

Feb, 25. 1806

CL 10

My Dear Ld.

Johnny Binns was the whole of last week at Malhamwater and on his return on Sunday reported the most unintelligible and confused Acct of the mines and Miners I have ever had. I have however the sincerest pleasure in giving you a detail of my investigations yesterday - George having fixed Friday for being prepared with the specimens you wrote for.....

(description of packing of stalactites etc in partitioned boxes)The blue and green are the scarcest. Indeed they have sent almost all of the blue they could discover. In another box are several species of ochres labelled as you directed. Robinson burnt a piece from Kitchens Cowside and it produced a fine coloured paint as od be wished - rather with a purple cast - That Place continues a great Quantity, if it shd be found valuable The Copper bits were picked from the Old Hills. The Greyish Calamine from the new Ground, the White from the Old Works, but after we had nailed up our boxes, the Miners came down and brought the finest lumps of White which they had just discovered at the farthest end of the third Chasm of 84 yards. But the old specimen sent id of the same kind only this coming fresh appears whiter and more soapy. I had packed up in a little paper some of Matthews Zinc Powder but Robinson had laid it by him on a dark shelf and it is left behind. If they (the stalactites) arrive safe I hope Lady Ribblesdale will let Messrs R. Browne & Co. 5 Tavistock Street cut the blue for her court dress. They are reckoned capital lapidarists and have had many such Pieces from the mine on High Mark which George says contains considerable quantities of these things. //

I have now to relate a much more important Prospect however than these Baubles. Binns had never been out of the House scarcely all the time. He was up and brought down exactly such an account as is in the enclosed specimen and said nothing was doing but lead from the mines.

Immediately on our arrival yesterday George however announced they had been at work in the chasms for some time in two Places and were very successful with Calamine and Lead Ore. One party in the Great Chasm and Boothman with 2 others at the end of the farthest where they were driving on the vein so as to see if possible what the soil wd produce where he intends making the shaft. They had gone a good way further than before and the vein instead of going towards Kirkby Fell was taking a direction full North and seemed leading to the valley in Pikedaw, and had got a great deal of lead and as fine Calamine as was ever seen. One piece of Lead last week weighed wd weigh more than Half a Pack and immediately as they could ascertain the true dialling they wd set seriously to work at the shaft wch is believed would not exceed u Fathom.

The two past days Boothman and his party have been digging into the soil at the extremity of the furthest Chasm to see what depth of Calamine they cd discover & he was to come down to Malham while we staid if they were not stopped by water. I wanted his report and we ~~staid~~ staid till after three purposely and he arrive just as our Patience was exhausted. They had no water and he produced some large lumps of the beautiful white Calamine which they pursued two feet deep in the soil of the vein, and also a fine specimen of the greyish colour, the largest quantity of the latter but every appearance of a great quantity of the white and they had then found neither bottom nor side of their Vein. He also told me there was every appearance of a deal of lead ore. These pieces are intermixed with the Calamine and they had that morning got nearly a Ton of lead ore in that place and the other party were getting ore also in one of the other Chasms, I forget which but Mr Dawson who went with me says in the Great one. He meant a ton weight it was, but when smelted its weight of course wd depend on the richness of the mineral. You will find a specimen of White Lead Ore and what they call Black lead ore which were got from the top of the second chasm of 44 yds long. Robinson thinks he put them in the little box but they are in small separate lumps. Most earnestly do I hope this Prospect (which I trust may be more readily credited by receiving it from Boothman's confirmations, and indeed the last from his own observations and

work) may continue and be realized. I sent to a clever Dialler from Grassington Country & George is to bring him on Monday and then send me his Trial. But he seems quite confident of being right and says he knows nothing at all even of the use of the Dial at the top of the Ground & never went below. That is, as we observed, he had measured the distances of one stake from another.

We went into Matthews House and I concluded it would be a thousand Pities to pull those Arches, Furnaces and Flaws to pieces and for want of room to draw out & put in the Calamine all must be taken down and rebuilt, but on getting this business of whet Length and Breadth wd be necessary, and finding brick enough and nearly Iron enough from the present Calcining House I conceive a very complete oven may be erected in the centre of the North end of the Building and not disturb the Zinc Flaws at all. So we set to work and George approves the plan much, and especially as by making an entrance from the west side he can most conveniently stow his raw material and draw out the calcined into the next compartment as the warehouse for the purchasers and have his coals and weighing things &c by their respective uses.

I have also a small place at the east end for....(torn) However as I expect to hear from or to see a man from Cheadle very soon and especially waiting for your decision we agreed to Calcine 20 or 30 tons more next week at the old place. If that man comes I will ride up with him and then report his opinion. If none be sent we ought to set to work for I see nothing but error and confusion from the present disposition of calcined articles, and I beg you to send me your directions how to proceed lest Mr Ingleby should not be able to find a judicious Person. We have had a good Laugh since this expedition with which Dawson was immensely delighted especially with MatthewVs apparatus and compartments. Binns said a man must be a mathematician as well as understand arithmetic thoroughly before he could know anything of Dialling and as there was nobody thereabouts he would go himself, so he set off with a new invented Dial of Master Bramleys & his Spirit Level with Compasses &c&c&c and lo! he cd not understand the mode of their proceedings underground and durst not go down. He now designs to send John Hodgson with the same apparatus which he say "He understands as well as himself and can venture down below."

I forgot above to mention, the putting up the Calcining Furnace where I have described will not cost at the most more than 7 or 8£ as George estimates.

The box of specimens went to Hurtlely this morning and I wish it safe and prosperous arrival....Adieu, yrs of 26th just arrived.

T.C.

8 Mar. 1806.

n.d. 12th Feb.

CL 11

My Dear Lord,

I recd yesterday for part of tithes only £440 the rest not having paid as usual-----

I will go up to the mines myself so soon as I find how the ground of proceedings are reported and proposed. This I hope will be a very great addition to the Income and no exertion or source of Activity that my mind and sagacity can invent shall be wanting to effectuate the plan efficaciously and as speedily as a complete Plan can be established.

n.d. Sat Night 8th March. 1806.

My Dear L.

I trust the expedition to the top of Pikedaw will neither be found or deemed unnecessary or unimportant. The men Mr. Hargreaves was so good at much inconvenience to send appear equally intelligent and assiduous in their Pursuits and Investigations. They were underground yesterday from ten in the morn. till Ten at Night and are not yet arrived here as they Intended when I left them between one and two this afternoon. They had finished in ye bottom last night and were got over chasm 104 yes: as I left them but the bearings are so short as to render the work extremely tedious - I was advised by no means to go down in the present shaft but wait till the new is one is sunk which will set one in the heart of all the Curiosities and Riches. Watson the dialler seems astonished at the appearances both of the works and their Productions - He has been a Miner all his life, chiefly for lead in Arkendale & Bishophill of Durham where Geo: Tennant was initiated in the same science. Notwithstanding his intent application to the Dial he said as he went along and found ~~evidence~~ abundance of the finest Calamine everywhere. He told us he scratched a handful of ordinary rubbish then got a handful of as pure white or whitish Calamine in every direction of every space they traversed and thinks the Mines are almost inexhaustible.

It seems the Dialler before these, one Ellerton of Arncliffe (not as I understood from Grassington) had discovered a very considerable error in Geo: Tennant's and Sons previous attempt - but he says Hurlley who took down their bearings had occasioned the mistake by his hasty and inventive process. George however had followed Ellerton with another Dial and found and acknowledged the schoolmaster's blunder. - in the main Points, Distances, etc. They agreed - but Georges statement made it much a greater length than it now appears.

George as directed had taken Mr Ellerton's ~~mines~~ stakes and Hargreaves men wd not accept this offer to attend them ~~below~~ below ground. Boothman conducted them throughout and half an hour ago he arrived with them here - almost famished with fatigue and hunger. I am persuaded as I can be of anything I have not seen myself - we are now completely Masters of the subject. Boothman (who ~~had~~ knew and had shown me this morn, the lines of Ellerton) says these men are as near as possible in every Line and Direction and agree as to the main Points almost precisely. Where he is working in Chasm or rather diverting a little from Chasm 44 They tally to a trifle; and as the width where the Pipe crosses that chasm is 16 yards and its length 44, it is impossible but their new Shaft which is to be there must be certain of falling into it. The Diallers are not a yard assunder but these Burnley men were wider - that is more northerly and easterly in their circle than the other at first go off and so continued till they got into ye first Chasm 104

At the Extremity of 84 they are a yard or two short of the other but I saw it there and it is 30 yards short of a very great Shake Hole into which the Rill of Water falls which was down the wall end which divides Kirkby Fell and Grizedale, that is the Rill where they now Buddle the Calamine from the first works. Chasm 104 is a little to the left of the Horse Road from Pikedaw Gate to Malham 44 immediately under that Road and in length across it from North to South 16yds. Boothman then follows a vein nearly north easterly i.e. to the left of that road a little, and there is the New Shaft to begin on Monday Morn. because it is the most

central and the lowest point, and shd it be necessary (as Watson says no hesitation can be about it) from the bottom of that shaft a level may be driven from the valley coming from Pikedaw Well down towards the Horse Road going to Malham abovementioned, so as efficaciously to clear everything of water which falls that way from 84 and the Great Shake Hole as well as from 44 etc.

I ventured on the fullest deliberation with all the men and Binns and George to act instantly abt this shaft for the reasons given by Watson. It is so trifling a job that 25 or 30£ that is 4 tons of Calamine, will complete a most accomodating Piece of Work without losing the Summer which the Level may take to accomplish & in that time says he "His Lordship may get 2 or 300 Tons @ yr other Miners may be persuing the Chasms and perhaps find others which may lead you much nearer the Place for yr Out-break" There are to be 8 men, 2 constantly and successivly at work Night and Day, for 6 hours each sett, and we hope soon to get out every Species of Jewellery thro this shaft. The Impediment will be Rock, but if all Rock they will get thro it, as it is supposed not to exceed 7 Fathom or 7 & $\frac{1}{2}$ They are all in high Spirits and keen of their work.

Binns I left levelling above ground, so as to ascertain My Lordship where a regular Level will certainly come out and clear the Water off as well as enable the animal to draw out the Mineral. Watson by all means recommends this even if the Water shd be in general removed without it, for from what he sees of the Calamine so much labour will be saved in bucketing it up, besides dragging it from all quarters underground. as will in these times overpay the expence of the Level, although it must probably be a tedious and laborious undertaking - at present - the New Shaft will chuck them into a bed of ore where abundance may be got up, even in the worst Weather and will bring in the Cash without loss of time.

Now for yr Approbation or yr Censure - I own myself though not a Chief Justice yet a Mack of one - but not yet Responsible-

You shall have the Dialling when finished and a deliniation which Binns is preparing at Mallwater. The weather delightful and the Place beautiful.

So Good night etc.

Watson is confident Chasm 104, 44, & 84 are all one and the Rubbish or Ridges or Brodges will be removed and be one all the way.

7.
Wed. 25 March. 1806

d/d.

LMM 5 C.L 12

My Dear L

I believe an Answer to one of your Instructions may have ~~been~~ made an important discovery or go some way towards lessening our apprehensions of George being an accomplice with the Chedle Pait Manufacturers. I told him we would hereafter mix the yellow from Grisedale gate or some of the darkest colourd of which we have a good deal even blackish, with all the Calamine we sent hereafter to Chedle or elsewhere, and by all possible care pick out evry bit of white and also the next lightest colours and sort the whole by themselves. He replied those orders were practically followed and they have for 2 days in 104 been beginning the work there and had laid the ore in four heaps of different hues as they advanced. I then asked if they cd not afterwards pick out the smaller lumpy bits of the white from the lightest colourd grey heap. He replied Doctor, I have been thinking of that ever since you mentioned it before and think there is a chance of separating the white by a very fine wire seive for what is entirely white is fine and the particles as small as Hair. By the same process therefore as the Millers use we may have the chance of leaving the coarser parts which are always the brownest for the second best. So I hope we may be able to bake white bread for Muffins, Brown for the People and leave what little more there may be for the pigs. This if it subceeds will produce a large supply indeed of what is most wanted and cut off a possibility of supplying any Rivals. There was no seive nearer than Leeds to be thought of, however I sent immediately to the Miller who happened to have a new one never used but it is thought by George to be not fine enough. However he buckled it to his back and it will in some degree ~~show~~ shew what effect & we can procure as fine ones as we want.

I fear and indeed conceive it will be utterly impossible to send up any large quantity of Raw that is undried, in Bags. Experiments have been made before and the universal result the bags were rotted the first journey. This with the enormous additional weight as you wd find by the boxes sent, will take away the Profits be they never so large even by water carriage.

George says of later, he has used very little coals as the Calamine only needs to be put into a warm oven thoroughly to dry it. This absorbs the water but can never affect the mineral. In truth it looks to me very much like a Practice and I sincerely wish we may find it not merely his ingenious theory.

In any case we recommend strong old casks, newly hooped with Iron to be bought, holding abt $\frac{1}{2}$ a Ton or more, as the Calamine will still be exceeding heavy when rid of its water and a Hundred Weight bags as you will find by the box sent by waggon yesterday in an exceedingly small compass. That box was made by Robinson to contain 12 or 14lb to go by coach. We soon found its enormity for that purpose and kept this new one as imagining it might hold 35 or 40 pounds. On weighing at Settle Robt Haworth says it was above 70 lbs.

Wilkinson shall go in the morning to Bentham with the smallest cart and bring back 2 or 3 webbs of Sailcloth that some bags may be preparing agst yr orders arriving.

They will cost I believe 2s 8or 2/10 each bag to contain 120lb Calamine. This however is only in obedience to yr orders. and not recommended to be persued.

Two men will be set today to get into the Ochre bed on Kitchens Cowside as they are now loose and if not immediately engaged must look further North for employment and miners never were so scarce.....

...so soon as our shaft chucks fairly into 44 we shall have room for three setts of miners to get out whatever Mineral these chasms can produce and the prospect is still judged immense But at present unless casks are got, how are we to send off any quantity either of ochre or Calamine Consider too the length of the voyages by the Canal and Sea and even arrived in the Thames the time to be employed in the Process and Sale of the articles.

A hope is entertained by all who have been in 84 that the chief part of the water they are troubled with comes from the trifling stream where they buddled and are to do again, coming from the Wall end between Kirkby Fell and Pikedaw and if this be diverted from the Great Shake Hole which seems to empty itself thro 84 and 44 and so on, we may get rid of our greatest enemy. This attempt will be made on Friday.

I wait the return of this messenger with much anxiety for yr letter. I send mine to George to convince you that instant and precise attention was paid by me to yr proceedings and wishes

..... TC

Copy.

1 Oct. 1806 8

L RMM/g

CL 13

My dear L,

I hope the Cause of my not hearing from You yesterday did not arise from any Increase of Your Complaint but I shall wait for this Post with great Impatience as the nature of yr. Malady will I trust at least be ascertained, if it be not removed.

At length I have got a Piece of Hard Stuff brought out of The Top of Middle House Height. A Fall of Snow on the Mountains has blocked The Posts for ~~the~~ the last Week. We have now a Change of Wind and fine gentle growing Rain. If my opinion was ask'd what the Lump sent in a Box by Colne Coach is, I shd. have no doubt of denominating it.- but Beecroft who has just brought it down help'd to get it and says it is the only Sort of Stuff which The Pit Hole on The Height has in it.

The Rock in the New Shaft continues very obstinate but Time and Perseverance incessant must soon get the better of it. It has not been measured since I was there but He says They may have sunk between 5 & 6 Fathom.

Now the Snow is melting George will explore for fresh Species & Colours of Ochre all over The Manors. We have had no Snow here but at Settle it has been Ankle deep - and in The East Riding quite Mid-Winter.

In 104 I hear they have found an Appearance of a Vein leading to another Chasm and More to the Northward that is more towards the Top of The Hollow in Pikedaw than the Intention was to commence the Level. If this so turns out, and to any extent, it may clear that Part of the Work of Water and perhaps lead out or much nearer the outbreak than they have at present discovered.

As George and one Man are to go on the Discoveries. I have desired him to let the other two get out four more Hundred as pure White Cal. as they can so as to make up a ton. I propose going up some day next Week to see what has been done, and especially to see no White is calcined or mixed with the Cheadle Delivery.

Dawson is really very unwell and has been for a fortn. a terrible swelling in his Stomach and Intestines. The Belly is hard as the Middle House Wetricle. I dined with Him and Old Rector yesterday - The latter seemed a good deal alarmed. The Ladies were gone to Settle. We had a good deal of Talk abt. The Colonel.

I yesterday Mong. went with Banns over the New Purchase and like it wonderfully. It lays delightfully to Peels and with an Exchange of The Green as it is called, for the Josephs Croft at back of Aspinals, it will be a capital Farm indeed - compact, near the excellent Buildings, charming Meadows and very valuable both as to fine Land and Abundance of Hay Ground.

The New Tenant has really done Wonders already at old Peels Meadow - drained it thoroughly - filled up the old dirty open drains and carried every Bit of every species of Manure He can scrape up. I like Him better than any Tenant there is for Activity and good Workmanship. He is to come on Monday to talk abt. crops, but said it was of little use. He shd. bid nothing - but wd. fall into yr. Ldships Will - and wd. give whatever you thought it was fit for a Tenant to be ask'd, being sure of yr. Ldship wd. not wish to see Him labour hard and be mined. I think it will well deserre with the Two Cottages and Half the Barn lett off to Brayshay for 60 or 70 £ a year. Our opponent was a Gentleman We never dreamt of - Mr Brogden of Brogden M.P. When down last Year he took a liking to this neighbourhood and ordered His Steward - One Crook - to buy any neat Estates he knew of. He bid 1640 £ One Roberts bid for Him and had surveyed it.

He is a past Turkey Merchant. Pray tell Lady R. is lucky
for The Poultry House for he wd. have been Neighbour to old
Sally.

Adieu. It continues to rain finely and the are delighted.

Kindest Regards to all the party and under most anxious Hopes for
a favourable Acct. of Yrself by return of the Messenger I remain ever
Yrs. H.

Friday noon 1st April 1806.