I found on examining the surface of the rock where it became exposed about 600 yards from the pit on the north side of it, a further outcrop of the vein traceable for about 20 yards ; it here consists of little more than the crystal walls varying in thickness from 1 to 3 inches ; at intervals of a few feet however there occur numerous holes and which have every apperance of having been made artificially no doubt, the lead ore occurred here and these cavities have resulted from its removal.

On the south side of the pit I was not able to detect any signs of the vein in the numerous granite hillocks with which the ground is studded near the well, nor in the more elevated hills beyond.

The site near Gazerpullay at which lead ore was found is about 7 miles to the north east of the village, it lies some considerable elevation on the range of the Nullimulla hills and is in the midst of a very thick bamboo jungle which appears to cover the whole of these hills ; the spot is marked on the Ordnance map of the district as a lead mine and must at one time have been one of some importance as there are now still existing the remains of what may be considered for native undertakings very extensive workings.

These consist of number of pits varying in depth from 10 to 25 feet with galleries now fallen in, but which no doubt connected the pits and had extensive ramifications, more than 100 of these pits were counted, the working pits were confined to a comparatively small area but numerous trials had evidently been made at some distance from the main seat of operations.

The ground in which these pits are sunk is for a few feet immediately beneath the surface a highly crystalline sandstone, they then pass into a dry and a very firable argillaceous compound ; the sandstone resting upon this dry clay, has been at this point upheaved by some force beneath it as the beds under which it lies are shewn by the various depths in the pits at which the sandstone ceases and dry clay begins to dip in opposite directions from it along a line having a direction somewhat to the east of north, in this dry clay the galleries have been executed and no doubt the lead found.

The sandstone forming the sides of the pits has been very much loosened and broken by exposure, so that without more skilled labor than I had at command I was unable to render any one of them sufficiently safe for a man to work in, or it would have been exceedingly desirable to have sunk a little deeper at one of them as well as to have cleaved out some of the galleries as owing to the great quantity of debris accumulated in them I was not successful in making out the vein of ore there is every reason to believe exists here.

The general circumstances here have some analogy with the occurrence of lead ore at the third place I shall have to describe and which I shall allude to hereafter.

The jungle about the mine is very thick and much frequented by tigers, it was with some difficulty that coolies could be obtained to proceed to the place at all ! water is procurable about one to two miles from the mine, but it has the reputation of being liable to give fever. All for the use of the coolies had therefore to be carried from Gazerpullay or Buswapoor the nearest village.

The jungle contains some fine teak timber, a material well adapted for the requirements of mining operations in supporting the sides of shafts and roofs of headings.

The situation of the mine on an elevated spot is favorable to the execution of works for drainage, so that some depth might be reached without the necessity of any arrangements for the pumping out of any water encountered during progress.

The rock is loose and easy of excavation, so that although there exists some inconvenience as to situation in being in the heart of so thick a jungle, there are many assistances towards the execution of mining works at this spot.

A small trial shaft here would soon prove if the spot that has been formerly worked by the Natives is the actual site of the vein, the aid of a party of Sappers would be requisite for the purpose as it would be quite unsafe to set ordinary coolies to excavate in a position requiring careful attention in timbering shaft or galleries to prevent their falling in.

The lead ore that has been lately found here, appears to be the debris of a mineral vein existing somewhere in the locality and deposited in its present position by the action of water, it occurs on the hill side and within a few yards of the pits above mentioned and upon digging down it is found intermingled with fragments of the rock of the country and ceases as soon as one reaches the solid rock in position.

The ore is enclosed in a gangue of sulphate of baryta or heavy spar also occasionally in white quartz, it is as at Collcondah a sulphuret of lead or galena and there are here as at that place occasionally small admixtures of copper (sulphuret) zinc, blende and iron pyrites.

The third locality for this mineral is near Nundeallumpett in the Dhoor Talook of Cuddapah.

The mineral here occurs at three points extending over a length of four miles, viz., at the village of Buswapoor on the west side of the ghaut, on the top of the Jungumrauzpullay pass, and near the village of Jungumrauzpullay on the east side of the ghaut; at all these places there is a marked uniformity in the character of the rock in which the ore occurs being in fact one vein or lode extending for the distance.

The directions of the lode at the several places of occurrence corresponds with the general directions passing through the three points and is a few degrees east of north.

The lode appears to be of very considerable width, northward from Buswapoor it divides into two branches, it is possible that two veins may exist at Buwsapoor but it is not observable on the surface.

The rock of the country is a clay slate passing frequently into a quartzose schist; it dips to the E. or E. N. E. at about 40° to the horizon occasionally much more inclined, the strike of the shale being N. N. W. and S. S. E. with which direction the lode nearly conforms.

The lode is composed of a very hard and compact quartz rock of a dark grey colour; through this the lead is disseminated in minute grains; this however is its character at 10 or 12 feet from the surface; more immediately, on the surface the rock has somewhat the character of a very course breccia composed of fragments of a porous argillacious stone and of the grey quartzite cemented together with siliceous matter.

The whole body of the vein at the surface has a course cellular structure with large cavities running irregularly through; it lining these cavities lead ore is found and at Buswapoor seems is the only part of the vein that the natives have searched for it; this substance although differing in composition and appearance is the "Gosson" of Cornish Miners and its marked character here as with them is of great service in enabling one to trace out the course of a mineral vein; fragments found in the soil at the surface being a sure sign that the vein is not far off.

The dry pulverulent clay I have mentioned as occuring immediately beneath the sandstone at the lead pits near Gazerpullay has some resemblance to the argillaceous breccia the out crop of the vein at Jungumrauzpully and places contiguous which substance in a state of decomposition it appeared to me; its being overlaid by the beds of sandstone which have been affected by it instead of bursting through these rocks to the surface is rather against the presumption of its being a mineral vein, were it not that a similar example is seen near Nundiallumpett, at which place the vein becomes suddenly concealed by the clay slate through which it has elsewhere pene-

trated, this appears to occur at several places along the line of this vein, its existence beneath the slate was proved by slight excavations.

At Buswapoor the earth is cleared out of the cavities of this surface rock by the natives and lead detached from their sides; occasionally they seem to have broken away a little of the rock where two cavities have been worked near to one another, beyond this their efforts have not extended.

On the Jungumrauzpillay pass it is far otherwise; here appear to have been executed some extensive workings.

They consist of a number of pits, many of the depth of 20 or 25 feet; from the bottom of these horizontal and inclined headings or galleries have been carried in various directions following the indications of the mineral.

These galleries in some cases extend 50 and 60 yards uniting one or more of them; all the excavations seem to have been effected by firing the rock, a labour which in pits so close and confined must have been very trying even to natives as well as tedious and costly.

The indications of lead in these workings are very scanty, there are however many places in the present exposed surface of the rock where traces can be observed.

The vein has the same structure at the surface as at Buswapoor and like it is similarly compounded; these charcters are also distinctly marked at a third place where the vein crops out on the east side of the ghaut close to village of Jungumrauzpillay, here ore is seen in the rock but very minute portions.

One or two insignificant pits have also here been sunk at this place.

In the opposite direction or south of Buswapoor about a mile from it there are indications of the vein in pieces of lead that have been found in the debris at the surface, I observed also many lumps of the argillaceous breccia scattered about. I did not however succeed in meeting with the out crop of the vein itself.

Observing however the uniform course of the vein, I directed my search further to the south in a range of high hills named Lunkamulla.

It was not however till some time after my departure from Nundiallumpett when I had established my camp during my operations in this locality that I received intelligence from a Goomaster acting under my instructions of his success together with the samples of the ore; I had not therefore an opportunity of inspecting personally this spot.

Upon examining these samples of ore I found a very large admixture of copper with the galena; galena is usually associated with copper but the abundance of the latter material in these samples lead to the inference that the vein on being worked would attain an importance on account of the copper.

From the investigations I have made and above detailed it would appear that in the districts in which they have been prosecuted there exists a series of mineral veins the individual examples as yet discovered being of some extent and having a uniform direction of north and south and that analagous to the great Cornish mining district of England there are here also a series of non-metaliferous veins or dykes running through the country and crossing the former nearly at right angles to them, the directions here however being the converse of those of Cornwall, where the metal yielding veins are east and west the unproductive or cross courses north and south; as it is not usual for mineral veins to occur in isolated examples in a district it is fairly to be presumed that here others accompany those now discovered.

In respect to the profitable working of the veins now known; every thing would depend upon their productiveness in ore in working and although I have above stated an amount I extracted from a defined length, no conclusions are to be drawn from it of any future yield.

The chief value to be attached to them must of course be on the large per centage of silver which has been shewn to exist in parts of the vein; as regards the value of the lead, it is not probable that however productive in the crude ore a mine in either of the places named might prove, the mineral could be profitably worked for this metal only as an article for commercial export for the requirements of the country, however the present market price of pig lead in Madras viz. £ 29-10 (average) per ton offers an ample margin for profitable working to meet these demands if not too limited in amount.

As the Government for Military purposes are large consumers of this material, it would appear to me very desirable that some small works partaking of the nature of exploring operations but at the same time with the view of supplying their Arsenals, &c., with lead were to be undertaken by the Government, by these means more satisfactory evidence would be obtained upon which to establish works on a larger scale either by the Government on its own account or by any party of adventurers who might think favourably of the circumstances.

I am informed by the Inspector General of Ordnance and Magazines that 100 tons of lead are annually required for the use of the Army.

In hard ground it is estimated that a vein of lead having width of 3 or 4 inches or that proportion of ore desseminated can be profitably worked: a heading or gallery five feet in height along such a vein would yield 4,000 lbs. of ore, or somewhat above one ton of metal when reduced for every six feet in length, 200 yards therefore of such a heading, would give 100 tons of metallic lead.

It would be desirable to sink a small shaft at the bottom of which such a heading could be executed; at Coilcontlah arrangements for pumping out the water would be requisite, with two sets of the pumps in use in the Department Public Works a depth of about 20 yards from the surface might be reached.

It was my intention to have arranged for exploring operations of this nature at Coilcontlah in my late survey; but I was unable to do so without personally superintending such which would have prevented my giving the requisite attention to the other places I required to inspect.

With respect to the establishment of mineral mining in this country the absence of any class of skilled labor at all approximating to that of the miner must offer a serious drawback with any parties who might on all other considerations think favourably of the circumstances for mining adventures in Southern India.

The preliminary exploring operations undertaken by Government whilst giving some more sure grounds for the establishment of works on an efficient scale would be the commencement of giving a few men some experience in the mechanical part at least of the work.

In the further operation of dealing with the mineral after extraction from the mine consisting of picking, dressing and washing and chiefly of much detail manipulation performed by women and children; the cheap labour of this country would be much in its favour also as to the smelting and subsequent parting of the silver there are no points from which any difficulty incidental to this country is to be expected; the establishment for such operations would require to be fixed in some central position to draw supplies of ore from the various points and at the same the supply of timber for fuel; the amount of fuel required for reduction of the ore being 10 to 15 cwt. for each ton of lead reduced.

Iron making at Roodrar.

The country which may be described under the name of the Roodrar Iron district extends for about 25 miles north of this place; Iron making seems to have been carried on in former times at nearly all the villages immediately skirting the eastern side of the Nullemulla hills.

The following are the names of a few of the places where furnaces were in blast or only recently stopped, from local causes at the time of my visit.

Sultanpett	Roodrar.
Varsapoor.	Kumbulnoor.
Serinapoor.	Madaypoor.
Kuddamal Callwa.	Gallchinpollium.

The ore and fuel are drawn from the neighbouring hills where both exist in considerable quantities, the jungle at each place in these hills that I visited being most dense.

The ore throughout appears to be of one uniform variety, viz. the specular ore often micaceous; it is mostly obtained from near the highest ridge of the ghaut and very far into the jungle the natives dig only a few feet below the surface for it preferring to seek a new spot when the ore becomes compact and difficult to extract; this he is readily enabled to do from the extent it seems distributed.

The best qualities obtained are the rolled stones dug out of the surface soil as in the action by which they have been deposited they have experienced a sorting in proportion to their specific gravity and are easily gathered.

These rolled fragments appear to exist in greater or less amount over the whole of the eastern side of the hills above Roodrar.

Amongst these hills furnaces are worked during the hot season, the workmen remaining in the jungle during this time and proceeding to the village during the wet weather.

The Bhoy or Hunter caste are the only men that engage in the jungle work.

The ore "in situ" exists in a vein traversing clay, slate and schistose sandstone which forms the general character of these hills, on their eastern side from Cuddapah to the Nundicunnama ghaut.

The ore is brought to the furnace on the backs of buffalos, the charcoal by the coolies engaged in cutting and burning it; the furnace is of the form which appears to be universally copied in the various Iron districts of India and is described in the reports of the Madras Museum.

The ore is first worked up into rough balls which are cut in two pieces, each piece separately reheated, forged and subsequently welded up into bars of any required size.

1 Buffalo load ore..... 75 lbs.
3 Cooly ,, charcoal... 108 ,, } Yield one split ball.

this is subsequently worked up into a bar of the weight of 10 to 13 lbs; 5 to 6 being so worked up in a day by the expenditure of 3 cavady loads of bamboo charcoal:—5 men are engaged at the furnace, 2 of whom work the bellows, being relieved at intervals.

Four balls are produced in the ordinary course of things per diem from one furnace.

The merchant pays by advances, &c., to five men who go to the jungle to dig the ore and afterwards work the furnaces; to each man, per mensem Rs. 4, in which time they must deliver him 96 balls.

The coalmen for cutting, burning and delivering the coal for each lot of 4 balls receive one Rupee.

For working up these balls or blooms into bars.

	Rs.	Fs.
One Smith at per diem.....	6	0
Four Hammermen each at...	2	8

these men work up eleven ½ blooms into merchant bars in the day.

In addition to the above the merchant makes annual presents of;

Rs. 20 to the charcoal burners,
,, 6 the furnace men.

he calculates on receiving 4 to 500 blooms in the season.

His outlay for each lot of 96 blooms will be;

Furnace men.....	Rs.	20
Charcoal.....	,,	24
Forgemen...	,,	10
Coal consumed by ditto	,,	1
Annual presents.....	,,	3
		58
Interest and Contingencies at 25 per cent.....		14½
Total Rupees.....		72½

Produce 96 bars selling on the average at Rs. 1 each, Rs. 96.

Notwithstanding the enormous waste both in material and labor consumed and the high price of the Iron resulting about £ 20 per ton, the manufacture is carried on both with advantage to the district as well as considerable profit to the merchant supplying the capital, it becomes desirable therefore to consider if some improvement could not be effected in the details of the operation, under the existing system.

The great disadvantage under which the native works, is evidently the inefficient means he has of producing the blast, on this account his furnace is so small in size and the expenditure of fuel so large.

Near Roodrar in the jungle where I have mentioned that the furnaces are worked during the dry season, there appears to be a good position for the construction of a tank, the water of

which might be employed as a source of power, for supplying the blast to a number of these small native furnaces.

The drainage area of supply to this tank is about 16 square miles, this with the average rain fall of 27 inches would if collected give 1½ horse power throughout the year for every foot of fall for which the water could be made available.

The valley in the lower part has a fall about 20 feet per mile, and at about 3 miles above the lowest part the tank could be constructed.

At three places therefore there could be established furnaces with water power of 30 horse at each.

With this power not only could an efficient blast be supplied for 50 of these native furnaces but rolling and shingling mills for working up the blooms for the whole of the furnaces could be wrought at each of the three places along this valley.

Labor in the Roodrar district for Iron making being confined to a particular caste of men is very limited in amount; by the assistance of water power, instead of taking 5 men to each furnace, 2 men could attend at least 3 furnaces for charging and drawing them, the men thus released would engage themselves in collecting ore and fuel.

The consumption of ore and fuel might safely be reckoned upon being reduced with an efficient blast, the former by one half and the latter two-thirds the present amount.

It would not be requisite neither do I think the ground offers the facility to collect the whole of the 16 miles of drainage into one tank at the best site in reference to elevation; a number of small tanks would enable the furnaces to be established to a greater advantage in reference to obtaining supplies, one of these tanks being first established would at a small expense be able practically to prove the value of the proposal.

The most ready way of commencing would perhaps be for the Government to take a certain rental for each furnace supplied with air, the renters paying the hire of a native mechanic to attend to the water wheel, &c., its repairs.

The establishment of Government works would however I think ultimately prove desirable not only for supplying their own Arsenals, &c., with iron, but also for aiding the introduction of those improvements in the native system which I apprehend must suggest themselves after the application of power to it.

These will consist in the use of fluxes, increase in the the size of the furnaces, and eventually in the manufacture of cast iron, of which material many articles in use in the country could be made equally serviceable and at a much cheaper rate.

As Schools of industrial Art works of the above nature connected with the other branches of skilled labor required for Ordnance and other Government uses, partaking of the character of the Mint, Gun-Carriage Manufactory and similar institution in operation at the Presidency must greatly tend to the improvement and promote the well being of the native of this country, if only reasonable grounds can be shewn for such establishment being of practical service to and not a burden upon the Government.

That there is a great increasing demand for native iron is shewn by the enormous advance upon its selling price that has gradually taken place during the last twelve months, I am informed that at this place, Bangalore, this has been from Rs. 1½ to Rs. 2½ per maund the present price.

Native iron must always command a high price in this country and for the generality of purposes foreign iron cannot be substituted for it.

In the hands of the Native smith European iron is worked with difficulty, it gets burnt, made brittle and rendered useless, the high price Native Iron commands in the Mofussil in comparison with it, viz., £ 23 per ton, to £ 16 at which European Iron can be purchased is sufficient evidence of its value.

With respect to the cost of establishing an initial work as proposed near Roodrar, I have estimated that a tank having a length of bund of 800 yards and extreme height of 5 yards could be constructed to retain 1½ million cubic yards of water, together with a contour mill channel of 1½ mile in length for an amount Rupees 2,500, a water wheel and fan for a similar amount, if made on the spot, add Rupees 1,000 for contingencies,—Total Rupees 6,000.

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The above body of water falling through a height of 20 feet would give during three months of the year for 72 hours of each week an available power of 20 horse.

The saving upon each furnace supplied with air, would be

4 men at Rupees 4 each per mensem or for a season of 3 months Rupees 48.

An annual charge of Rupees 30 on each furnace would require only 20 to be concentrated at this spot (instead of as at present scattered amongst the neighbouring villages) in order to yield a return of 10 per cent on the outlay above estimated.

(Signed) PHILIP W. WALL,
Mineral Viewer.

Order.—In Extract Minutes Consultation Financial Railway Department, dated 3rd September last, No. 435, the Government after reviewing the results of *Mr. Wall's* enquiries for coal in the vicinity of *Kota* on the *Pranhecta* river, resolved to engage his services in examining the Lead and other Mineral deposits in *Kurnool* and the other portions of the Ceded Districts. His present letter contains his report on those localities.

2. The first place he visited was *Koilkoontla*, not the town 61 miles North West of *Cuddapah*, but a village, named in the Ordnance Maps, *Coilconda* and situated in the *Dhone* Talook of the *Kurnool* District. He arrived there in January last, and, after considerable trouble in reducing the level of the water in the pit sufficiently to examine the vein, he found, as the result of his operations, that there would be per fathom 9 cwt of Ore, after allowing for "proper dressing," and further that the per-centage of lead contained in the mineral might be estimated at 75 per cent for the first sort of Ore, and 33 per cent for the second.

3. The existence of lead in the foregoing site was discovered in digging a well not very long ago in the days of the last *Nabob* of *Kurnool*. The place next visited, however, *Gazerpully*, a village about ten miles to the South East of *Nundial*, is marked on the Map as the site of a Lead Mine, and judging from the pits and galleries still existing, *Mr. Wall* is of opinion that it must at one time have been very extensively worked. At present the jungle grows very thickly around it, and the vicinity is frequented by wild beasts, so that the Viewer had some difficulty in procuring Native labour. To detect the actual site of the vein, he recommends the sinking of a trial shaft, for which he would require the aid of a party of Sappers. This requisition will be referred to the Military Department for a compliance therewith if possible. The existence of the 'fine Teak Timber' in the jungle will be brought to the notice of the Conservator of Forests.

From Officiating Agent at Kurnool, dated 29th May 1857, *No.* 13.

4. The third place inspected was *Nundialhampet* a village about 20 miles north of Cuddapah, situated in the *Dhoor* Talook. *Mr. Wall* saw indications of a very extensive field here. He was also particularly struck with some specimens of Ore found by one of his attendants in the neighbouring range of hills called *Lunkamulla*, on account of the abundance of copper present with the Galena; but he did not visit the site himself.

5. On the whole he is of opinion that no safe conclusions can be drawn of the probable yield of these mines either as to lead or silver, in the absence of further experiments. If the yield of silver is not found remunerative, he doubts the feasibility of working for the lead only, at a profit. Government might, he thinks, try the experiment, as 100 tons of lead are annually required in the Military Department.

6. The Governor in Council considers that the "preliminary exploring operations" near Gazerpully suggested by *Mr. Wall* should be at once undertaken by that gentleman, with the assistance of the Sappers already referred to. Orders will be given through the Department Public Works for the supply of two sets of pumps, and any appliances the Viewer may require.

7. *Mr. Wall* next visited *Roodrar** and other villages skirting the Eastern side of the *Nullamalla* range, and inspected the process of Iron making. He shows that the work is remunerative even under the great loss arising from unskilled labor, and points out how, by

**A place in the Cumbum Talook now transferred to Kurnool.*

water power, the application of which would not cost more than Rupees 6,000, the existing system might be considerably improved. He recommends the Government to execute this work, with a view to opening a manufactory on the spot themselves, or for the benefit of those now engaged in the trade, who would pay rent for the use of the water. This proposition will be referred for consideration in the Department Public Works.

8. Mr. Wall will be requested to furnish Government with a collection of any specimens that he may have obtained in his late researches.

9. Resolved, finally, that copy of *Mr. Wall's* Report and of his letter of the 25th September last, be communicated to the Literary Society.

(True Extract and Copy.)

(Signed) T. PYCROFT,
Chief Secretary.

No. 68. ORDER THEREON, No. 1040; dated 27th July 1858.

Ordered that the above Extract be communicated to the Conservator of Forests and that his attention be drawn to para. 3.

(Signed) T. PYCROFT,
Chief Secretary.

Revenue 1858 Depart
Con. 27th July.

7
1040

No 1171.

Extract from the Minutes
of Cons. in the Public Dept.

Dated 14th
Rec'd 29th } July 1858.

No 1040
Ordered that the above Extract be communicated to the
Conservator of Forests and that his attention be drawn to Para 3.
T. P.
27th July 1858

Conservator of Forests
Chief Secretary's Office
27th July 1858 } Nos 67 & 68

Retaining the Records of
Mr Wall's examination of the Coal
and the Mineral Deposits in
Kurnool and other portions of
the Ceded Districts and passing
orders on the several points
therein mentioned.

Written Order.
No. 1040. 27th July 1858.