

XV.—LEAD MINING IN EAST AND WEST ALLENDALE.

BY L. C. COOMBES.

Rising on the slopes of Killhope Law, the East and West Allen flow northward, at first in parallel courses separated by a moorland ridge, and then united from Cupola Bridge to the South Tyne, some fourteen miles in all. From the wooded gorges of Staward and Plankey one passes upstream to the more open valleys around Allendale and Whitfield, but the higher one climbs so the moorland edge creeps down to stream level until the last enclosed field is left behind and the bare uplands alone remain. Here in particular was the once prosperous lead mining country of the Allen Dales (fig. 1, p. 246). There are several records of lead mining in the district before the sixteenth century.¹ In 1565 Mathew Bee of Ninebanks opened three mines at Grewslacke, Spartywell and Bates Hill.² This early mining was carried on near the surface by means of shafts following the vein downward and raising the ore by kibbles or small tubs. The seventeenth century saw the emergence of a new name, that of Blackett, which together with that of Beaumont was to continue its association with lead mining for another two centuries. William Blackett, a Newcastle merchant, later to become Sir William Blackett, purchased the Manor of Hexham. Already connected with lead mining in Wear-dale, he began an era of more intensive exploitation of the mines. Mining by means of levels, used both for draining the mines and drawing out the ore, first began towards the close

¹ See S. Smith—*Lead and Zinc Ores of Northumberland and Alston Moor*, 1923.

² *Northumberland County History*, Vol. III, p. 110.

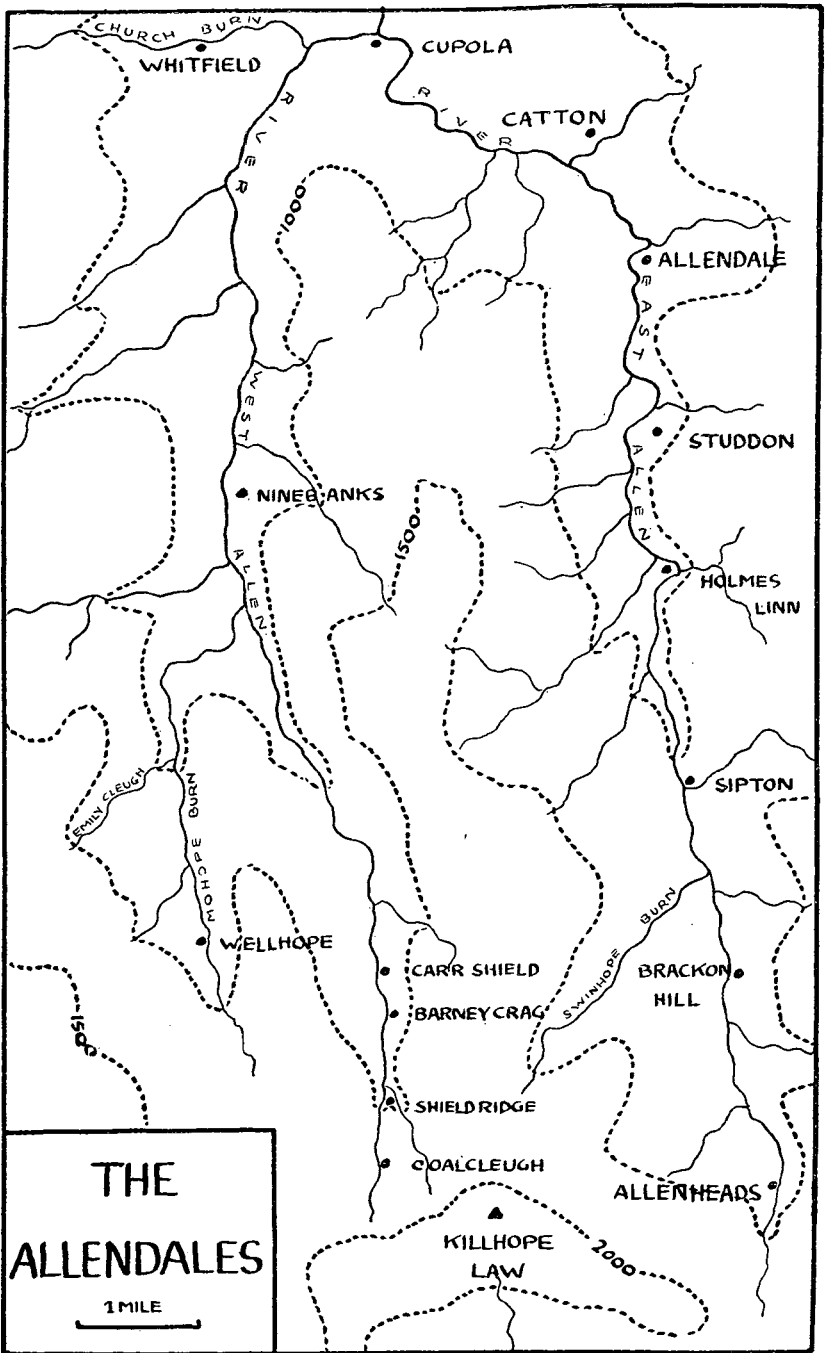


FIG. 1.

of the seventeenth century. Dickinson³ states that at Shield Ridge Level in West Allendale a stone was found bearing the inscription:—

IN 1684 W.B.
BEGAN THIS LEVEL
IR. IC. WL. CL.

W.B. may refer to one of the Blckett family. A copy of the inscription appears on a plan of the mining area drawn by John Bell in 1789.⁴ At Allenheads the Haugh Water Level was begun by Sir William Blckett in 1684.

That the lead mines were now entering a period of expansion and development is suggested by the building in 1703 by Sir William Blckett of a chapel at Allenheads for the miners and later the building of a house for a minister who read prayers every morning before the miners began work, at the same time giving £10 per annum to a school-master for teaching miners' children to read and write. The stewards and miners at Coalcleugh also built a chapel there. Thomas Sopwith, in a paper read to the British Association meeting in Newcastle in 1863,⁵ claims that Smeaton introduced a new phase in mining in the north. Smeaton built the Nent Force Level in 1775 while employed by Greenwich Hospital in the Nent Valley. Mining by means of levels was now firmly established. By this means a level or tunnel was driven along the side of a vein and the ore drawn out by wagons and horses instead of as formerly by whimsey shafts on to the vein from the surface as one would draw water out of a well. Wooden rails were first used, cast iron rails being introduced in the Nent Force Level and later into other mining areas. The wagons were small, 6' × 1' 6" at the top narrowing to 4' × 10" at the bottom, being 2' 6" deep with a total height of 4 feet. In 1760 the Barney Crag Horse Level

³ Dickinson—*Allendale and Whitfield 1884*.

⁴ North of England Institute of Mining and Mechanical Engineers (hereafter N.E.I.M.M.E.)—Watson Collection.

⁵ *Newcastle Daily Journal*, Sept. 2, 1863.

was commenced (plate XXVIII, fig. 1). The Fawside Level at Allenheads was begun in 1776 by Westgarth Forster, then agent for the mines, and at Coalcleugh by 1789 the Coalcleugh Horse Level was in use and both the High and Low Coalcleugh veins were worked from levels. The result of this great advance in mine haulage was to increase the output of the mines. Sir Walter Calverley Blackett, who died in 1777, was receiving £5,000 per annum from his mines at Allenheads⁶ and Hutchinson records that by 1772 more than 7,500 tons of lead was being shipped from the Tyne.⁷ The first records of production from the Allenheads and Coalcleugh Mines begin in 1729. Clearly then the eighteenth century was a period of expansion. To handle the increasing volume of ore required more smelt mills. The London Lead Company purchased the old mill at Whitfield in 1706, the Allen Mill, at Allendale, was opened in 1692, and the Allenheads Mill between 1700 and 1725. Of these mills Whitfield, closing in 1816 more than half a century before the others, has disappeared without trace, only the name Cupola (a type of furnace) perpetuates its memory; only the peat house at Allenheads remains, while part of the Allen Mill, with its single chimney and collapsing arches, is now used as a builders' merchant store (plate XXVII, fig. 1).

A consideration of some of the factors which may have determined the sites of the smelt mills brings out the problem of transport which became less pressing after road building began early in the nineteenth century (fig. 2). No roads existed in West Allen before 1826. Hodgson, describing the Parish of Whitfield in 1749, states "the roads through the parish were trackways and the principal employment of the people was the conveyance of lead ore to the neighbouring smelt mills in sacks on the backs of ponies". These ponies or "galloways" were the only means of conveyance of lead and coal over the moors. The tinkling of the leader's bell

⁶ Straker—*Sir Walter Blackett*, 1819.

⁷ W. Hutchinson—*Hist. and Antiquities of the County Palatinate of Durham*, Vol. III, 1794.

must have been a familiar sound over ways which are now seldom trodden. These carrier galloways moved in packs of 12 to 30 in single file over the moorland tracks with one "gall" always the leader, travelling by well-known routes, the softer parts of which were set with stones and along sunk ways when travelling up slopes. Each galloway carried two hundredweights, usually with two attendants, a man and

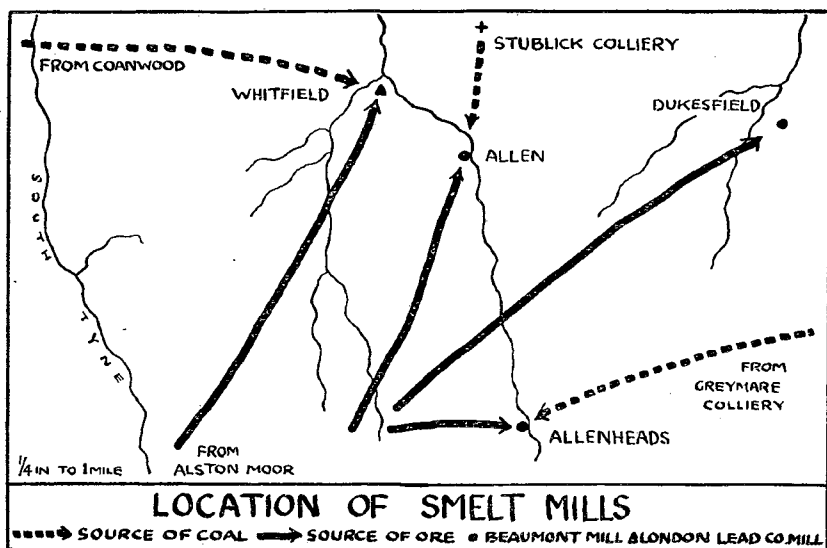


FIG. 2.

a boy. The cost of this transport was closely related to the season. In winter when the ways were soft each galloway had to have a lighter load, more were therefore required and the number of attendants increased, doubling the cost of transport at this season.

Coal was required for smelting the ore. The Allenheads Mill drew its coal from the Greymare Colliery, S.W. of Whittonstall. The carriers were sometimes dishonest, carting their coal first in carts and then in sacks for the galloways. The price of coal and its carriage was charged by the sack,

and by using sacks of different sizes some made a fother of coal (2,352 lb. in Newcastle) into ten or twelve sacks. Not until the introduction of a uniform sack was this practice stopped. There was no shortage of coal of a sort. A list of coal pits dated 1865 shows 36 coal workings in the parish of Allendale.⁸ Only one, the Stublick Colliery, is stated to have been used for smelting. It is known that Langley Smelt Mill did use Stublick coal and because of its proximity to the Allen Smelt Mill there is a strong possibility that Stublick supplied this mill also. The colliery was working in 1700 and by 1774 was producing 6,000 fothers per annum.⁹ That the London Lead Company established their Whitfield Mill in order to reduce transport costs is clearly shown by the following quoted from Raistrick's "The London Lead Co. Two Centuries of Industrial Welfare".

	£	s.	d.
5 bings of ore may yield about 1 fother of lead and may be carried to Whitfield (from Alston Moor) for		13	4
The fother of lead carried to Ryton		13	4
		1	6
Five bings carried to Ryton		1	15
So there will be saved carrying it to Whitfield			8
The coals may be dearer at Whitfield than at Ryton for smelting so much ore. So that a fother of lead would be cheaper at Whitfield than at Ryton by		1	4
		7	0

Coal for the Whitfield Mill came from Coanwood where the London Lead Company either owned or leased mines. Their continued interest in Coanwood coal during the eighteenth century is shown by a report of Thomas Barnes in 1792 where he recommends that a £90 per annum certain rent should be charged "if the London Lead Co. became lessee of the colliery".¹⁰ The price of local coal at this time is difficult to determine. Coal from Fourstones Colliery near Haydon Bridge was selling at 2½d. a load in 1739, a load

⁸ Allenheads Estate Office (hereafter A.E.O.).

⁹ N.E.I.M.M.E.—*The Barnes View Book*.

¹⁰ N.E.I.M.M.E.—Easton Books, *View Book 1802—25*.

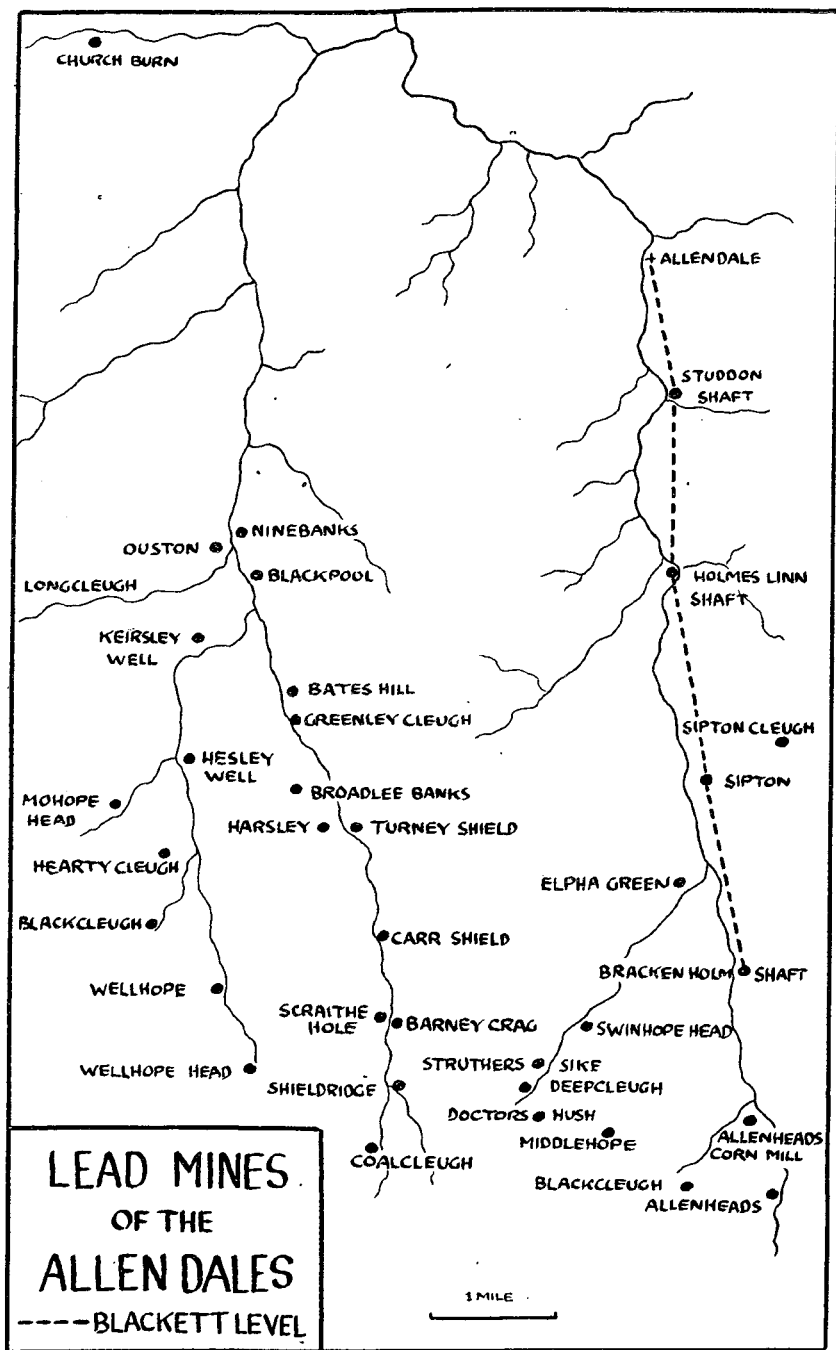


FIG. 3.

being a Hexham corn bushel,¹¹ while John Leithard of Mill House, Alston, writing in 1830 in a document to Thomas Sopwith,¹² states that crow coal (coal from local mines) was selling in Alston at 2½d. per Carlisle peck, while coal from Hartley Burn, near Coanwood, and a much superior coal, was 5d. Whatever part transport and coal supplies played in siting the mills they all have one feature in common, being situated on the two main rivers. These rivers supplied water power, the only power available, which operated water wheels supplying, by means of bellows, the blast for the furnaces.

The progress of the eighteenth century continued into the next. The established mines of Coalcleugh and Allenheads continued to yield their wealth in increasing abundance. New mines were opened. Not all worked for many years, Turney Shield Level 1813-1815, Broadlee Banks 1804-1810, Greenley Cleugh Mine 1800-1810, Low Greenley Cleugh 1802-1808, Bates Hill Level 1814-1818, Swinhope Mine 1815-1872, while in 1822 the Corination Vein in the Allenheads mine with associated flats was discovered, yielding great quantities of ore, "cavities after cavities were broken into full of ore". These ventures indicate the expansive mood in which the century began (fig. 3). This expansion was to receive a check in 1830 when the price of lead fell to £13 per ton, and the lead trade suffered its first depression. In 1820 the price had been £22½ and in 1810 £32. The population figures for the parish of Allendale reflect this period of recession, increasing by 19 per cent between 1811-1821 and 1821-1831, but by only just over 3 per cent between 1831-1841. The effects of this depression may have been the cause of Thomas Sopwith's comment that when he took over the agency of the mines, now known as the W.B. Lead Mines, he found that repairs had been neglected and costs were rising.

Thomas Sopwith was appointed agent for the mines in 1845. A surveyor and engineer, he applied himself to the organization of the mines. He had many friends in the

¹¹ N.E.I.M.M.E.—*Barnes View Book 1774*. ¹² A.E.O.

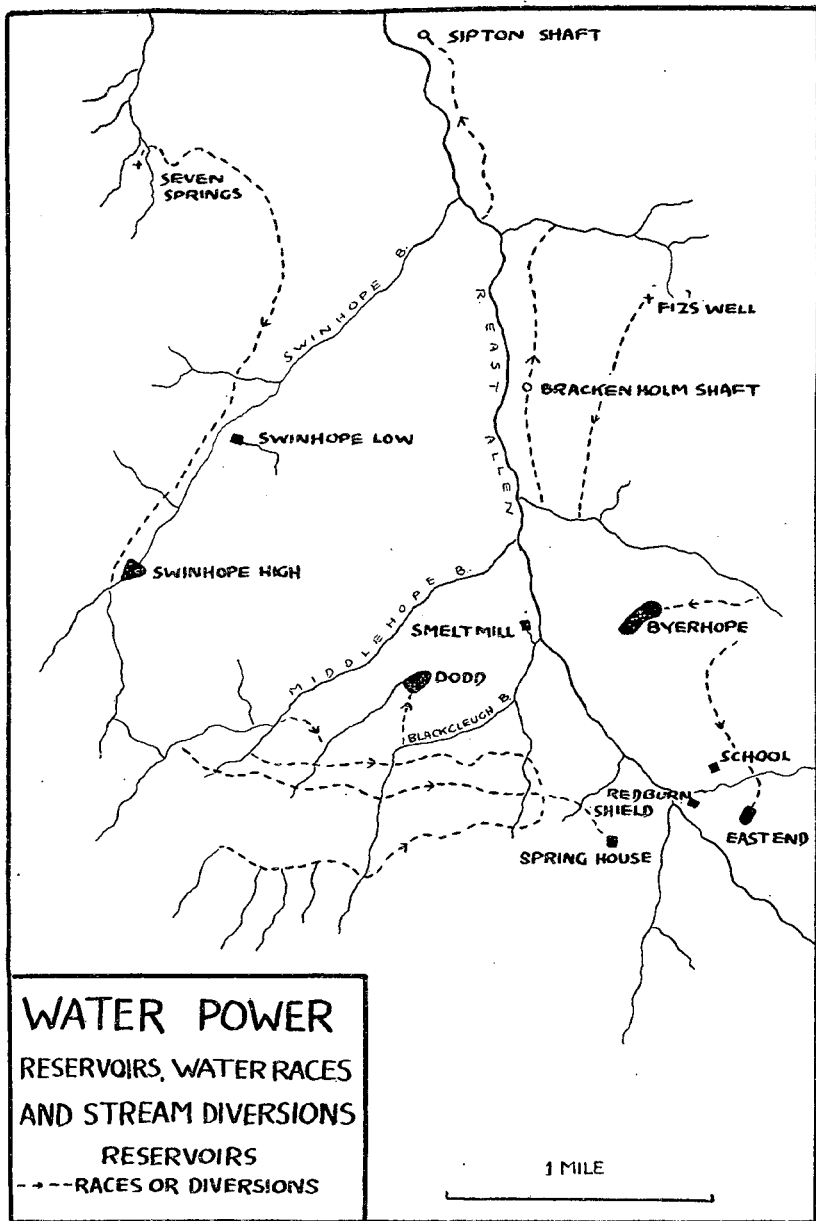


FIG. 4.

scientific and engineering world of that time, among them being Michael Faraday and W. G. Armstrong of the then Elswick Engine Works. He lived partly in London and when in the north at Allenheads Hall, which was built for him. His work can be divided into two parts, firstly dealing with the technical side of mining, and secondly the social and educational schemes which he sponsored. Early in his work at Allenheads he received a special grant of £6,000 per annum from T. W. Beaumont for exploration and improvement with the result, as he states, "the very face of the country at and near Allenheads has been absolutely changed". New machinery was installed, new buildings erected, a new crushing mill and workshop built. The new machinery was in particular Armstrong's hydraulic engines. An old miner, Mr. J. H. Nixon, Valley View, Allenheads, informs me that nine such engines were in use. Two were underground at Fawside Level in Allenheads mine, one at the main shaft at Gin Hill, for sending men down and drawing bouse (i.e. ore) up, one at the saw mill, one at the dressing floors for driving the crusher, and four were installed at the shafts on the Blckett Level. These engines being water driven made necessary the further development of water power. Mention has already been made of the use of water power at the smelt mills. The ore was crushed by water driven machinery. The huge wheel at Sipton survived until demolished in 1957 (plate XXVII, fig. 2). It is estimated that, about 1870, 500 h.p. was applied to machinery in this way. This was achieved by the construction of reservoirs and races, the water passing from the highest points in the valley downstream, operating a water wheel or used in washing before passing on to the next plant. There were ten reservoirs in all (fig. 4). Beginning in Wear-dale with Corbett Mea reservoir the water passed down Corbett Mea shaft and along the level in pipes to the high and low underground engines in the Allenheads mine and from these was discharged into the Fawside Level and so reached the dressing floors at Allenheads (plate XXVII,

fig. 3), where it was joined by other water. After being used for washing it was conveyed by adit under Allenheads village over four wheels in shafts and passed away by the Haugh Adit to the East Allen. Here it united with water from the smelt mill and Dodd reservoirs. Between here and Allendale the river was diverted at several points by races so as to pass over wheels at Bracken, Sipton and Holmes Linn shafts and also to operate four corn mills, finally being led to Allen Smelt Mill. Sopwith probably did not construct all these reservoirs but undoubtedly built some of them. Accounts of metal and other goods received at Allenheads from W. G. Armstrong, Elswick Engine Works, Newcastle,¹³ between 1848 and 1851 show that from November 1848 to August 1849 almost all the material was for the Spring House School, East End, Byerhope and Corbett Mea dams. Later follows material for the high and low engines. During 1849 and 1850 more than 500 consignments of tools and equipment were received. So important was water to the mines that in 1865 when a bill was before Parliament for Tyne improvement proposing that "no ballast, stone, slate gravel etc. be cast into the Tyne or any material laid on the banks of the Tyne which might be washed in", W. B. Beaumont petitioned against the bill claiming that it might be construed to cause interference with the proper working of the mines.¹⁴

The purpose of the Blakett Level was to explore and drain the valley from Allenheads to Allendale. This ambitious scheme, on which £120,000 was expended, began in 1854 when on October 4 Thomas Sopwith cut the first sod for the Holmes Linn shaft (plate XXVIII, fig. 2), his wife beginning another and his daughter Ursula the Sipton Shield shaft. There were four shafts in all which were to reach the surface from the level, the two mentioned and shafts at Brackon Hill and Studdon Dene. Of the two latter Brackon Hill was never completed and Studdon Dene did not reach the surface. At these shafts hydraulic engines were installed

¹³ A.E.O.

¹⁴ Copy of Petition in Allenheads Estate Office.

(plate XXVII, fig. 4). If finished, the level would have been nearly seven miles long, but only $4\frac{1}{2}$ miles was completed. The portal can be seen on the river side below Allendale church. Driving the level continued until 1903, but by this time Allenheads mine was closed and the collapse of mining was almost complete. Later working was no longer by the W.B. Lead Company but by the Weardale Lead Company.

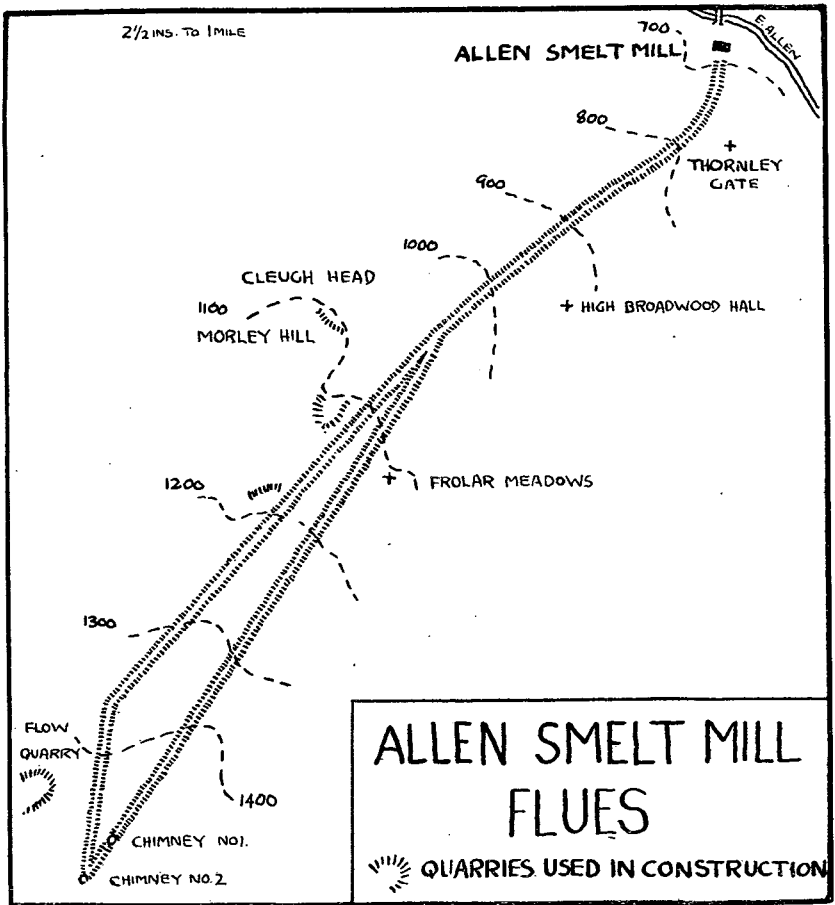


FIG. 5.

The Blakett Level did not yield the results which its sponsors had hoped for. St. Peter's mine and Sipton mine originated from discoveries of veins while driving the Blakett Level, but these, while productive, could not bear comparison with Allenheads and Coalcleugh.

Important technical developments during the nineteenth century were the building of long ground level flues between the furnaces at the smelt mills and the chimneys, and secondly the discovery of a new process for the extraction of silver from lead. The London Lead Company first introduced the long flues and it is worth noting that this company was often the pioneer in the fields of both mining and social welfare among their employees, setting an example which one may surmise must have influenced the other nearby mining concerns. These flues were first built in 1808 from Allen Mill as far as Cleugh Head, and then extended between 1845 and 1850 as far as Flow Moss, the chimney standing at an elevation of 1,496 feet. From Cleugh Head there are two flues which unite at the chimney (fig. 5). These flues were built from stone quarried on the spot at Frolar Meadows, Morley Hill and Ripley Carrs quarries.¹⁵ For all mining purposes there was no lack of stone. The under-mentioned list gives 166 locations of freestone quarries, though unlikely to be all working at the same time (plate XXVIII, figs. 3, 4). These flues were built to convey noxious fumes away to remote spots where they could do no harm, but their primary use was for fume condensation on their sides, the resulting deposit being removed from time to time and made to yield lead and silver which would otherwise have escaped. It is interesting to note with reference to what has been said before concerning the London Lead Company, that by the time these flues were built, this company had abandoned flues in favour of a fume condenser invented by one of their own agents. The credit for the discovery of an improved process for the recovery of silver from lead goes to the Beaumont smelter, H. L. Pattinson, 1796-1858, work-

¹⁵ A.E.O. *List of Quarries 1860.*

ing at the Blaydon Mill. Silver was an important by-product from the smelting of lead. Between 1725 and 1870 the refined silver produced from the Beaumont mills at Allendale, Dukesfield and Blaydon amounted to just over three million ounces. From 1725-1775 production averaged about 5,000 ounces per annum. By 1800 production had reached 20,000, achieving a maximum of 56,000 in 1855.¹⁶ In 1851 a cake of silver 12,162 ounces in weight and worth £3,344 was displayed at the Great Exhibition in London. Pattinson made his discovery in 1833, receiving £1,050 from the London Lead Company for permission to use his process. His employer, T. W. Beaumont, claimed and obtained the right to use the process without charge.

Early in the nineteenth century the possibilities of canal and railway transport attracted the attention of the mining companies. In 1817 the London Lead Company joined in the promotion of the scheme for a canal between Newcastle and Carlisle and in anticipation joined with the Beaumont mines in laying out and completing a road up East Allendale, but the canal scheme came to nothing and the Newcastle-Carlisle railway was built, passing through Haydon Bridge, in 1836. In 1850 Sopwith had prepared a plan and section for a railway up East Allen to Swinhope. This came too late and the Alston line was decided upon and opened in 1852. His scheme, however, was the forerunner of the railway which eventually reached Catton from Hexham in 1867 and was linked to the nearby Allen Smelt Mill. Immense improvements in roads also took place from 1820 onward. In 1826 a new road was made from Weardale through Allenheads and Allendale to Branch End. About 1828 the first coach ran through Whitfield and the West Allen to Alston. The road from Coalcleugh to Thornley Gate, the first road link across the ridge which separates the two Allens, was built about the same time. A map of Northumberland, dated 1827 and 1828, by C. and I. Greenwood, shows

¹⁶ *Lead Smelting in the N. Pennines during 17th and 18th Century.*—A. Raistrick. Univ. of Durham Phil. Soc., IX, 1931-1937.

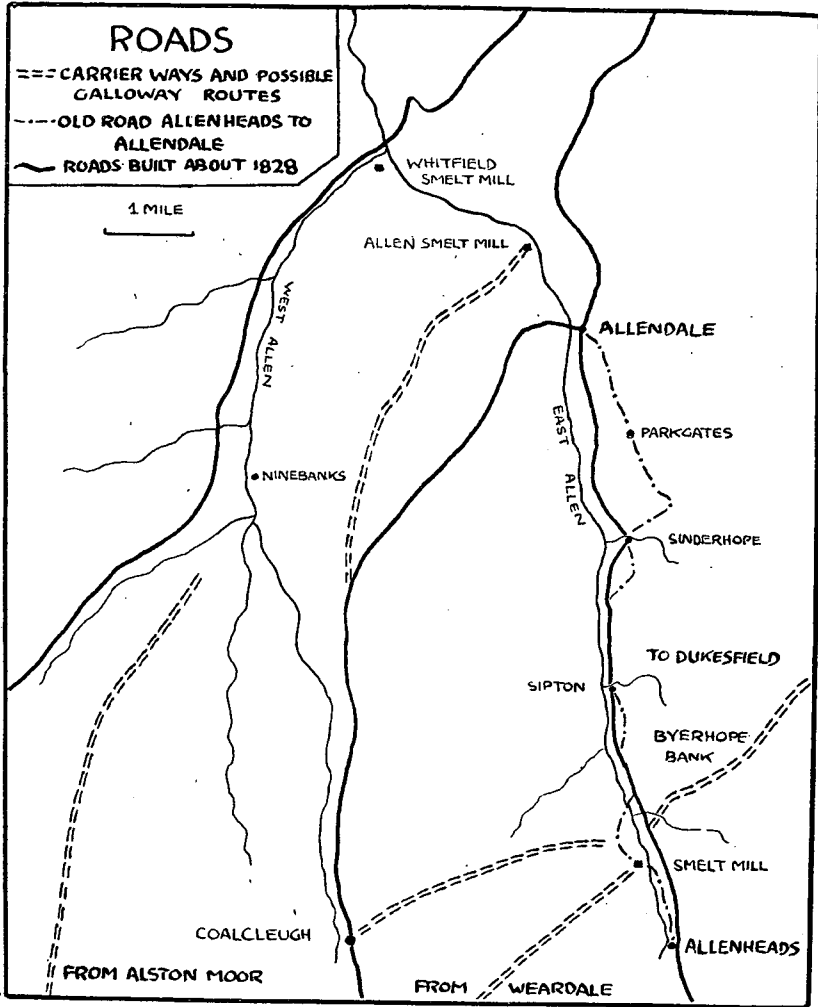


FIG. 6.

this route as "proposed road". Locally quarried stone was used in their construction. From the list of quarries aforementioned, 20 were used by the Turnpike Road Trustees and the Surveyor of Highways, 10 limestone quarries out of a total

of 35 were used for the same purpose (fig. 6). Thus changes and improvements in transport reached these northern dales and began to break down their isolation. The mine owners, realizing the importance of the changes, welcomed them and encouraged their growth. From 1826 onwards the familiar lines of carrier galloways winding their way across fell or along track-ways which had done for roads, became less and less a characteristic sight, but on routes such as to Dukesfield, to which no road exists to this day, the old ways must have lingered for many years. The charges for transporting ore from Allenheads to Allen Mill was 2/6d. per bing in 1859¹⁷ and in 1869 ore was carried to Haydon Bridge from the Long Cleugh mine in West Allendale for the same price.¹⁸

Horses were still supreme in the mines for the drawing of bouse and deads (i.e. stone) to the surface, and remained so until the end. Specifications for horse work in and out of the mines were carefully drawn up in a document containing 43 sections.¹⁷ The more interesting are set out below:—

- 9th All contractors and their workmen had equal rights to medical benefit and educational opportunity as the miners, contributing to the respective funds.
- 15th. Each contractor received 80% of money earned each month, and the balance at the annual pay (vide p. 263).
- 20th. Contractors were supplied with candles which were treated as cash advanced.
- 21st. Hours of work for horses engaged on the surface 7 a.m.—6 p.m. when light, from daylight in morning to dark at night at other times.
- 26th. Each shift of bouse or deads to consist of 8 wagons full as could safely be brought to the surface, and where jonkets were used, the shift to consist of 40 well filled 6-kibble, or 48, 5 kibble, or 60, 4-kibble jonkets. If tubs, then 24 such as used at Allenheads (a jonket was made of wood from the size of a half barrel down to a large wooden pail).
- 32nd. Contractor at Allenheads had option of tenancing 26 acres with stabling for 11 horses at a rent of £40.

¹⁷ A.E.O. Specifications of drawing, haulage and other horse work at the Lead Mines belonging to W. B. Beaumont, M.P., at Allenheads, Coalcleugh and Weardale.

¹⁸ N.E.I.M.M.E. T. E. Forster collection.

34th. At Barney Crag and Coalcleugh had option of 48 acres at £80.

Contracts were sent out specifying the work to be done. Christopher Irving of Alston signed a contract on 19th August, 1859, to draw bouse "Along Fawside, Corbett Mea or Colliers Level from the high underground shaft or anywhere between the Low and Corbett Mea shafts to the surface" at 3/- per shift. For other levels he charged 2/9d. and 2/10d., but he makes a note, "if I have the roads to open and keep so in winter 1d. per shift more for all deads and bouse brought to the bank during the term of my contract". In the West Allen, Mathew Millican of Allenheads signed a contract on September 7th, 1867, "From any to any vein working or place along Barney Crag or other levels to washing floors at Barney Crag. Filling included 6/0", "up and down the Scraithe Hole Level 4/6d." The lighter side of life is shown by such entries as:—

July 15th, 1859 1 horse at Wolsingham with cricket players 5/-.
 Aug. 9th, 1859 1 horse at Frosterley meeting Mr. Beaumonts
 servants 9/-d.¹⁹

Prosperity in the lead mines stimulated trade and business both local and more distant. Mention has already been made of the business transactions with the Elswick Engine Works. The following is a summary from a Coalcleugh bills ledger showing the extent and variety of this trade:—

GUNPOWDER.

From the Sedgwick Gunpowder Mills, Kendal. 1854 purchased 100 half and 200 quarter barrels at 60/6d and 60/-d barrel. 1855. 140 half barrels and 280 quarter barrels totalling £424.

TIMBER.

Michael Muse, Timber Merchants, Skinners Burn, Newcastle.
 Nathaniel Hindhaugh & Co., Timber Merchants, Newcastle.

IRON AND IRONMONGERY.

Robert Hall & Co., Wolsingham Iron Works, for long handed

¹⁹ Summary of Accounts of work done by mining horses—Allenheads Estate Office.

shovels at 30/-d doz, handles 6/6d doz; short handed shovels at 28/6d doz, handles 5/6d doz; middle handed shovels at 30/-d doz, handles 6/6d doz; filling shovels.

John Greenwell, Nenthead, for large and small sieve bottoms.
 Charles E. Cookson & Co. Ltd., Newcastle, for steel and files.
 John Drydon, Ironmonger, Alston.
 Bourn & Co., Ironmonger, Newcastle.
 Birtley Iron Co., Haydon Bridge Ironworks.
 Pattinson, Davison and Spencer, Hexham Ironworks.

NAILS.

Thomas Green, Nailor, Burnstones, for single tack nails, rail nails, rail plate nails, kibble nails, barrow top nails, horse nails.
 Robert Keen, Nailor, Highside.
 Thomas Keen, Nailor, Haltwhistle.

CANDLES.

William Pattinson, Tallow Chandler, Hexham.
 Edward Turnbull, Tallow Chandler, Hexham.

ROPE.

J. Crawhall & Sons, St. Annes Ropery, Newcastle.

MINERS' CLOTHES.

George Short, Tailor, Allendale.

The miners were paid under a system known as quarterly bargains. That is at the beginning of each quarter they agreed to raise ore at a certain price per bing (8 cwts.). This price was arrived at from their knowledge of the vein in the particular part of the mine in which they were going to work. Thus Thomas Sopwith writes,²⁰ "September 26, 1845. Accompanied the Inspector of the mines on their quarterly examination of several workings preparatory to arranging the prices for new contracts." A promising vein resulted in the bargain price being lower than would be the case if the yield was expected to be poor. By the nature of the veins it was possible for a miner to work for a week and produce very little ore. In mining language the vein was "not wageable". To cover this he was paid "subsistence" or

²⁰ B. W. Richardson—*Thomas Sopwith 1891*.

“lent” money whether he produced ore or not, but this money was only lent, when he came to wageable ore he was paid for his ore at the current bargain price less the amount of lent money he had received. Payment was monthly on estimate of ore raised less one-fifth until the ore was washed, the balance, if any, being paid each half year at the “pays”. It was at this time that the miner paid the local tradesmen’s bills. There was in the system therefore an inherent tendency towards indebtedness on the part of the miner. When he was in this position he was said to have got “into the master’s books”. In 1800 the “lent money” was 30/- per month and “pays” occurred annually. Sopwith in 1845 raised the “lent money” to 40/- per month with the “pays” half-yearly, proposing that the miners should receive full earnings up to 15/- per week, with a deduction not exceeding one-tenth on excess of earnings over and above 15/- in aid of arrears. This was approved by a meeting of 228 miners in the school room at Allenheads on December 9, 1845.²¹ This then was the general wage structure. There exists a record book²² of the workings in six lengths in the Low Coalcleugh Vein between 1824 and 1838 which records the progress of mining, the bargains, output per year, and the partnerships of miners working at the time, for it was customary for the miners to work in teams or partnerships. Some of the notes are revealing. For instance, October 1833, William Harrison in a partnership of four—“have nothing but pickings”. December 1837, the same William Harrison in a partnership of six, working on the sun (i.e. south) side of the vein—“barely wageable”. In contrast, July 1826—“immense quantities of ore”. Or Joseph Forster in a partnership of two, after a year’s work in 1835, raising a miserable quantity of ore in the sixth length—“have quitted their ground at Low Coalcleugh”.

²¹ Observations addressed to the miners and workmen employed in Mr. Beaumont’s Leadmines 1846—Central Library, Newcastle.

²² A.E.O.

OUTPUT, BARGAINS AND WAGES IN THE 5TH LENGTH
OF THE LOW COALCLEUGH VEIN OF W. HARRISON AND
PARTNERS.

Table 1

Date	Ore raised bings	No. in partner- ship	Bar- gain	Total wages			Yearly wage per man					
				£	s.	d.	£	s.	d.	£	s.	d.
Sep. 1827	173 $\frac{5}{8}$ 94 $\frac{1}{2}$	6	40/- 35/-	347	5	0	} 512	12	6	85	8	9
Sep. 1828	32 $\frac{1}{2}$ 557	6	35/- 28/-	56	17	6						
Sep. 1829	77 $\frac{3}{4}$ 153	6	16/- 12/-	62	4	0	} 154	0	0	25	13	4
Sep. 1830	211 $\frac{1}{8}$ 165 $\frac{3}{4}$	6	21/- 28/-	221	13	7						
Sep. 1831	179 $\frac{1}{2}$ 41 $\frac{1}{2}$	6	28/- 28/-	251	6	0	} 309	8	0	61	17	7*
Sep. 1832	51 $\frac{3}{4}$ 55 $\frac{3}{4}$	4	28/- 25/-	72	9	0						
Sep. 1833	48 $\frac{5}{8}$ 73 $\frac{1}{8}$ 10 69	4	25/- 28/- 21/- 30/-	60	15	7	} 216	7	6	54	1	10
		4		102	7	6						
		4		10	10	0						
		4		103	10	0						

* Average of 5 in partnership.

OUTPUT AND WAGES IN SIX LENGTHS OF THE
LOW COALCLEUGH VEIN, 1824-1838.

Table 2

Length	Years	Mnths.	No. of Men	Ore raised bings	Total wages			Average monthly wage		
					£	s.	d.	£	s.	d.
1	1837-38	18	6	190 $\frac{1}{2}$	264	16	3	2	9	0
2	1835-38	35	5*	776 $\frac{1}{2}$	1029	13	3	5	17	8
3	1835-38	42	6	1033 $\frac{3}{8}$	1373	17	0	5	9	0
4	1828-38	126	4*	2025 $\frac{3}{8}$	2456	5	3	4	17	3
5	1827-38	134	5*	2446 $\frac{1}{4}$	3452	5	4	5	3	0
6	1824-36	126	3*	1151 $\frac{1}{8}$	1975	0	0	5	4	4

* Average.

The first table shown has been compiled from this book between 1827 and 1833 and clearly shows the uncertainty of the miner's reward from year to year. It will be noticed that the very good output for 1828 was followed by a marked fall in subsequent bargains. This was probably due to the anticipation of further good yields which did not follow, but also to the very low price of lead prevailing at this time. The second table is a complete analysis of all the lengths for the whole period covered by the record book. The figures in these tables are not a complete picture of the miner's earnings for he was paid when driving along a vein. This price could be from 140/- per fathom to 60/- per fathom depending on the difficulty involved. But against these figures we have to set the expenses which the miner had to meet himself, namely the drawing of ore out of the mine, its washing and the cost of candles, tools and gunpowder. The cost of candles for lighting came to a surprisingly large figure. The bills ledger for the Coalcleugh mine records the purchases from John Green and Sons, Chandlers, Gateshead, as follows:

1855 March	917 doz. lbs. @ 8/3d	£378 5 3d.
1855 June	777 doz. lbs. @ 8/3d	£320 10 3d.
1855 Dec.	859 doz. lbs. @ 7/- d	£300 13 0d.

The purchases for 1856 were even larger, and assuming that all the 1855 stock was consumed then lighting is shown to be a very heavy charge. A certain S. G. White (?) of Saville Row, Newcastle, addressed a letter dated April 27th, 1853,²³ to Thomas Sopwith requesting him to inspect a miner's lamp he had invented. "I am also informed," he wrote, "that the waste of candles from the currents of air etc. is very great." What became of the lamp is not revealed. Such a wage system would certainly not satisfy the modern trade unionist and its shortcomings did not pass without critical comment a century ago. A lengthy document,²⁴ unsigned and undated, exists, which sets out at great length a reformed

²³ A.E.O.—Signature not clear.

²⁴ A.E.O.

wage system. It was written during a time of depression in the industry, probably about 1830, and is addressed to the "owners, agents and workmen in lead and copper mines". In it a series of tables for different conditions of work are compiled with the express purpose of eliminating the uncertainty of the miners' reward. The author sums up the evils of the then system in these words:

"The consequence is either great privation and suffering or the contracting of debts which there is no reasonable prospect of discharging, but other times the bargains may turn out so well that not only double but treble wages may be made which in too many instances occasion a want of economy, as well as improvident habits, which when a reverse is experienced has the effect of causing even moderate circumstance to be felt as a great hardship and poverty as a double affliction."

The social unrest and economic distress of the "Hungry Forties" find their expression in the strike of miners at Allenheads lasting from January 1st to May 10th, 1849. The causes of the strike are probably complex, but a reading of the letters between Thomas Sopwith and the strikers which appeared in the *Newcastle Guardian* brings out the main grievances. A letter from Sopwith in the *Newcastle Guardian*, March 31st, 1849,²⁵ claims that the main grievances were his insistence that the miners should work a five-day week of eight hours daily, and that the advance in subsistence money which he had given in 1845 was on condition that such hours should be worked. To enforce this he had placed "watchers" in the mine, much to the resentment of the miners. Secondly he had refused the miners' demand for the dismissal of two underagents, namely William and John Curry. The reason for the miners' antipathy towards these two men is not known. The time-keeping question had been a source of friction for some time. In 1847 a public burning of Sopwith's books was only just prevented over the same cause. Again a meeting of miners

²⁵ Central Library, Newcastle.

on October 28th, 1848, was followed by the signing of a statement regretting the meeting and as a result the watchers were withdrawn. In a further letter²⁶ the miners deny that the time question was the sole cause of the dispute long before other dissatisfactions had arisen and they charge Sopwith for passing judgment before their case had been properly examined and with his failure to appoint impartial arbitrators. They opposed the idea that time had any reference to the piece work or bargains they performed. Time began according to Sopwith when the miners reached the face. This the miners would not allow. For them time began as soon as they entered the mine with their load of "five to twenty pounds weight upon their backs". A lesser complaint was that although there had been a reduction in the numbers of miners employed, none were permitted to seek new employment in the construction of reservoirs which was going on at this time. Strangers outside the district had been brought in, one of whom made off with £35 from his lodgings and left all his bills unpaid. The letter of April 21st, 1849,²⁷ upbraids Sopwith for his alleged vanity and complacency and ends with the statement, "we are now preparing to disperse ourselves over the earth wherever our feet may find a resting place". This undoubtedly refers to the mass emigration of about sixty families who left East Allendale on May 17th, 1849, for the U.S.A.²⁸ Finally defeated, the miners returned to work. Some never went back and signing themselves the "Ex-miners of Allenheads" continued the struggle in the press. After the strike ended Sopwith had a document prepared for each miner to sign. The clauses were (1) they were sorry for the strike and the misrepresentations of William and John Curry, (2) since they resumed work they were perfectly satisfied with the agents, (3) they would keep the peace and not injure Mr. Beaumont's property. When assembled in the Miners' Room adjoining

²⁶ *Newcastle Guardian*, April 7, 1849, in Bell Collection. N.E.I.M.M.E.

²⁷ *Newcastle Guardian*—Newcastle Central Library.

²⁸ Dickinson—*Allendale and Whitfield 1884*.

the Mines Office at Allenheads few miners assented; attempts at bargain days or when entering the mine were as little successful. In the eyes of the "Ex-Miners" the document was an attempt to prove to Mr. Beaumont that all was now well.²⁹

Thomas Sopwith attached great importance to the education of both children and adults. His attitude was utilitarian, concerned as he was with his own needs in office and mine. Thus Michael Faraday on his visit on May 4th, 1856, approved "the general principles of education as followed at Allenheads, and with the office arrangements which were the fruits of that education".³⁰ His employer, W. B. Beaumont, gave generously and built or subscribed to many of the schools in the district. Adult education was the concern of the Allenheads Mutual Improvement Society, while libraries were established at Allenheads, Carr Shields and Allen Mill. Benefit Societies at Allenheads and in West Allen and a medical fund to which both miner and employer contributed were other social services. Provision for old age was a personal problem and not as now state provided. Each had to make his own provision or appeal to the generosity of his employer. The particular example of William Stokoe, sharper at Allenheads, illustrates this point. William Stokoe, now 64 years of age, had worked all his life at Allenheads, until paralysis of the hand prevented him from carrying on his trade. He was receiving 6/- weekly from the Royal Oak, which in time would become 5/- and then 4/-. He owned four small cottages at Allendale but "he got the rents badly". He and his wife were now unable to pay their way and applied for a weekly allowance or pension. Thomas Sopwith replied, "I will consult Mr. Beaumont verbally on the peculiar circumstances of this case with reference to temporary appurtenance of say 4/-d weekly." Then on a later note "donation of £5 directed by Mr. Beaumont. No pension."³¹

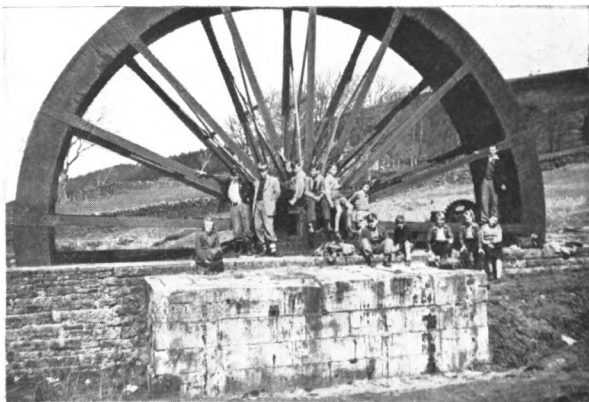
²⁹ *Newcastle Guardian*, Oct. 23rd, 1849, in Bell collection. N.E.I.M.M.E.

³⁰ Richardson—*Thomas Sopwith 1891*.

³¹ A.E.O.—Office memo from T. J. Bewick, Engineer, to T. Sopwith, June 1865.



1



2



3



4

1. ALLEN SMELT MILL.

2. WATER WHEEL AT SIPTON.

3. WASHING FLOORS, ALLENHEADS.

4. ENGINE HOUSE, HOLMES LINN.



1



2

3



4



1. BARNEY CRAG LEVEL. 2. HOLMES LINN, SHAFT. 3. ALLEN MILL FLUE. 4. FLUE CHIMNEY.

This may not seem generous but a subscription account shows the names of thirteen pensioners who together received £600 during 1850-1860, the period covered by the account.

Through nearly two centuries and particularly in the nineteenth, lead mining had provided a source of industrial employment in a region where farming was largely marginal. The total labour force employed in mining and its ancillaries such as smelting, washing and carting is difficult to estimate. Commenting on the infrequency of fatal accidents, Sopwith states that the rate was less than half a life per annum in a total of more than 2,000 workmen,³² but this figure almost certainly included the Beaumont mines in Weardale. The numbers entertained at the majority of W. B. Beaumont in 1856 totalled 1,376. Another way of appreciating the importance of lead mining to this community is to examine the Baptism Records in the parish church at Allendale. When summarized for 1850-1855 they show that smelters lead the list of trades with 59 entries, lead miners with 44, followed by labourers with 20. Or funerals at St. Peter's Chapel 1784, where eleven out of thirteen entries concern miners or their families. The closure of the mines and the collapse of the lead trade was a serious matter for the local population, as it deprived many of their livelihood in a district where other forms of employment were few and where absorption into agriculture was limited. The collapse of lead mining was due to the slump in the price of lead, which set in about 1878 and continued until the record low price of £9½ was reached in 1892, thereafter it never recovered. Such a depression had occurred about 1830, but now sixty years later there was an added factor, namely the exhaustion of ore reserves. The best ore had been removed during two hundred years of mining and further exploration under the prevailing economic conditions was not favourable. This fall in price seems largely to have been due to imports of cheap foreign ore, particularly Spanish. As a result, Swinhope mine closed in 1872, Mohopehead in 1878, Coalcleugh

³² B. W. Richardson—*Thomas Sopwith 1891*.

in 1880 and Allenheads in 1896. These were the main mines in the district. Many smaller mines had closed earlier. The decline of lead mining had disastrous results on the local population. The population of the parish of Allendale had increased steadily between 1801 and 1861, reaching a peak of 6,400 in the latter year. In 1951 this total had fallen to 1,911, a decline of 71 per cent. The decline in the last quarter of the nineteenth century was extremely rapid, each decade losing one quarter of its population from the previous decade. One might expect to see much evidence in the countryside of this depopulation but such evidence is not so conspicuous as might be imagined. Here and there is a ruined house on the fells, or the gutted chapel at Carr Shields built in 1821 by the Lady of the Manor "for her miners", or the four walls of the tiny Primitive Methodist Chapel standing where Emily Cleugh meets the Mohope Burn. Coalcleugh is now deserted and at Allenheads, where once were fourteen shops, it is said each shop could make a living if it had the regular custom of two families, now there are only two.