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Yatestoop Sough by Nellie Kirkham.

The entrance to the Yatestoop Sough is on the west bank of the River Derwent, about 200 feet upstream from Cowley Brook. The arch is of dressed gritstone, about 4 to 5 ft. high, and 2 to 3 feet wide at the bottom, and wider at the arch, the measurements being guessed. It is well above river-level, and set back some yards. The flagged floor of the sough is clear of silt and the flow of water very strong. In 1847 the flow was 500 gallons a minute.

From the tail it is driven for about 1800 ft. at about 20 degrees south of west to a shaft just on the north side of Mill Close Mine buildings, and a short branch from it goes to the two pumping shafts, that of the 80 inch cylinder Harvey engine (“Jumbo”) and the double shaft of the 50 inch Thornhill and Warham engine, brought from Old Mill Close Mine about 1889, and the 60 inch brought from Wakebridge Mine about 1891 (“Baby and Alice”), The linking branch to these shafts is called Warrencarr Sough by the lead miners, and they also often refer to Yatestoop Mine and Sough as Stoop Mine and Sough.

In 1955, Mr. Eric Fisher and Mr. Sidney Shirley took me down the double pumping shaft, which is about 75 ft. deep (from the collar of the Harvey engine shaft). All the engines have now been removed, and this is now a laddered shaft, used for pumping water for the use of Enthoven’s Smelting Works. A short branch level leads to the Harvey engine shaft, where the water is now dammed up. Forward, along a short level, leads to Yatestoop Sough, and it is possible to get westwards along this for about 450 ft.

The sough is driven in very hard unlined shale, which makes one appreciate why so many of the 18th. century miners drove shale gates. Mainly it is about 6 ft. high, and little more than 2 ft. wide, with the flow of water very swift and strong. The occasional obstructions over which one has to crawl or stoop, appear to be due to falls, not to silt, only occasionally is the water thigh-deep. Finally there is a large fall right across the sough, and only a small open space near the roof with water pouring over. The main impression is the sound of rushing water, which pours down the sough, coming off the shales, flows over the dam at the Harvey engine shaft, and rushes strongly along the sough.

We passed under an upward shaft, which may be one mentioned to me by Mr. William Slack, who was a pumpman on Mill Close Mine. He said that a wheel of a cart once sank into it, and irons and plates were put across it. He also said that there was at least one other upward shaft before Sabinhay but they could not see daylight up it. The last time he went up the sough was in 1937, and they got about as far as Sabinhay, but there they could “smell a touch of gas” but could see the sough still going forward, and the water was only up to their shins. All this way was in unlined shale, with occasional packing in the roof. The method of cleaning the sough from Mill Close Mine to the river was with a “prong-pusher”, which he described as a sort of two-pronged fork, something like a gardening fork. This part of the sough was silted up with refuse from the dressing floor, and caked quite solid. They made a centre channel with the fork, and then the strength of the water-flow cleared it.

The shaft-mound at Sabinhay, about 400 ft. from the tail, is on private ground, and a very large hillock is shown on the O.S. map. It would be an important shaft for drawing up waste and sludge whilst the sough was being driven, as westwards the ground rises. No local enquiries, or field-work, has revealed any mounds or shafts beyond this until Yatestoop Mine, 3600 ft. away.

At Yatestoop Mine, by Upper Town, south of Birchover, were the later Newcomen engines. From here the sough continues westwards, approximately on the north edge of the Birchover boundary, passing under Birchover lane to a shaft on the west side of this, by a bend in the lane. This is a shaft with a passageway in the mound, and there is a local tradition that this was a “coaling shaft” down which coal was tipped to be taken to the underground engine,

but this theory is equally strongly denied locally. A passage in a shaft mound occurs in a number of shafts unassociated with an underground engine.

About 400 ft. to the west of this so-called coaling shaft, on a Nuttall map[1] Placket Level is shown turning from the main sough at right angles southwards to Placket Mine. The main sough continues under Whiteholmes Farm, being driven on Coast Rake.

Between Whiteholmes Farm and the main road from Winster, there is a valley, and on the floor of this, where Coast Rake and the sough cross it, is an open shaft, down which water can be heard. The Derby Troglodyte Caving Club have been down it for about 170 ft. It is not all in one drop, and is very wet. At the bottom there is much silt, but they did not get down to the sough.

The sough drained Portaway Mine by 1815, and Mr. Eric Fisher informed me that it was continued to Elton Mines by Wass who was the manager of the Mill Close, in the later 19th. century, and that it drains mines on Coast Rake to the west of Elton.

The history of Yatestoop begins in 1702 when the founder was freed, and in Barmaster's Books at Chatsworth from then until 1715 many breaks from this vein were freed, and also on associated veins. Even before historical evidence came to light it was obvious that the vein could not have been first discovered on the hilltop where Yatestoop Mine is now, near Ivy Farm, through 400 ft. or more of shale-capping, and that it must first have been discovered and worked well to the south of here.

Proof of this came to light at Chatsworth[2] in the Books of the Barmaster of Wensley, John Baddeley. When the entries are studied, it becomes quite certain that the Founder of Yatestoop Vein is to the south of Weet Sough (See map), that is well to the south of Mill Close Brook in the valley. The 11th. break in Yatestoop Vein was a break at Weet Sough Shaft. In the years between 1702 and 1715 the titles possessed by Yatestoop were checked several times, and in the last year they possessed a total of 357 meers in all their veins and breaks, and these included 36 meers in Painters Way Vein, and in Limekiln Breck and several other veins. Apparently, although it is not definitely stated, they owned Weet Sough, as there are a number of entries in the Yatestoop title for break veins from this sough.

On the Nuttall maps, Yatestoop Vein is shown ranging north to south through the shafts on the top of the hill by Ivy Farm, until it takes a sharp angle to the south-east towards Painters Way Farm, and Farey states that the vein is crooked. No vein on the south of the Brook is shown on these maps of the 1760's, but as the southern part had been worked 50 years previously, probably by the time of the maps it was of little importance.

In 1714 the title on Yatestoop Old Vein was 31 meers north west from the founder Shaft, this being in the "nether nook of Geo. Clark's Close". No amount of local enquiry, or field work, or much thought, has placed this, bit it must lie somewhat south of Wet Sough Lane, and west of the boundary of Wensley.

In 1734 Yatestoop Vein was discovered to be "directing its course towards the village of Birchover"" which appears as though the sharp angle to the north was then discovered. It was 1749 before the vein was worked to the north of the Birchover boundary[3], so that up to that date all the pumping engines were in Winster Liberty. Therefore the first atmospheric engines could have been on the south of the Brook.

The date of 1720 has been established by Mr. Frank Nixon for the first engine[4] in John Baddeley's Barmaster Books at Chatsworth. The writing in these is terrible. There are words which neither Mr. Nixon nor I have been able to decipher. One word, in an entry of 1715, which Mr. Nixon queries as "fire-engine", and which, he says, "would be very exciting", I read as "first engine", i.e. the first gin-shaft of the vein.

In the history of any mine or vein, it is unusual for a great deal of ore to be obtained within a year or two before a pumping engine was installed, as obviously the owners did not go to this expense unless the workings were under water. Yatestoop Mine had a good year in 1716, and in 1719[5]. 1720 was a good year, so it seems possible that an engine was installed a few years previously, although even 1720 is an early date for a Newcomen engine, and 1721-2 were good years, 1725-6 were poor years.

Somewhere between the installation of the first fire-engine, and 1730, two more were erected at Winster, and 1728, and 1729, were good years for ore production at Yatestoop. But the total three engines mentioned by the Rev. Clegg in 1730 are not stated to be at Yatestoop Mine[6]. Neither is the payment in Richard Beech's accounts of £5-14-3d. to Joseph Jones for carrying a cylinder from the Coalbrookdale Works to Winster in 1725[7], and I cannot agree with Mr. Nixon that "there can be no reasonable doubt that these fire engines were installed at the Yatestoop"[8]. Quite certainly the site of these earlier engines were not on the top of the hill, in Birchover Liberty.

The Rev. Clegg gives a good description of the Newcomen Engines in 1730. He "came to Winster about noon. Saw 3 curious Engines at work there, which by ye force of fire heating water to vapour, a prodigious weight of water was raised from a very great depth and a vast quantity of lead ore laid dry. The hott vapour ascends from an iron pan close covered, through a brass cylinder fixed to the top, and by its expanding force raises one end of the Engine, which is brought down again by the sudden introduction of a dash of cold water, into ye same cylinder which condensth the vapour. Thus the hott vapour and cold water act by turns and give ye clearest demonstration of ye mighty elastic force of air".

The years 1732 and 1733 were good years for the mine, and among the Portaway papers at Chatsworth is an account of lot ore collected in the Liberty of Winster, from Lady Day 1730 to Michaelmass the same year, "Att Stoop 95 loads 7 dishes att £2-5-0d. per loade, £216-10-0d." this being the highest priced ore, and the most paid as lot at any of the mines.

In John Baddeley's book the 1720 entry reads that the Barmaster gave "possession of a 24th. of a seventh part of the fire Ingen and all the oar that shall belong to the above said part att the Yatestoop it being part of a composition belonging to Mr. Sparrow his undertaking at the Yatestoop", this being an arrest made on behalf of Mr. John Gent against Mr. George Hatrel, for not, "coming in and answering the arrest", and according to the custom of the mine the Barmaster transferred the above shares to Gent.

Besides being an important date for an early Newcomen engine, this entry is interesting from a Derbyshire lead mining point of view, because the mention of pumping engines is rare in Barmaster's Books, and this one reveals that shares were held in the engine under the cost-book system, just like shares in a mine, and that the shareholders paid their contribution to the charges at a reckoning, called "coming in", and that it came under the mineral laws and customs, in that, like a mine, it could be arrested, and that composition was paid in ore, as it was to a sough.

There is a further entry of shares in the fire-engine in 1738, of John Ford 6 shares, Henry Robinson 6 shares, Hannah Newcombin 6 shares (this name is not clear either to Mr. Nixon or to myself. He describes the Barmaster's writing as looking as though it was written "upside down and backwards"), William Holmes 19 shares. Another entry of 1740 states that the Barmaster had been desired by Mr. Hornblower to make an entry of 6 shares of the fire-engine at Yatestoop "purchased of Mr. Henry Robinson merchant in London by Capt. Wm. Playter of the same place. N.B. the above shares are to go out of the Staffordshire partners share of the same Fire Engine as above," these shares being sold with all the materials belonging to the fire engine.

When the names of those who were connected with these early engines are investigated, the venture at Yatestoop assumes an importance in mining and engineering history outside the confines of Winster, and Derbyshire.

In 1720 when the fire-engine is first mentioned, it is called, “Mr. Sparrow’s undertaking”. A sister of Rowe Newell (who took the name of Port, of Ilam, near Ashbourne) married Burslem Sparrow of Wolverhampton. This Burslem Sparrow, by the end of the 1730’s, was and old customer for cylinders etc., from the Darby Works at Coalbrookdale. The Christian name suggests a family link with North Staffordshire, and in 1770 there was a John Sparrow at Newcastle-under-Lyme. By the mid-19th. century, and perhaps before, there was a Sparrows Field Works, of iron and coal masters, at Wolverhampton.

I have not been able to trace a John Gent, though there were members of this family in South Derbyshire. The Gent family of Moyns Park, Essex, had been in that county since the 14th. century, and in the 17th. century one of them married Anne Playters of Sotterley, Suffolk.

The Hatrels (or Haytrel) were connected with fire-engines, and with Richard Beech. The latter was a good customer at the Coalbrookdale Works, buying many fire-engines, and parts of them, including the cylinder for Winster in 1724, and also with engines for mines which he leased at Hawarden, Flintshire, as early as 1713. Dr. Raistrick states that he was from Walton, near Stowe, South Staffordshire, other authorities give Walton, near Stone, in the northern part of that county.[9] There is a connection of the Beech family with the Hatrels and with Newcastle-under-Lyme. In 1724 a Richard Beech of Walton, owned Newcomen engines at this place as well as at Hawarden, and a daughter of his married Thomas Hatrel of Newcastle-under-Lyme, and by 1738, “Madame Hatrel” (or Haytel), a widow, was managing a mine with a fire-engine at Hawarden. Another Thomas Hatrel (b. 1752) married Dorothy Coke of derby, and their daughter married a Jervis of Meaford Hall, near Stone, who was the brother of the famous admiral, the first Earl of St. Vincent (1735-1823).

Mr. Hornblower, concerned with the Yatestoop fire-engine in 1740, will be either Joseph Hornblower (1695?-1762) of Bromsgrove, Staffordshire, the grandfather of the Jonathan who made compound engines, or will by his son Jonathan (1717-1780) who erected atmospheric engines in Derbyshire and elsewhere by 1745. Joseph is said to have worked under Newcomen, and to have erected these engines on Cornish mines after 1725.

Henry Robinson (or Robison), citizen and merchant of London, was also concerned in the erection of a Newcomen engine in Midlothian in 1724.

The first atmospheric engine, erected in 1712 on a coal mine near Dudley Castle, Staffordshire, was not owned by the coal mine owner, but Newcomen bargained to draw the water, and the engine remained his property. So the same sort of thing may have obtained with the first Yatestoop engine, which could explain how all these non-Derbyshire people had shares in it.

There is a gap in the history of the engines until 1768, when a “New Fire Engine” is shown on the top of the hill, in Birchover Liberty, on the Nuttall map. In 1777 Francis Thompson, of Ashover, engineer, made an atmospheric engine for Yatestoop[10] with a 70in. cylinder, which was erected on the hilltop. Both Smeaton and Farey state that the water was lifted 90 ft. up to a sough or level which was 600 ft. below the surface, so that the engine worked with dry rod this depth.[11] They state that the injection water was lifted this 600 ft. “from the level to the surface”. The engine was overburdened by the great length of spear, and also with having this great lift for the injection water, although it worked in this way for five years. Then, in 1782, another engine by Thompson was installed underground at the same shaft, using the same pumps. An excavation of 1200 cubic ft. was cut underground, costing £300 before the underground engine house was built of “good gritstone” with a lever wall 5 ft.

thick, and side walls 3 ft. thick. All the materials were lowered down from the surface. The boiler was 20 ft. diameter, and the flue of the chimney was up a shaft (see below).

The 600 ft. depth from the surface to the sough is quite impossible by the contours on O.S. maps, and the only explanation seems to be that Smeaton and Farey both confused the deep level which was the sole of the workings, (i.e. the lowest depth from which the water was lifted 90 ft. to the sough), with the sough-level to which the water was lifted. This is borne out by a letter from Thompson to Watt. This letter of May 1780 says that Yatestoop Mine has "now got more water than it is able to draw" (i.e. the 1777 engine), "their rate of working-barrel of the pumps" was "all in one head for 30 yards deep out of the vein and house water – 200 yards from the Deep leavil to the top." They were about to put in a new pump and take out the three old ones for they were in bad condition. The engine used 47-8 tons of coal a week at 14/- a ton.

On the authority of Mr. Nixon, the 1777 engine was offered for sale in 1782, and had cast iron working-barrels of 6 in., 8 in., and 15 in. diameter, and 200 yards of plain piping.

An illustration to Mr. Nixon's article, from Smeaton, shows the 1782 engine with the boiler to one side, and the sides of the boiler rest on solid uncut shale. It has generally been assumed that this, and other underground engines, were erected at sough-level, but, as this diagram shows that the whole of this underground engine house was excavated in shale, with shale beneath it, this appears to be impossible in this case. First there is Ferber's 1776 evidence, in which he states that the depth of shale at Yatestoop Mine was 420 or 450 ft. Taking the position of the fire-engine shaft (and any of the more southern ones are more difficult still) at approximately 860 ft. O.D. on the surface, this brings the bottom of the shale to 440 ft. O.D. or 410 ft. O.D. The evidence of Mr. Sheen (see below) at the more southern shafts gives a depth of shale which fits with Ferber as Mr. Sheen says that the beds appear to be dipping northwards at about 10-15 degrees. The given total of 600 ft. depth, with the lift of 90 ft. makes the sough at approximately 340 ft. O.D. at the mine, (all these figures can be only approximate) a rise of gradient in the sough of 10-20 ft. per mile can be expected. Which makes the engine, at the most, nearly 100 ft. above the sough, with this length of dry rods, but excavating in shale was so much quicker and cheaper than in limestone, that it would be a better proposition than erecting it at sough-level in limestone. This seems to indicate some re-thinking about the few other engines which were erected underground, lifting water to soughs.

The beds must dip north or the pumping shafts would never have been at the deepest part of the mine, below the surface, evidently they were pumping, as often, on the down-dip, with the vein sinking under water as the ore-bearing beds dipped northwards, and it is understandable how, when Hillcarr Sough was being driven in the 1770's[12], when it cut springs which affected underground water for a good distance, there was "a considerable diminution of the water at the Yatestoop Mine was experienced".

Farey (1815) lists a total of five engines which were at Yatestoop, two at Plackett Mine, two at Portaway, and one at Limekilns and Drake, and states that the first one erected on any mine was at Yatestoop. The five engines here might not mean that they were actually on Yatestoop Mine and Vein, for "Yatestoop" could mean the Yatestoop title on all the veins held by the partners.

The shafts must now be considered. The southernmost one which is still open is Shaft D. (Mr. Sheen's lettering) which is 1500 ft. east of south of Ivy House. An east to west cross rake is shown here on the 1760 maps, and, seen from above, the discoloration of the ground suggests that quite large hillocks have probably been removed. There is a gin-race on the north side. It was descended in 1959. It had a direct drop of 310-320 ft. and it was estimated that it was shale for about 70 ft. and a shale gate appeared to go off at about 50 ft. The shaft was limestone ginged, and the sides were covered with much flowstone, making it very safe. The explorer's reported a "stink of sulphretted hydrogen". The shaft became more

rectangular at the bottom where there was much silt. By calculation of depths it seems as though they must have been about at sough-level. By digging through some of the silt they got into workings going northwards, and climbed up and down, and the workings widened out into worked-out pockets, but it was very unsafe, and shattered, with fallen stones, etc. Mr. Sheen said that to him it appeared to be faulted. There were also workings on an east to west cross-vein. He said that the silt had been washed in, but there was no sign of water, though there were “tide marks” on the walls in places. Also there was clay, not in wayboards, but giving the impression as though mining had been done in it, which sounds like pipe workings where the ore is found in clay and soft matter.

The next shaft is 170 ft. north of Shaft D. just on the east edge of the hedge, and is a climbing shaft in the foundations of a coe, which plumbed to 300 ft. An iron pipe, 9-10 ins. In diameter, crosses the shaft-top, from north to south direction, and which appears to be incorporated in the ginging. Above this shaft, also on the east side of the hedge, is a very large crater of a run-in shaft, nothing is known, or can be surmised about this, it is not possible to approach very near to it with safety.

Shaft A. is 540 ft. north of Shaft D. and is in a tangled thicket at the bottom of the wood, it is 360 ft. deep with the limestone approximately 150-200 ft. down, and at 290 ft. they were in a high worked-out rake vein, about 10 ft. wide, ranging north and south, the way was entirely blocked to the north, and the explorers could only get about 50 ft. to the south. It was considered that the rock was decomposed dolomite, the beds dipping about 10-15 degrees north. More than any other shaft I favour this one as a possible pumping shaft for one of the three first Newcomen engines. They reported that the shaft was “a monster being some 10 ft. by 12 ft. below the ginging”, and this was supported by gritstone arches like bridges. The bottom was in a bad state and they did not find a way off, though Mr. Sheen thought that he saw a level in the shale, but owing to the continuous downpour of water, and the size of the shaft, he was not sure. On the surface the shaft is on a flattened piece of ground, large enough for an engine house.

The next shaft (Shaft B) is 200 ft. to the north, in a hollow underneath the nearly vertical hillside which rises to the wall which is the Birchover boundary. Very faint writing in the 1768 map in the Mining Magazine seems to state that this was a drawing shaft. Discussing this shaft with them, we all decided that we did not like the look of it, and it was not descended, and consequently it became known as the “shaft in the ‘orible hollow”. It was 201 ft. deep, with 6 ft. of water, and the ginging had all gone. One very interesting point was that it could be seen that it had very blackened walls, which seems as though it was the one used as a chimney for the underground engine.

Over the Birchover boundary, which means after 1749, there are many hillocks apparently all of sinking dirt. The forefield shaft of the 1760’s, about 130 ft. north of the boundary, is now a run-in hollow. By the mine-map the site of the fire-engine erected by 1768 is just to the south of the barn. A channel runs down the hill southwards among the hillocks, and as the injection water was lifted by the 1777 engine, there may have been a reservoir.

At the northern end of this field, 120 ft. north of the barn, is a large mound with an open shaft. The mound is flat-topped, with the appearance of having been an extra large gin-race. This is Shaft C, and it was plumbed at 350 ft. There is no sign of dressing hillock, or dressing floor, and there would not be a drawing shaft for this purpose on the hill-top, when it could be at a lower contour. It is an assumption, and I think a logical one, that this is the shaft down which they lowered the parts of the 1782 engine, and that 350 ft. is not its total depth, but is about the limit, judged by other gin-shafts, to which the horse-gin could lower in one drop. Below, it is normal for it to go in stages, a short level, then a sump, then another level, then another sump (or underground shaft).

In 1958-9, Mr. Sheen, Mr. Wheatley, and Mr. Buckley, made attempts to descend this shaft with their motorised winch. They uncovered the shaft, but it was full of CO2 to within 10 ft.

of the top. Leaving it open for a prolonged period cleared it, which they proved by "lowering down a mouse, and he returned in fine shape to be rewarded with cheese and milk". Complete with radio communication, Mr. Sheen was lowered down, but in about 70 ft. he came to the end of the ginging, and he described layers of stonework peeling off, and "large lumps were hanging on nothing" so he was raised again, and he believes that the whole shaft will collapse if nothing is done to preserve it. And so ended what has been a most determined effort to get into Yatestoop Mine which has been made in recent years.

Yatestoop Vein was a pipe as well as a rake in Winster Liberty, according to Farey it was in shale and limestone, with much lead, and the vein was crooked. In an undated document in the Devonshire Collections, it states that "the ore lay in hard stone", not in "soft matter, like the ore at Portaway Mine". Farey states that Yatestoop Sough was 2¼ miles long, and was driven in shale and first limestone, and cost upwards of £30,000 and took twenty-one years to drive, and by the time he was writing he says it had reached Portaway Mine.

Ferber[13], visiting Derbyshire in 1776, says that there was 420-450 ft. of "arcillacious schist" (shale) in Yatestoop, and that the miners called it "shale, hards beds, penny shale, or black-beds". In places there were bits of limestone in it, and it had a fetid smell. He called the mine Yatestoop or Yatestock.

The name Yatestoop does not seem to have been explained. "Yate" in Derbyshire is "gate", but, as place-name authorities point out, it is difficult to distinguish between the present meaning of "gate" and "gate" which is still used in the county for a way, or a road. "Stoop" is an upright stone, and therefore used for a gate-post or "gate stoop". In 1816 there is reference to a field (unlocated) connected with Yatestoop Mine called Stoop Piece. Stoop Mine, and Stoop Plantation on the old O.S. maps are at the northern, later, part of the mine, and so cannot have anything to do with the name Yatestoop started far to the south, over forty years earlier, and must be a later naming. In the Chatsworth Barmaster Book, as early as 1719, there is a distinction made, but not explained, between stoop Mine, and Yatestoop Mine. In a conversation with Mr. Mort, the Barmaster, and Mr. T. Corker, the latter remarked that the name Stoop in Derbyshire lead mines, only seemed to be used in this part of the area, and Mr. Mort said that a stoop was a name for the cross-trees of the shaft (part of the stowes).

After the founder was freed in 1702, for the next dozen or so years a succession of taker meers were freed to the north west, so that one has the impression that mining was continuous and prosperous, and that the adjoining veins of Limekilns, Shack, and Drake were the same. Weet Sough, would drain the early part of the vein if this was on the south of the main road, but was at too high a contour to drain to much depth if the vein was dipping northwards, all of which indicates richness coupled with water, to explain the early purchase of a pumping engine by 1720.

One wonders if it was the mining being done on all these veins, and others in Bank Pasture, which attracted the Quaker London Lead Company to Winster. In 1720 they sent their agent to examine mines in Derbyshire, and George Greaves took up many meers in many veins in Bank Pasture and sold them to the London Lead Company[14]. This is the area south of Limekilns and Drake, ranging about half a mile on the south of the road. Among the veins which they took over, Longtor Vein had been worked before 1712, and Horse Hay before 1715. Then the Company proceeded to drive the Old mill Close Level, and to work veins to the east of those held by Yatestoop.

In 1727 John Johnson, overseer at Yatestoop, freed for a new vein, which had been discovered by the partners, "in carrying their level to Burning Drake", and which had been found not far from Shack forefield engine shaft foot. Level, in this context, in Derbyshire documents, always appears to refer to a sough, and there does not seem anything here at this date except Weet Sough.

Farey states that there was an engine on Drake and Limekilns, but no information about this has come to light, except that one appears to have been in use in 1771. The most likely position for a pumping shaft for these, and associated veins, appears to be just on the south side of the brook, about 500 ft. west of Painters Way Farm. It is an open shaft with a large pipe passing into it, with a continual and strong flow of water pouring down, and local information says that it is sewage. On the east side of the shaft there appears to have been a gin-race, but the mound, with a flat top, extends further eastwards, and also there are signs of building foundations a little to the east. The earliest reference to Drake is in 1712. Farey states that Limekilns and Drake have caverns in the first limestone, and that besides lead there was petroleum, and gravel. White Watson (1811) says that Drake was a pipe vein, and on the Nuttall map it is indicated like Portaway Pipe, though not so broad a band. In 1714, the Duke of Devonshire's agent sold a Lord's Meer in a Break from Burning Drake for £60 in hand, and £10 "when the way is made" – which perhaps is Drake Lane. In 1787, the prospect at Drake was much better than it had been, but three years later, John Barker, one of the partners, was writing that this mine "had long been unfortunate" and was poor at present, though there was reason for hope, as formerly it had produced a considerable quantity of ore, and lay in a "good part of the country".

Weet Sough has a number of mentions in John Baddeley's Barmasters Books. In 1705 Yatestoop partners freed the eleventh break in their Old Vein, at a breck at Weet Sough Shaft foot north, the next year in Painter's Way Vein they freed takers at Weet Sough, in 1708 they freed the 6th. breck out of the sough. In 1715 the Barmaster was called to view the Yatestoop possessions, and notes that the Weet Sough Breck Vein broke out of Shirley Furlongs at the foot of Long Hiter(?) Hillock, this was an old breck. Also, there was a third breck from the sough, ranging north-west, for the fourth breck out of the sough was Limekiln Breck, which was in Yatestoop title. There were other brecks out of the sough, which would make it a useful sough to drive, and may have paid its cost by working the veins it cut. A number of the entries make it appear to belong to Yatestoop, Limekiln Vein certainly did, but not Drake, at that time anyway.

There appears to be only one place for Weet Sough. If Wet Sough Lane is followed to the brook, over a fence on the west side is the run-in entrance to a sough, in the form of a cut-back between two slightly raised banks. As there are mounds up Wet Sough Lane, presumably this is its line, and, carried up to the top of Painters Way, it could drain part of Limekilns and Drake, and other veins, and possibly Horsebuttock Mine and others on the south of the road. Dialect dictionaries give "weet" as "wet, still in use", last century.

In a document in the possession of Mr. J.P. Heathcote, dated 1766, it states that about at the time of an agreement between the Duke of Devonshire and "Mr. Gilbert" in 1749, "Yatestoop Vein entered Birchover very remote from the surface of the earth", and a shaft was sunk in that place at which the miners raised considerable quantities of ore, "although they could not on account of the water pursue the vein for 1/4th. of a meer".

In this year there was a complicated legal wrangle, Gilbert v. Duke of Devonshire, in Birchover. When, in 1734, Yatestoop Vein was discovered to be "directing its course towards the village of Birchover", it was presumed that it would range under land belonging to John Gilbert, and the question arose as to whether Birchover was a private liberty outside the jurisdiction of the king's Field, or whether it was a parcel of the latter. Gilbert produced witnesses who deposed that Birchover was reputed to be a private liberty, and he also produced a lease from Mr. S???????? (the Duke of Devonshire's agent) to Mr. Thornhill of Stanton-in-the-Peak, and others, for mining in Birchover, and in that lease it was called a private liberty. The lessees were partners in Yatestoop Mine, and it was stated that it was probably taken out in case it turned out that it was a private liberty, but no mining was done.

But the other side in the dispute produced Court Rolls of the Clerk of the Market, and several deeds from the Duchy of Lancaster office, showing that Birchover was a parcel of the Duchy of Lancaster, and it was admitted that it was within the High Peak, and in consequence in the

lease from the Crown, though there could not be uninterrupted usage as no mineral works of any extent had been carried on in Birchover previously.

Gilbert answered that there had been a small amount of mining, and that Mr. Eyre of Birchover had got four or five dishes of ore in Birchover without paying duty, and that he had burnt the stowes which the miners had erected. The Duke's side said that probably the amount of ore obtained had been so small that the Barmaster had never had notice to attend and measure it, and that if he had, the amount was too small to be liable for lot, and that when this was the case, the cope and freeing dish were seldom or never taken, and that there was a lease of mines in "Burnt Wood in Birchover", from Mr. Eyre to Mr. Norman and other miners, which included an indemnity against the payment of lot and cope to the Duke of Devonshire, and tithe to the Duke of Rutland, and that Mr. Eyre would not have entered into this had Birchover been a private liberty.

In 1749, John Gilbert sold his estate in Birchover to Bache Thornhill of Stanton, and immediately he obtained possession, Thornhill entered into two negotiations, one with Mr. Silvester and the partners of Yatestoop Mine, and the second with the Duke of Devonshire. The Yatestoop partners agreed to pay Thornhill 1/12th. of all ore got in his land in Birchover, as satisfaction for mining damage. By 1766, "the Company of miners in London" held half of Yatestoop Mine shares and Silvester's agreement had been transferred to them. By this date Bache Thornhill was dead, and his infant son, with his mother as guardian, succeeded him. Finally she agreed to allow mining, but the miners must not erect stows lest these should become evidence against the claimed right of exemption in respect of the Bircgover estate, and the miners must pay lot. The ore was measured alternately by the Thornhill agent, and the Duke's Barmaster, "who acted as Private Agent and not as Barmaster". Each of them took a dish of the same standard, and for some time they took 1/13th. lot. "But the miners, being at great expense in drawing off the water", the duty was diminished, and only every 1/19th. taken until the mine was overpowered with water and it became necessary for the miners to drive a sough, and this was begun, "which has not till lately been accomplished and the mine is now in profitable workmanship", (1766).

Cowley Sough – as it was first called – was begun in 1743, and in 1757 there was an amalgamation of the Yatestoop and Cowley Sough partners, who continued it as Yatestoop Sough, and completed it in 1764, at the cost of £30,000.[15]

In 1766 there was more trouble, this time between the Yatestoop partners, and Lady Masserene. She owned a small estate in Birchover, which she inherited from her father, Thomas Eyre of Birchover, and which was let for about £8 a year, and Yatestoop Vein was expected to range under this, and she claimed the same exemption from mining laws which Thornhill had claimed. Reference was made to the Thornhill agreement with the miners, and she and Thornhill were to take 1/25th. lot instead of 1/13th. But apparently she had to divide this with Thornhill, and she considered that if her lot was only 1/50th., it was not worth having her ground disturbed. In this dispute there is mention of an agreement with Thomas Eyre in 1706 of a lease for, "the Liberty of Soughing and Mining in Boult Wood" for a term of 99 years on payment of 1/12th. of the ore. The various agreements mention Bolt Wood, or Boot Wood in Birchover, Boult Wood is not now in Birchover, but even if it was of greater extent, 1706 is too early for any known mining or soughing in Birchover, unless it is a shaft in Clough Wood.[16]

Among the Portaway documents at Chatsworth is one which states that Yatestoop was the only mine in the Liberty of Winster where the Duke of Devonshire had allowed abatement of duties.

In 1771, George Haynes, one of the overseers at Drake and Limekiln Mines, received a letter from Mr. Smith, saying that the proprietors of Yatestoop Sough would take a full 1/6th. of ore at the next measure for composition to the sough, but Drake and Limekilns complained that, "we are not yet sensible of the least relief afforded us by the sough, but are obliged to be at

a considerable expense in pumping and lifting the water", and that Yatestoop would not take this expense off their hands even if they paid the full composition. They had agreed to this composition, but had not signed it, and did not expect to pay until the sough relieved them of water. In answer some of the Yatestoop partners said that they would not demand composition at present.[17]

In the same year an agreement was made between the partners of Cowley Sough and those of Long Looked for Mine.[18] Among the former were Lord Scarsdale, Peter Nightingale, several of the family of Twigg from Holme, Bakewell, Henry Thornhill of Chesterfield, Thomas Southern of Wensley, and they held a moiety of this sough, and The Governor and Company for Smelting down Lead with Pit Coal and Sea Coal (the London Lead Company), who held the other moiety, on the first part. Also Lord George Cavendish and two of his brothers on behalf of the Duke of Devonshire (a minor), Alex Barker (the Duke's agent), Henry Thornhill, and John Twigg and others, who were partners in Long Looked for Mine, on the second part.

This mine was, "deep underground and greatly annoyed with water", so that it could not be worked without a sough or by other means of draining it. The sough had been brought up to Yatestoop Mine, and the partners in the sough had agreed with the partners of Kirk Croft Mine to bring up a level from the sough, and this would be likely to unwater the near-by Long Looked for Mine. They would do this at their own cost, the miners paying composition of 1/12th. of their free ore, that is, free of lot and tithe.

Kirk Croft is the five acre enclosure (field no. 152) on the south of Placket Lane, north-west of the vicarage. There is a shaft in the north-west corner, and some mounds ranging south-east. Probably both the mines were worked with Wills Founder, on the north side of Water Lane. Among John Barker's letters[19], in 1790 he writes that the shares in Wills Founder and Long Looked for, "are of little value, scarcely worth retaining providing anyone will purchase them". Three years previously Portaway Mine taker meers, and sough veins at this point had been consolidated, and were to be called Wills Founder.

This is the latest reference which has come to light which calls Yatestoop Sough by its older name of Cowley Sough, and the branch to Kirk Croft must be a continuation of Placket Level.

In December 1772 there is a brief note, "trial begun at Yatestoop", but three years later the Barmaster arrested the mine on behalf of "sundry workmen for money due to them". Many of the proprietors could not pay their share of the reckoning, and among them Adam and Benjamin Dawson had agreed to give up their shares, and to "suffer ye people who have arrested to take ye Mining Engine and other materials for their money".[20]

Dr. Raistrick states that in 1775 the Derbyshire accounts of the London Lead Company showed a considerable loss on the year's working, and the next year extensive reports were made, and considered, on all the Derbyshire mines. Their half share in Yatestoop and Cowley Sough was sold for £2,640 to the other partners, and "all mines in Derbyshire except Mill Close, Watering Close and Ballington Wood were sold", these being kept on in a quiet way, and the final surrender of all leases occurred in 1792, and "it seems fairly certain from other sources that all activity ceased in 1778". In a Bagshawe document it is stated that in 1780 the Company said that they had given up their mines in Derbyshire. Watering Close, somewhere just to the east of Weet Sough and Ballington Wood, has not been traced.

There does not seem to be any evidence that Yatestoop was ever re-worked after the 18th. century except a few times in a small way, and without pumping, so that it must have been in old workings, above sough level.

National Grid Locations

Yatestoop Sough tail	SK265625
Sabinhay Shaft	SK252625
Yatestoop Mine (after 1749)	SK243616
Shaft at Birchover Lane	SK239616
Whiteholmes Farm	SK236615
Elton Mine	SK222610
Shaft A	SK244614
Shaft B	SK244615
Shaft C	SK244617
Shaft D	SK244612
Weet Sough Tail	SK248619
Possible Drake and Limekiln pumping shaft	SK242610
Painters Way Farm	SK246610

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1 Four Nuttall maps. (1) In the possession of Mr. J.P. Heathcote, "A Plan of the Mines and Veins of Lead Ore in the possession of the Partners and Proprietors of Portaway, Placket, Yate stoop, Limekiln and Drake as they stood possessed in 1769. Survd. And delind. By J. Nuttall. (2) 1768, Nuttall map in possession of Mr. Michael Brooke-Taylor. (3) very small reproduction of a Nuttall map in the Mining Magazine, October 1942, dated 1768. (4) Copy of a Nuttall map, undated, given to the author by Mr. Frank Sheen. They are very similar but differ slightly.

2 Barmaster's Books A-H, Devonshire Collections, Chatsworth.

3 Document in the possession of Mr. J.P. Heathcote.

4 Nixon, F. 1957-9. The Early Steam Engines in Derbyshire. Trans. Newcomen Society. Vol. XXXI, p.1-2.

5 A loose sheet among the Portaway Mine documents, "Ore measured at Yatestoop from John Baddeleys Book". Devonshire Collection, Chatsworth.

6 Clegg, Rev. J. Extracts from the Diary and Autobiography of. Edit. Kirke, H. (1899). p.41. See Nixon, F. ibid. p.2-3.
Kirkham, N. Old Drowned Work in Derbyshire. Derbyshire Archaeological Journal. LXX (1950) p.1-20.

7 Raistrick, A. 1953. Dynasty of Ironfounders. p.132-3.

8 Nixon, F. ibid., p.3. There were other important mines in Winster.

9 Raistrick, A. ibid. p.131.
Jenkins, R. Collected Papers, p. 80.
Davies, A.S. The First Steam Engine in Wales 1714. Trans. Newcomen Society. XVIII (1937-8), p.69.

10 Newcomen Soc. Extra Publication No. 5. Cat of Civil and Engineering Designs 1741-1792 of John Smeaton. Vol. III Fire Engines for Raising Water.
Farey, J. 1827. Treatise on the Steam Engine, p. 237.

11 It drew the water 90 ft. by two pumps, one of 25 in. and the other 14 in. diameter, the house water was drawn to the surface by 9 in. pumps in four lifts.

12 Report on Alport Mines 1839. Brooke-Taylor Documents.

[13] Ferber, J.J. 1776. Essay on the orycography of Derbyshire.

[14] Raistrick, A. 1938. Mill Close Mine, Derbyshire 1720-1780. Proceedings Univ. Durham Phil. Soc. Vol. X Pt. 1, p.39.

[15] Raistrick, A. ibid. p.41, 45-6. Dynasty of Ironfounders, p.142.

[16] Chatsworth Estate Documents, Chesterfield Library

[17] B.C. 494.

[18] Box 76, No. 17, Devonshire Collection, Chatsworth.

[19] B.C. 494.

[20] B.C. 431a.