

From PDMHS Bulletin Vol. 1 No. 5

Winster Sough by Nellie Kirkham.

As no sough is known by this name now, and does not appear in any printed list of soughs, it will be well to prove its existence historically, before giving its position and range.

The earliest documents are in Sheffield Library¹. In a document of 1656-1682, "an account of Mr. Feinshaw's old books of charges at Winster", there are entries of charges at Portway, or Portway Yate, Mine as early as 1656.

The agreement for the sough was made in 1687 between the 'soughmakers or undertakers' and the owners of mines which included Portway Yate, Grifsell Grove and Lickpenny. The mines of Winster were 'overflowed with water' and a sough was to be driven from some convenient place, and the water carried to the sough or entrance by a level.

Andrew Clayton, a merchant of London, bought 1/4th share in Portway Grove, and John Spateman, a local gentleman also held shares in it. Robert Moore, the Winster Barmaster, was the overseer for the sough. The soughmasters appointed Spateman to pay Moore £20 for the carrying on of the sough, but Spateman did not do this, and also did not pay his dues towards the cost, so that his share was forfeited and transferred to Henry Gilbert of Burton-on-Trent, and to Andrew Clayton. In the documents it is referred to as Winster Sough or Portway Gate Sough.

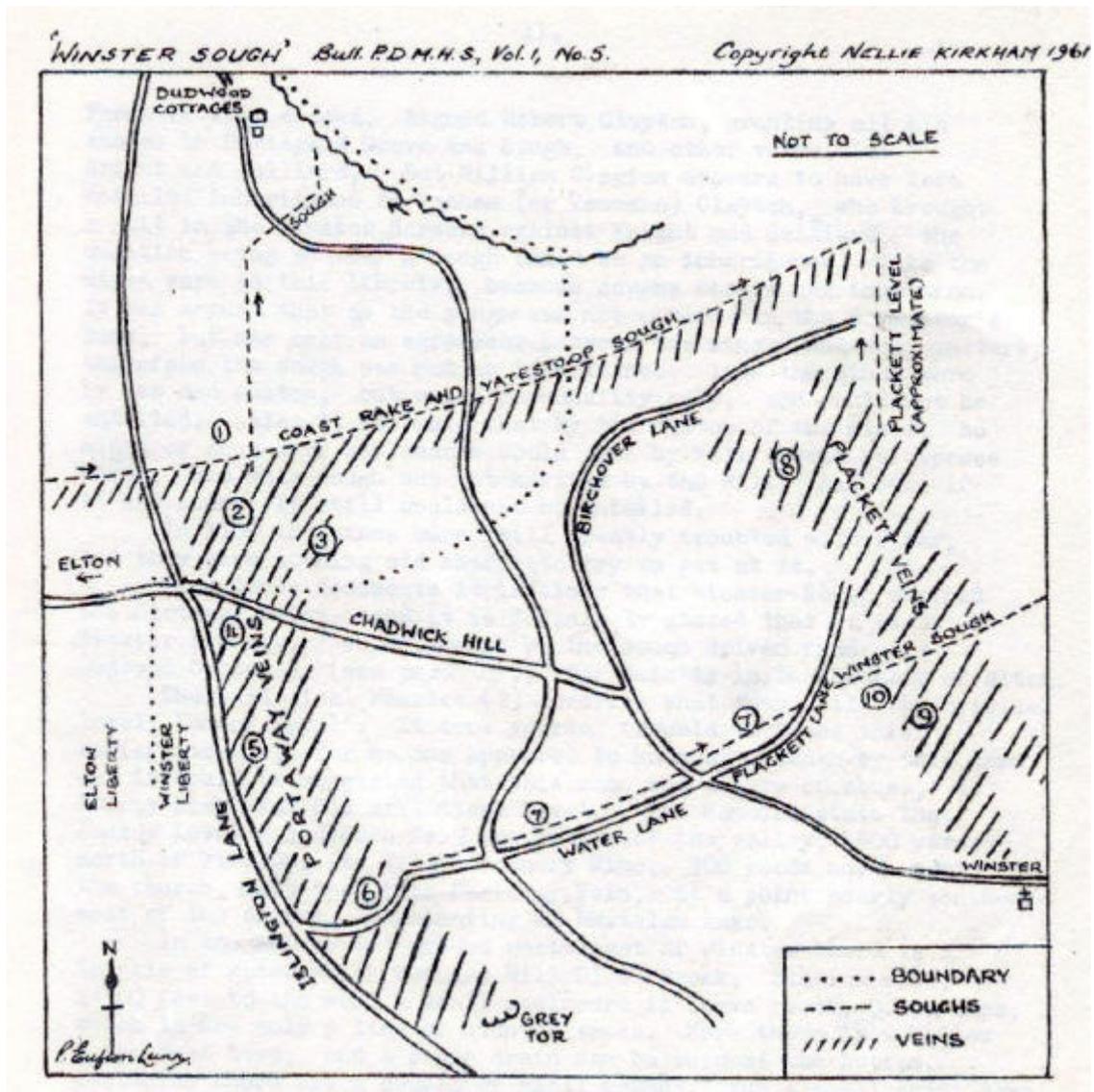
In 1692 the sough was being carried forward and the shareholders were paying out small sums of money. In 1695 a call of £120 was made four times in the year. As with the driving of most soughs, at the same time they were getting ore from veins to which they held title, at 24/- to 25/- a load.

In 1692 a letter was written to Anthony Clayton, stating that no ore had been measured for two months, by reason of the Duke of Rutland demanding 1/10th of the ore for tithe, and they were refusing to pay this, for they said it had not been paid within the memory of man, and they were debating whether "to stand out against My Lord, or pay ye 10th, or take some application to My Lord to change his mind".

As was often usual with soughs, particularly with one of this early date, it proceeded slowly. In 1697, Robert Bateman, who was concerned with the driving of it, wrote that "it goes very slowly ... so long as Mr. M. governs it".

Andrew Clayton in his Will left his shares in the sough, in lands, and in mines, to his nephew William who died without issue in 1706, having relinquished all interest in the sough to Thomas Wright of Sheffield, and Joshua Galliard, a London merchant.

There is also a deed, signed Robert Clayton, granting all his shares in Portgate Grove and Sough, and other veins, to Wright and Galliard, but William Clayton appears to have left entailed inheritance to Vanham (or Vanmann) Clayton, who brought a suit in the Winster Barmote against Wright and Galliard, the question being whether a sough could be an inheritance, like the mines were in this liberty, because soughs were a new invention. It was argued that as the sough was not entered in the Barmaster's Book, but was only an agreement between the miners and soughmasters, therefore the sough was not an inheritance, like the mines were by law and custom, but was a personality only, and could not be entailed. Also it was said that by the custom of the mines, no mines or soughs or any shares could pass by Will except by express words, and this sough was not advised by the Will. And even if it had been, it still could not be entailed.



1. Enthoven's Portaway
2. Coast Rake Mine
3. Mr. Fisher's Portaway Shaft
4. Elton Cross Shaft
5. Heyspots
6. Buckdale Shaft
7. Varying Information gives these as Wills Founder Mine
8. The deep shaft on Northern Plackett Mine
9. Plackett Plantation and site of fire-engine
10. Large Dressing Ground

In 1709 the mines were still greatly troubled with water, and they were opening old shafts to try to get as it.

From these documents it is clear that Winster Sough drained the Portaway veins, and it is definitely stated that it is in Winster Liberty, so it cannot be the sough driven from near Dudwood Cottages, for this is in the Liberty of Elton.

The Geological Memoirs² describe what they call "the original level, Lousey Level". It took years of trouble to trace this satisfactorily, for no one appeared to know of a sough by this name, and it could be suggested that this name was a term of abuse, as "Dirty Dick" for Old Mill Close Level. The Memoirs state that Lousey Level was driven from the bottom of the valley, 500 yards north of Winster, to Will's Foundry Mine, 300 yards north-west of the Church, and then into Portaway Vein, at a point nearly south-of-west of the Church, terminating in Whitelaw Rake.

In the marshy wet ground north-east of Winster there is a trickle of water which becomes Mill Close Brook, flowing east, 2-300 feet to the west a small enclosure is shown on the O.S. maps, which is now only a line of stunted trees. Here there is a hollow a few feet deep, and a stone drain can be seen at the bottom. Westwards there are a couple of small mounds, and a small shaft down which water can be heard. There is a shaft-mound in a field (number 66) 1300 ft. due north of the church, and then an open shaft in the field next to Plackett Lane, which is on Plackett Veins as well as being on the sough. Mr. Douglas Nash and some of his friends descended this shaft, which is about 130 feet deep, and at about 40 feet or so, there was a small sough, only a few feet high, and now dry.

On the north side of Plackett Lane are large mounds, now partly removed by hillocking for fluorspar. On the top of the mounds was a gin circle and two shafts. Someone who descended one of them reported that there was a picked level going towards Buckdale at about 90 feet, but my information on this was third-hand, and the depth is a bit uncertain. The shaft was still dry at about 240 feet but below this water could be heard cascading down - probably eventually into the Plackett Level which connects with Yatestoop Sough.

Continuing in the same line, south-of-west, there are mounds along the side of the packhorse roadway, Water Lane, going directly to Buckdale Mine, which is at the bend of the road coming down from the Miners' Standard Inn. Buckdale Mine was on the sough, and the Geological Memoirs statement that it joined the Portway Vein south-of-west of the church appears to be impossible.

The Plackett Veins were a broad belt of veins ranging from Winster Church northwards, and then west-of-north for about 2,000 feet³. In the 1760's the old fire-engine was on the northern edge of Plackett Plantation, 950 feet north of the church. Farey mentions two steam engines at Plackett Mine (he includes atmospheric engines in 'steam'), so the other engine is likely to have been on the Plackett Mine 850 feet to the north-west. This is now sometimes referred to as "the proper Plackett Mine", or sometimes as Glen Ridding Mine, but the last may be a name of recent date.

Here there is a shaft 280 feet deep, and Mr. Douglas Nash and members of Operation Mole Speleological Group have been through workings stretching from the shaft in Plackett Plantation to this deep shaft. An underground stream, which has come down underground from beneath the small valley near the church, finally pours into the deep shaft, presumably going to Yatestoop Sough. The hillocks here are very extensive, and presumably this was the main Plackett Mine.

At Plackett Plantation there has been a very large washing and dressing ground, some of the hillocks having been removed in recent years. It is so exceptionally large that it seems possible

that it was the washing ground for several mines, possibly for Yatestoop, and this is borne out by the varied contents of the hillocks. A number of wooden launders, and stone drains, turned up in the hillocks, and possibly there was a dam for the engine on the edge of Plackett Lane, and that one of the drains took water to the atmospheric engine. The other drains would convey water to parts of the dressing floor. A coin dated 1607 was found in a hillock about 10 feet below the top, although this was not the bottom of the hillock.

The earliest documented date for Plackett is 1713, and dates occur all through the 18th. Century, Ferber visited it in 1776, and it was also being worked in the first half of last century. Farey in 1815 described Plackett Pipe as being wide, with caverns, one of them being 360 feet high, and with much lead ore. From the old 18th. Century mine-plans the large pipe-working was about 200 feet east of the northern deep shaft, and is shown on plan as being approximately 300 feet long by 150 feet wide, possibly this will represent a series of pipes.

Orchard Mine is 650 feet south-east of Winster Church, at the top of an open space in the village and in 1730 Plackett and Orchard were in partnership, and a levy was made on them both for driving 'they sough', and there are references to sludging it, which appears to mean that a branch from Winster Sough went to Orchard Mine. Farey states that Orchard Mine also was a pipe-working, 450 feet wide, with caverns.

Portaway Mine was one of the richest and most interesting in Derbyshire. On the old plans the vein is shown ranging from Grey Tor on the north-east side of Islington Lane, crossing the Winster to Elton road (Chadwick Hill), its total length being about 3700 feet with a width shown as 3-400 feet all the way. The history of the mine, and the northwards dipping measures, make it reasonable to suppose that it was first worked at the south end, and that the vein was followed down-dip to water. It was being worked in 1666, when it was mentioned in a deed of mortgage⁴ with Wast (West) Grove, and Leadenham Grove.

Winster Sough reached the vein at Buckdale Shaft and the atmospheric pumping engine of the 1740's was here. Up to the 1750's the vein was worked northwards up to the Winster to Elton road, keeping in Winster Liberty. Afterwards this working was continued northwards into Elton Liberty to Coast Rake, later to be drained by Yatestoop Sough.

There is a wealth of information about Portaway Mine in the Devonshire Collections, Chatsworth, most of them dealing with the lawsuits of the 1750's.

About 1721 Cornelius Dale demised to John Goodwin 1/24th of Portaway Sough and Mines and composition for seven years, the latter to pay £160 a year and to pay the reckoning charges. In 1721 Goodwin handed them over to Robert Clay, and seven years later a suit was tried at Derby Assizes, the Duke of Devonshire v. Clay and Goodwin, when it was held that soughs, as well as mines, were dowerable. At this time it was stated that the mine was very rich with great quantities of good ore, and being worked with much profit. But the vein dipped to water as they followed it, and the owners were put to great expense 'trying to lay it dry with horse-engines' which proved ineffectual, and the vein became poorer, and costs higher, so that from 1731-9 the mine was not worked.

In 1744 the title to Portaway was given to a new set of partners, one of them being the third Duke of Devonshire. He held a lease from the Crown of the mineral duties in the King's Field of the High Peak, of lot and cope, and the office of Barmaster. For a number of years the Duke had farmed out the duties of lot and cope north of the River Wye, but had kept those of Winster and some other places.

During the next six years the Portaway partners raised a great deal of rich and valuable ore, but also their expenses were heavy. Before 1746 they had erected the atmospheric engine at Buckdale Shaft, and this and other expenses cost them £2,000, and in a petition of the Duke in this year they stated that they expected to spend another £1,000 before the mine could be drained, and that if they had to pay lot of 1/13th, and 4d. a load for cope, they could not continue, and the value of these duties to the Duke, and the value of the Lord's Meer, would be lost. If the Duke would remit to them whatever amount of the duties he thought reasonable, then the undertaking would continue, and could be a great encouragement to the Liberty, and could increase the amount paid in duties. Through his agent, Alex Barker of Edensor, the Duke refused any abatement of the duties.

On the other hand, the Duke had already been lenient in another direction. When the lead ore was drawn up out of the mine it was called fell or bouse, and the rich pieces of lead ore which could be dressed with the chipping hammer alone, without washing or crushing, were bing or round ore (referred to in the documents as 'round or kindest ore'). Peasy ore was that knocked off from pieces of rock or other minerals by women with a bucket and then sieved or riddles in water, peasy ore being that which stayed on the top of the riddle, while the finer sort which went through the mesh of the riddle was smitham or offal. That which remained in the sludge after the smitham had been extracted was belland.

In order to encourage mining in Winster and other places, the Duke had allowed his Barmasters (who were appointed by the Crown, and therefore by the Duke, as Lessee) not to be strict about taking the duty of lot on smitham, unless this privilege was abused. But the Portaway figures were showing a curiously large amount of smitham. In 1747 the duty-ore (bing and peasy) was only 500 loads, while smitham was 4586 loads. By the time the Duke filed his Bill in 1750 he calculated that from 1744-1750, on an average, lot had not been paid on more than one dish in six, and that in fact for the first six years of this period they had not paid duty on more than one dish in one hundred and thirty. George Tissington was the Barmaster for Winster from 1740-50, and an entry of his for 1746 gives a proportion of duty ore of 110 loads, and smitham 905 loads. It was obvious that such a large amount of smitham meant a loss for the Duke, and gain to the miners by non-payment of the duty on it, so that by 1750 the Portaway miners were accused of 'unnecessarily, wilfully, and designedly breaking and beating down the larger duty ore into smitham'.

During July 1750 there was correspondence between the Duke and the miners, and the Duke made it clear that he had not dismissed Tissington, the Barmaster, for not having taken lot on smitham, for no instruction had been given to him to discontinue this indulgence. He had been dismissed because he had allowed larger ore to be made into smitham. The Duke added that if the miners were free to dress ore as they pleased, they could beat it all down, so that no duty would be paid. Portaway Mine had yielded great quantities of pure ore free from other minerals, and which ought never to have gone to the bucket at all. The miners retorted that the cost of beating down the ore was larger than the duty.

There is a long letter 'touching the beating down Lead Ore into Smytham' from someone signing himself 'Darebehonest', saying that in 1750 they were accused of dressing their ore in 'an unmineral Manner'. The miners admitted raising a great quantity of ore, and that the amount paid to the Duke bore no relationship to this, and they admitted that they had knocked-down and beaten the ore. But they denied that this had been in order to avoid paying duty, they said that it could not be made merchantable without this process. They admitted that more duty was paid twenty years previously, but then there were two veins being worked, and one of them was 'properly bounded' and some parts of the veins were well filled with strong large ore, almost free from caulk and other minerals, therefore this produced more duty ore. When they reworked this mine, instead of separate and distinct veins, they found that the veins were 'thrown and dashed

together', and the ore was weaker, with vast quantities of caulk, spar, and other 'mifchievous Minerals' among it.

Darebehonest said that some of the partners in Portaway Mine were 'Oar-Burners' (smelters), and to have the ore beaten down would be an advantage to them, as it was sold to them by measure, not by weight, and smaller particles lay closer in the Dish, so that it was an advantage to them but not to the rest of the partners. Also such an unmineral manner of dressing produced more belland than did the larger ore, and smelters paid a little more than half as much for belland as they did for larger ore, so that the smelters, who were the ones managing the mine, had defrauded their partners as well as the Duke.

The Duke filed his original Bill in Chancery in Michaelmass Term 1750, and witnesses for the plaintiff gave vivid descriptions of the dressing of lead ore at this period. A number of times during the summer of 1750, one witness went into the dressing coes and saw several women at the knockstone, breaking ore with buckers, and he considered that this ore was really bing and ought to have been only chipped with hammers. He had never seen bing ore broken like this on any other mine. Another witness said that at Portaway they beat all ore, good or bad, and that the miners thought that the duties were hard on them. Another spoke of the goodness of this ore, and said that if it was dressed in the usual manner two parts in three might have been bing or peasy ore, instead of smitham. Another reckoned that a quarter might be bing. A coper⁵ at the mine said that in 1748 he was beating the ore, and Mr. Twigg, who was a partner, and buyer and smelter of nearly half the Portaway ore, told him to beat it to smitham, and other partners and overseers had told him that he made too much bing.

The evidence of another coper, Michael Twigg, is exceptionally interesting. He said that the overseers employed copers to get the ore, and these miners employed women, often their wives, to dress it. When it became likely that the dispute with the Duke might arise, he, and his partners in a cope-bargain down the mine, happened to draw a shift of very good ore at midnight which remained on the bank (the surface near the shaft-top) until the morning, when the overseers saw the ore they said to the miner, "What's the reason you don't get the ore out of sight, for Mr. Godfrey Heathcote is coming to the mine. Mr. Heathcote was the Duke's lawyer. The miner was ordered to remove this ore into a coe, and conceal the best at the bottom and cover it with rough ore, which he did. When Mr. Heathcote came, one of the workmen showed him lumps of dirt and poor ore, and broke some of it to show him. Some years earlier he had been going down the mine to start his work at seven in the morning, and the wind blew out his candle, and he went into a coe to light it, and saw several women sitting on a heap of smitham which he knew had previously been dressed as bing and peasy. He asked them the reason for such an unusual practice, and they said that they had been told that they made too much bing.

William Hodgkinson, working with some other copers, once got 260 to 270 loads of ore at one cope-bargain, a great part of it being clean solid ore, free from other minerals. He saw it underground, and above ground, and not one dish of bing was made from it, and if it had been his own ore, he could have dressed it to make 100 loads of bing. Once he saw Anthony Rains, a coper, sitting in a coe beating peasy ore to smitham, and told him that he, Rains, was a Grand Juryman, 'and he knew better than that', Rains retorted that copers 'are farmers, miners, barmasters and overseers all in one and no body comes to us or takes any notice of us', and that beating the ore would save him a dish or two.

One of the accusations against the owners was that to make it an advantage to the working miner, it was agreed that when they mined and dressed the ore for a certain price (in this case 15/- per load) they were not paid anything for dressing duty ore. Several of the witnesses spoke of good ore being hidden in the mine so that an agent of the Duke's should not see it.

The Duke's Bill cited George Tissington, the Barmaster, with the defendants, stating that they had induced Tissington, when he was the Duke's barmaster, to become their agent also giving him profits and perquisites which were not part of the Barmaster's office, giving him 'considerable salaries to superintend their mines.'

The question of the riddle or sieve is also interesting. The miners in their defence stated that the riddle had been used from time immemorial to determine the ore on which lot was paid, and those supplied by the miners were inspected by the Barmaster, and the mesh must be a certain size. William Goodwin's (one of the overseers) customary riddle was marked 'W.G.' and was produced in the Chancery Court, and the same sized mesh was also used in other Liberties.

The miners said that bing was the only ore which could be made sizeable by the chipping hammer. The ore which was mixed with other minerals was beaten by the buckler, then put on the sieve in a vat filled with water, and part of the ore went through the sieve. The ore remaining on the sieve was put on riddles with holes of a certain size, and all that passed through the riddle was smitham, all that did not pass through was peasy ore. Belland was the smallest part of smitham, and was the small particles falling among the dirt or rubbish, and formerly this was thrown away, but of late years a new method had been discovered of making it profitable.

From time immemorial, holes of the riddles had been fixed at a certain size for the whole of the King's Field of the High Peak on the south side of the River Wye as a method of determining lot. The riddles were sometimes provided by the Barmaster, and sometimes by the miners. The defendants said that they had the right to use what dressing methods they pleased, and that only about 1/10th. Or 1/11th. Of the Portaway ore got since 1744 was of the kind subject to lot. They said that they did not pretend to have the right to break down any ore in pieces after the same was made merchantable, nor had they any temptation to do so, but according to Mineral Custom they had the right to direct in what manner the ore was made merchantable. In Winstar it was customary to riddle without notice to the Barmaster, but riddling was done publicly, and the Barmaster could always inspect it.

The ten principal defendants, the partners in the mine, said that they had always paid lot of 1/13th. on bing and peasy ore, but that smitham and offal (belland) was exempt. When the ore was rich it could be dressed for 4d. to 6d. a load (here given as being about 500lbs. of ore), whereas Portaway ore had cost 2/6d. a load for cleaning and dressing. No miners could work the mines at a profit if they paid lot on smitham, and personally they would not have started to work Portaway Mine in that case. Ore could accidentally be beaten down small, but it would be a loss to beat down bing ore at 2/6d. a load. They denied that they had induced the workmen into fraudulent practices, or that they had bribed George Tissington. 1744-50 were the years chosen for the suit, but the type of ore had changed. There had been extraordinary richness of the mine at the time of a seven weeks cope in December 1753, and the ore was then richer and stronger than it had been at any time since. A number of witnesses said that no duty on smitham had been paid by a former proprietor of the mine, and an overseer, Johnson, said that he gave orders to the men to make as much bing as they could.

A witness for the Duke said that if lot and tithe were only payable on bing and peasy it was to the miners' advantage to beat them to smitham, particularly as if these good ores were beaten down they made a smitham which was 1/-d. a load better than ordinary smitham.

The case came before the Lord Chancellor in February 1759. The case against George Tissington was dismissed with costs. The main case was to be referred to Mr. Spicer, one of the Masters of the Courts, and he was to take account of what was due to the Duke for bing and peasy raised and cleansed since 1744, and investigate whether there was an undue amount of smitham, and if

so what duty was due to the Duke. And there was to be an inquiry as to whether it was fair to dress the ore to smitham.

The Attorney General and the Duke 'conceived themselves aggrieved' with the above, and appealed to the House of Lords on all matters except the dismissal of Tissington.

The appeal to the House of Lords, Attorney general at the relation of the Duke of Devonshire v. John Wall and others, was heard on February 4th. 1760, and it was ordered that much of the decree of which the appeal complained should be reversed, and the parties were to proceed to a Trial at Law at the Bar of the King's Bench by Special Jury.

The final verdict was that smitham and offal were not to be exempted from the 13th. Dish being paid as lot. Costs at law would follow the verdict, and the defendants were to pay these as they failed in defence, also there was strong evidence that the ore had been dressed unfairly, and that the defendants and their overseers at the mine had been guilty of frauds in many respects, beating down the ore, and concealing the ore when the Duke's agents came. The final verdict was given in 1761.

Meanwhile a different sort of trouble had occurred at the mine. The part of the vein which was being worked in the 1740-50's was from about 750 feet south of the junction of Islington Lane with the Winster to Elton road. Heyspots Shaft had a horse-gin for drawing up the ore, and underground the waggon-gate went northwards to the forefield shaft, now called Elton Cross Shaft, in the field at the road and lane junction. This shaft was being sunk about the end of the 1740's and was a horse-gin shaft. Most of the trouble centered under this field (Number 100). Here there were two rithers (rock dividing two veins or branch veins) with an East and West Break Vein. One plan⁶ states that the main vein was 180-210 ft. wide.

Up to now they had been working the vein only within the Liberty of Winster, but in September 1750, George Tissington, the discharged Barmaster, began to sink a shaft in Elton Liberty, a little distance from, but in line with, the West Break Vein. This shaft was on the north side of Elton Road, somewhere on the west of Dudwood Lane. The custom was that when a vein went from one Hundred to another, the vein must be freed again, the old freeing from the previous title was not sufficient, and the Lord of the Field must have a Lord's Meer as in the case of a vein newly discovered. Winster was in the Hundred of high Peak, and Elton was in the Wapentake of Wirksworth.

There were two aspects to the trouble which then arose. Firstly, as Tissington was employed as the agent for Portaway Mine partners, it was suspected that he was sinking it under their order, and that it was intended to claim it as a 'New Thing' even though the shaft might be expected to drop into one of the Portaway Veins. It was suspected that this was being done with the intent of forming a new partnership for it, and to exclude the Duke and some of the other Portaway partners, as at this time there was disagreement between some of them. So the Duke's agent went to the new shaft and asked the workmen there for whom they were sinking it, and they answered George Tissington. So then the agent went to Wall and Twigg and the overseers Johnson and Goodwin and some of the other partners, and asked on behalf of the Duke, what length of ground the partners possessed in Winster Liberty. They all said they could not talk, and they showed great resentment at the question, as it carried, so they said, a suspicion of dishonesty and of wronging the partnership. Tissington, who was present, was then asked by the agent, on whose behalf he was sinking the shaft. But before he could answer, Twigg replied that it was for the Portaway partners. The other gentlemen present then blamed Twigg for his 'hasty discovery' and said that they would rather have had the Duke's agent go away unsatisfied by an answer than have this known, for the distant partners who were directing and conducting the mine had no right to be informed of what was being done there.

The Duke's agent then proposed on behalf of the Duke, and of Mr. Scholler, (who each held 1/24th. of the mine), that four workmen for each of them should go down the mine and take part in the cope-bargains, that number being near their proportion according to the total number of miners actually mining ore. And that these eight miners should work their share, 'as by the general Custom of the Lead Mines they were entitled to do.' The partners who were present agreed, and directed the overseer to take the Duke's agent into the mine, which was done, and they said that they allowed this out of personal regard for the Duke. But they refused to allow Mr. Scholler's men to go down the mine, as they alleged they were not allowing it as a right, for in the first forming of the partnership articles it was stated that each partner was restricted in sending either men or material, that these were to be produced by the overseers only, and that the overseers were to be appointed and removed by the majority of the partners.

So the question remained as to whether all the partners of Portaway Mine would be entitled to their share of the vein when it was worked in Elton Liberty, or whether it was within the power of a few of them, or of a stranger, to work the new part of the vein as a 'New Thing', to the exclusion of the rest of the partners, even if eventually it was proved to be an extension of the Portaway Vein, and not a new vein.

The legal opinion of Eardley Wilmot of Osmaston was sought. He gave it as his opinion that if there was no other case of a vein going into another Hundred, then the partners of Portaway Mine would be entitled to shares in this vein if it was worked in Elton, but that the identity of the vein must be proved, and this could not be established until this new part was cut back to the older part. Therefore, until it was proved to be the same Portaway Vein, any partner of Portaway, or any stranger, could work it in Elton Liberty as a new vein, to the exclusion of the partners of Portaway. The articles bound the partners not to send workmen into the mine, but they could look into the state and condition of the mine, and into transactions concerning it.

The second aspect of trouble was in the region of Elton Cross Shaft, in Winster Liberty, and concerned the West and East Break Veins. Here there were three veins, the old Middle Vein, and the two Breaks, the miners did not consider that they would prove to be separate, but that it would be 'one body of vein'. If the Break Veins continued as separate ones, they would be new veins, and the Duke would be entitled to a Lords Meer in each. But this was occurring within less than a meer from the division of Winster and Elton Liberty, so that if by custom there would not be a whole Lords Meer for the Duke, he would only be entitled to what was called Odd Yards or Primgap (less than half a meer).

In 1753, the rither became part of the trouble. It is shown on one of the Chatsworth plans, as well as being referred to in the documents, that the miners, in working the veins northwards, had more than once shortened the rither dividing the Middle Vein from the Breck going north-east. This, as the vein was measured from a rither, would shorten the Duke's Odd Yards. So, in May of that year, the Grand Jury of the Liberty of the King's Field in the Hundred of the high Peak went down to view the rither and the north-east Breck Vein, to see if the rither had been 'shortened by workmanship' so as to 'hinder the Lord of his meer'. Five of the Twenty-four, or Grand Jury, fixed the rither point, and set up stakes on the ground.

It appears to have been decided that the Odd Yards were due to the Duke, for by the September the workings of the mine had so developed that they could not continue without working into the Duke's part, so they offered to buy it from him, this being customary. The expense of cutting the three veins separately, and the delay and loss, might be more than what they would pay by the purchase, and they offered the Duke £300. The Duke, through his agent, suggested that he wanted to experiment with the working and dressing of the ore, and he refused to allow them to buy unless they agreed. The miners answered that if they allowed the Duke's workmen to do this

it would mean dismissing a great number of their working people, and there would be difficulty in getting them back later. They did not wish to be 'guilty of any indecency to your Grace', and would be willing to put down the amount at a moment's notice.

Godfrey Heathcote, the Duke's attorney, replied to the miners, saying that instead of £300, the Duke would take £200 if he was given possession of the forefield of the mine as it then stood, and to have liberty to work it with his own workmen, and to be accommodated with all that was necessary for raising the ore, dressing it, etc., until enough ore had been raised to be worth £200. The Duke would give security in writing, or by deposit of money, for redelivery of the mine to Wall and his partners as soon as the £200 had been raised.

In the next month, the Twenty-four were called by the Duke to view the boundary and the boundary stones dividing the Liberty of Winster from the Liberty of Elton, and to give their verdict as to the Lords Meer in the veins. Their verdict was that the Duke, as Lord of the Field in the Liberty of Winster, was entitled to Odd Yards, called a Prim Gap, in the Old Middle Vein, between the Portaway Miners' Meers and the boundary. He was also entitled to a Lords Meer in both the Breck Veins. He had the right to carry on workmanship in the ground (the Odd Yards) to which he was entitled.

The Duke's miners were set to a cope for seven weeks, from one mine-reckoning to the next, beginning on December 3rd. When the ore was drawn to the surface, it was to be buddled and dressed as soon as possible, weather permitting. The riddle for riddling peasey ore could be used, but the use of this neither admitted, nor denied, that the riddle was a gauge or standard for determining the size of ore liable for duty. The Duke's agent was to be accommodated at the mine with all necessary for dressing the ore.

Alex. Barker, the Duke's agent, reported that the Portaway partners were 'extremely civil' and had said that they thought that the Duke's proposal was very fair, and that they were determined to make the experiment in the 'fullest manner', although Wall said that they knew of no other way of dressing their ore than the way they had used, and if they could be shown a better way they would be pleased.

Fifteen different copes were set, and the men and women at the mine were ordered to obey the Barmaster for seven weeks, with no reserve whatsoever, and to give every assistance to the people employed by the Duke, and no resentment was to be shown. The miners said that the vein was a good deal better than it had been. The Barmaster said that the workmen and the women behaved to him in a very different manner from previously, and offered to dress the ore just as he wanted, and seemed to want to work for the Duke. The Duke's workmen were told to be very careful in spite of the seeming good humour of the others.

By December 22, Alex. Barker reported to the Duke that ore was being mined very fast at Portaway, that the forefield of the Middle Vein, and the West Breck, were strong and good, though the East Vein was indifferent. He had been through the dressing coes and thought that they were hurrying too much to get the ore up out of the mine, hurry was unnecessary as the Duke did not mind expense, and it would not make to much bing. The Barmaster 'attends as soon as it is light in the morning and stays until dusk at night.' In the past, the copers used to buddle and help to wash the ore above ground which took a good deal of their time, now all they had to do was to mine the ore. Everyone was behaving very quietly and civilly. A few days later he reported that in 100 loads there were only 16 loads of smitham, which was the reverse of what it was in Tissington's time.

The results of the seven weeks, after deducting 1/13th. lot, was 549 loads and 1 dish of bing ore, 165 loads and 3 dishes of peasey ore, 440 loads and 2 dishes of smitham, and 62 loads and 2 dishes of belland.

The Portaway partners then grumbled that the Duke had paid his workmen large sums of money above the agreed wages. The Duke said that his workmen came from distant places and that the extra money was for this, and for loss of time during frost. The partners also protested that during the seven weeks the ore was not dressed in the customary manner as the Duke's workmen were not local, and had uncommon ways of dressing ore which were not customarily practised, nor was all the ore riddled by the riddle used formerly, also some of the ore during this period was so rich and free from other minerals that it came out of the mine 'in Ribbs and Lumps making Bing or Peasey Ore.' From December 3-21, the weather was extremely frosty and 'unfavourable for making Bing or Peasey Ore,' but the Duke's workmen, to avoid inconvenience, made large fires in their coes where they dressed the ore, and made use of hot water for dressing, and by these means and the extra-ordinary length of time taken by the Duke's workmen, they made as much bing as they could have done if the weather had not been frosty. If the partners had used these methods the mine would not have been profitable.

As an example of how a cope was worked, there are the entries relating to Anthony Hardy, from December 3rd., 1753, to January 21st., 1754. He made a cope-bargain to get and dress the ore in a certain part of the vein for 9/-d. a load. A few men, of varying numbers, worked together in a cope, first they went underground to view the vein, and then bargained with the overseer. In the seven weeks, Hardy, and the men working with him, produced 26 loads, 17 dishes of duty ore, and 40 loads and 3 dishes of smitham. Out of the 9/-d. a load they would share what was left after paying the dressers, and these worked eighty-nine and a half shifts, the washers at 7d. a shift, servers at 4d. a shift, men at 8d. a shift, women at 4d. a shift, lads 4d. a shift, and an additional £1-1-8d. was paid for buddling. It does not state here whether the copers paid for their own candles and gunpowder, but often they did.

So far as the owners of the mine were concerned, at this time they were getting round about £2.10.0d. per load for their ore, the price varying according to the quality, belland and smitham being about half of the value of bing and peasey. After paying Hardy the 9/-d., they had £2.1.0d. left per load. They had to cover the cost of the atmospheric pumping engine, keep shafts and levels in condition, also the cost of gins and horses for drawing the ore, pay for smithwork and carpentry, and the coes had to be kept in condition, and the overseers paid. This explains why the profits from the seven weeks were £1,482 out of a sale of £2,666. This is exceptionally high profits judging by other reckoning books, often there is a loss of many reckonings, or only a profit of a few pounds, but Portaway was one of the richest mines in Derbyshire in the 18th. century.

At the end of January 1754 the mine workings went forward under the boundary of Elton Liberty, and the partners wrote to the Duke saying that part of the workings were held up until a shaft could be sunk in that Liberty, and this would take about eight months to sink. Possibly this is the gin-shaft 480 feet east of Dudwood Lane, and 370 feet north of the road to Elton. This delay would mean a stopping of work and a great loss, and they would have to dismiss about forty to fifty of the work-people. Also there were heavy expenses of almost £50 a week without which the forefield could not be worked. They requested permission from the Duke to allow them to draw ore up their shaft in Winster Liberty from the workings in Elton Liberty and without therefore paying lot and cope on the drawing of this ore up the shaft in Winster, but only the duty due in Elton Liberty. This would not harm the Duke, as Lord of the Winster Liberty, as he was a partner in the mine, he would gain. A letter from Godfrey Heathcote to the Duke suggests that this should be granted and adds 'how much worse the whole works has grown'. This comment on the

worsening of the mine is interesting, as later these workings to the north were to become very rich.

By 1756, the partners had stopped working Portaway Mine, no reason is given, but it may be due to the costs of the lawsuits.

No detailed history has come to light as to the working of the mine later in the 18th. century, but the surface hillocks, the shafts, and the size of the vein up to Coast Rake on the Nuttall maps, indicate even more extensive workings than old Portaway in Winster Liberty, and Pilkington⁷ states that he had been informed that, about 1789, the Portaway Mine produced ore worth £4,000 in seven weeks. This suddenly rich ore is typical of a pipe-working, with rich lumps of ore easily worked, but with added water troubles. It is probably at this period when another pumping engine was installed, which would almost certainly be at the northern end, to pump on the down-dip, and perhaps using the old sough from Dudwood Cottages as a pumpway. Farey states that at one time there were two steam engines on this mine, and that at Portaway there was much lead, and manganese, and that the vein was 600ft. wide. Mr. Eric Fisher says that Portaway Pipe is a series of pipes, with no definite vein, and he can understand how Farey gives this width, adding one pipe to another.

The northern part of Portaway, in Elton Liberty, was re-worked several times during the 19th. century, and also early this century. In the 1940's at the most northerly shaft it was worked by Mr. Eric Fisher, for Messrs. Enthoven, the smelters of Darley Dale. This is now known as Enthoven's Portaway, it has also been Coast Rake Mine. This shaft communicated by a cross-cut with Yatestoop Sough, for the workings were now far below the old Winster Sough, and had been since the latter part of the 18th. century. This shaft is 500ft. deep. Mr. Fisher says that although Coast Rake is said to be a fault, there is no throw anywhere on the rake where they worked at Enthoven's Portaway, but there was an anticline in the toadstone. Magnesian limestone is the ore-bearing bed. This closed down after some years. In the mid 1950's Mr. Fisher put up head-stocks on the most easterly shaft, to re-work this part of the mine for fluor spar, at a depth of 325ft.

There is another Portaway Sough, which was pointed out to me by Mr. Fisher. It was driven from the brook, 200 feet east of Dudwood Cottages, beginning as a stone drain, the slabs of which are still visible. Mounds, ranging south, and then south-east, indicate its course to the main road, and it passes under this about 550ft. south of the cottages, ranging almost south from here to Portaway on Coast Rake. It is shown as 'The Sough' on the 1760's Nuttall maps.

If this sough was driven to drain the northern end of Portaway, it is unlikely to be earlier than 1754 when they began to follow the vein into Elton Liberty, it was made by 1766. If it was originally driven to drain Coast Rake it is impossible to date it, but this does not seem likely, for if they were working Coast Rake here, it seems strange that they did not discover its junction with Portaway Vein, hundreds of feet wide, before they did. It could have been used as a pumpway before Yatestoop Sough came to here. As Winster Sough is not depicted on the 1760's maps, but this one is, it seems possible that the former, then over seventy years old, had ceased to function.

NOTES. Nat. Grid. Portaway Veins (a broad band about 5-600 ft. wide, with several branching veins. North-west direction) approx. from SK233604 to SK231613. Also it may range further to the south-east of this. Sough-tail (site of) approximately 242.611. Wills Foundry (or Founder) Mine, either 235607 or 238608 (either field 154 or 114). Shaft on Winster Sough in field near Plackett Lane 239609 (field 85). Plackett Plantation about 200 feet south of the last shaft, 239609 (field 116). Plackett Veins, approx. from the church to 238611. Buckdale Shaft 233606 (field 173). Orchard Mine 241604. Eller Stub Shaft 232606 (field 162). Heyspots Shaft 231608

(field 103). Elton Cross Shaft 230610 (field 100). Position of the rither and the Breck Veins. Junction of Portaway Veins and Coast Rake 231603 (field 96). Enthoven's Portaway 230613 (field 95). Mr. Fisher's Portaway Shaft 232611 (field 49). It is called Winster Sough in 1689, 1692 and 1707. Portway Mine is the oldest form of the name, 1656-1709. Portagate 1689. Portway Yate 1689, 1703. Portaway is later, 1789 (Pilkington), 1815 (Farey) and Portaway appears to be the modern spelling.

Lickpenny Lane is to the west of the Miner's Standard Inn, and Grifsell Grove was on the south side of this lane, on what, in 1736, was Winster Common. Both these mines, to the south of the Portaway Vein are listed among those planned to be unwatered by the sough.

Leadenham Grove has various spellings, Dr. Cameron (Place Names of Derbyshire) gives Lednams Grove 1673. In mining records it is Lodnam Mine (1713), Leadnames (1740), Leadnums, Ledmans, Leadmines, Lednames (1830). On the O.S. map Leadmines Farm, with mines round it, is south-east of Elton.

There are a number of entries in the early 18th. century which refer to Ladys (or Ladeys) Plackett, but nothing to prove which Plackett Mine this was. On the 1760's plans Old Plackett Vein ranged from the north to the south-east side of Plackett Plantation.

Buckdale Mine was re-worked earlier this century, and an incline was driven on the 240ft. level. There was much water, and two submergeable pumps were used. The shaft was a fine one, lined with dressed, curved, gritstone blocks, and at the bottom of the shaft was a finely made arch of gritstone supporting the shaft. In 1767, 'the great fire engine' at Plackett was sold for £1,460. (Nixon, F., The Early Steam Engine in Derbyshire. Transactions of the Newcomen Society, Vol. XXXI. (1957-9) p18.).

There was a steam engine on Plackett Mine in the 1770's, for when Hillcarr Sough was being driven under Stanton Moor and many springs of water were cut, the lodge in which the Plackett pumps were fixed was drained dry. There is a local tradition that one of the engine boilers on Plackett blew up, and that this stopped the pumping and the mine flooded and was closed down.

The paying of lot on smitham was a controversial question. At Dovegang Mine, near Wirksworth, in a suit of 1652, Francis Archedine of Wirksworth deposed that 'forsted ore pays Cope byt no Lott'. Forrosted, fausted, forstid, ore, was that found on hillocks which had formerly been washed and left as rubbish. Later it is referred to a hillock ore, and in 18th. and 19th. century reckoning books, grove ore (i.e. mined ore) is distinguished from hillock ore in the accounts. In the 1665 Wirksworth Barmote, article 12 says that lot is 1/13th., 'But we say that Smytham nor forested Ore Hath not, within the memory of man, paid, or ought to pay, any duties or part, but Cope only'. But in 1773, in a Chancery case, between Mr. Rolls (or Rolles) and the miners of the Low Peak there was a verdict in favour of paying lot on smitham in the Low Peak, probably the verdict in the Portaway case influenced this decision, although one wonders on what grounds he won his case, in view of the 1655 Barmote. The Duke's case against the Portaway Miners, of the High Peak, appears stronger, as it could be based on the Quo Warranto of 1288 which does not define the kinds of lead ore subject to duty, for article 5 says, 'And the King shall have the thirteenth dish of measure of ore, which is called the lot' and this applied to the high Peak.

Pilkington (1789) says that smitham and belland were once considered to be free of lot. By this date both the High and Low Peak paid lot on all ore. The Miners Guide of 1810 states that lot is 'justly and customarily paid but we say that Smitham and Forested Ore hath not, within the Memory of Man, paid, nor ought to pay any Duties or Part, but Cope only.' Mander repeated the same. Bray's 'Tour of Derbyshire' (1783) says that after the Duke of Devonshire won his case as

being entitled to lot on all ore, he generally took only $1/25^{\text{th}}$. to assert his right. 'Mr. Rowles, who is lessee of the Crown in the Low Peak, has had the same dispute, but takes the thirteenth'.

When dressing the ore, it was drawn up the shaft in a bucket-shaped corve or kibble. This was unloaded onto the striking floor (sometimes called the bank), where the boose, as the contents of the kibble were called, were sorted into bing, which was lumps of pure ore which could be broken down by the chipping hammer and taken directly to the bing-heap in the ore-coe (sometimes called the bingstead or bingstid). The pieces of ore mixed with other minerals or stone went to the knockstone, where women with buckers separated the ore from the waste, the ore was knocked down to about the size of peas. The knockstone was often a flat stone, but metal ones also were used. In 1787 a metal one cost £1-11-6d. and was 5-8 ft. long. A bucker was a flat piece of iron and a loop handle, there is one in Derby Museum. Knockstones and buckers have been found underground, as sometimes rough dressing of the ore was done there. The waste from the knockstone which contained no ore was called deads, and was put into the hillock-wisket (basket) and thrown onto the hillock. Women called cavers picked over the hillocks, rescuing small pieces of ore.

The washers each had a large tub (ore-vat) nearly full of water, and a sieve or riddle, which they sank into the water and shook and tossed, at intervals skimming off light particles from the top and throwing them away on the hillock. The large pieces of ore, or rounds, were removed, until only fine pieces of ore (peasey ore) were left on the sieve, this they sent to the peasey-heap in the ore-coe. The small pieces which fell through the sieve were allowed to accumulate in the dirt until the vat was about two-thirds full, then they poured off the water and pushed the smitham to one side with a spade, and washed off the dirt and sludge to the buddle-hole. This last still contained fine ore, and the kind of which was no more than a fine dust was called belland. Buddling was done in flowing water, in a wooden trough or a hole in the ground. Farey mentions 'new methods' of buddling, and that buddling had hardly been used before fifty years previously, but there are a number of references to it in Derbyshire much earlier, even in the 17th. century, and it is depicted in Agricola in 1556. In a document of the 1760's, when tools were being valued on some Castleton mines, spades were about 5d. to 9d. each, buckers were 1/8d. each, sieves ranged from 1/- to 3/6, and buddles were 1/3 or 1/6d each.

Amongst the Chatsworth papers is one headed 'Riddle', and a 6in. square is divided into sixteen squares, and there is a 1748 reference to the riddle having sixteen squares in 6 in. According to Farey, the ore-sieve was fifty-eight wires in 17 inch or some had sixty or seventy-two wires, 17 inch being the diameter of the sieve. In 1581 a Special Commission was appointed to enquire into the custom of working the lead mines of Derbyshire in the High Peak and Wirksworth, with particular reference to the use of an iron sieve.

There is an indication of the richness of Portaway Mine on the south side of the Elton road in one of the Chatsworth Documents which contains George Heyward's calculations as to the value of the Lords Meer in one of the Breck Veins. Comparing this with the value of the two founder meers in the same veins, the ore measured from these at the last reckoning was 1175 loads, sold for £2,346. The charges for the fire-engine, pumpers, etc., for 34 weeks was £629, Cope payments £762, profits being £955. There remained part of the founder meer still to be cut, which was estimated at the value of £297, with estimated charges for this of £240. So he reckoned that the profits for the whole of the two founder meers would be about £1,078, and that the Lords Meer would be valued at £539 if it turned out to be like the founder meers. In a letter from Mr. Mort, the Barmaster, to me, he says that the highest figure he has seen for a Kings Meer (this is the same as a Lords Meer) in the Kings Field, was £300. That seems to be a quite usual price in a number of documents, though a mid-18th. century reference to a Lords Meer on Hucklow Edge Vein says that this was sold for £420. In 1728, £31 was paid for one at Yatestoo Mine, Mr. Mort mentions one as low as £5. The miner must not trespass into the Lords

Meer and mine ore out of it, though this was sometimes done, and fines imposed. If the miner could not afford to buy the Lords Meer after the Barmaster and two of the Jury had inspected it and given a valuation, then he could work his way through it, because otherwise he could not work his way from his two founder meers to his taker meers, but he must not take any ore out, he must stack it in the Lords Meer underground.

From October 1746 to December 1753, a total of over 31,850 loads of pure and valuable lead ore was produced at Portaway Mine, and which was sold for £63,718, and it was claimed that if 1/13th. duty had been paid on all of it, it should have brought in over £4,000 to the Duke.

Ferber visited Winster (1770's) and notes that most of the mines there were 'overflowed', among them he mentions Plackett and Portway or Portaway, a pipework.

Viscount Torrington, coming to Winster from Birchover in 1790, remarked that 'all the country is scooped with lead mines, and their levels; betwixt Winstre and Elton are the great lead mine of Port-way.' He praised Winster as being a 'much better and gayer place than Bakewell', but commented that when he stopped in Winster churchyard to search for inscriptions on the tombstones, he could not find them as the nettles were so high.

¹ Tibbets Collection. 366(4-5), 462-470.

² Green, A.H. et al. 1887. The Carboniferous Limestone etc. of North Derbyshire, pp.144-5.

³ a - Nuttall map 1768, in possession of Mr. M. Brooke-Taylor.
 b - Nuttall map 1769 in possession of Mr. J.P. Heathcote, this has the enclosure walls shown on it, so positions can be placed with great accuracy.
 c - An undated Nuttall map, a copy given to me by Mr. F. Sheen. The Portaway Veins also are shown.

⁴ Cox, C. 1899. Calendar of the Records of the County of Derby, p180. Deed between John Steere of Stancliffe, and John Bullock of Chattersworth.

⁵ Copers were a team of miners under a miner who would bargain for a certain length of vein, and to mine and raise the ore for an agreed price.

⁶ There are three plans among the Chatsworth Papers, one is very diagrammatic , but added together they form a reasonably clear picture of the workings.

⁷ Pilkington, J. 1789. A View of the Present State of Derbyshire. Vol. 1. P.130.