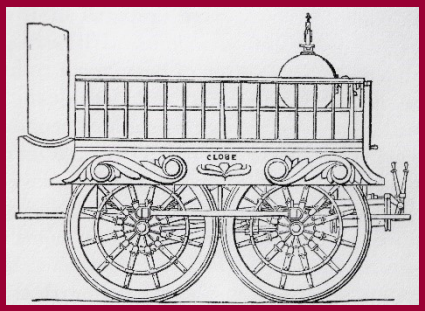
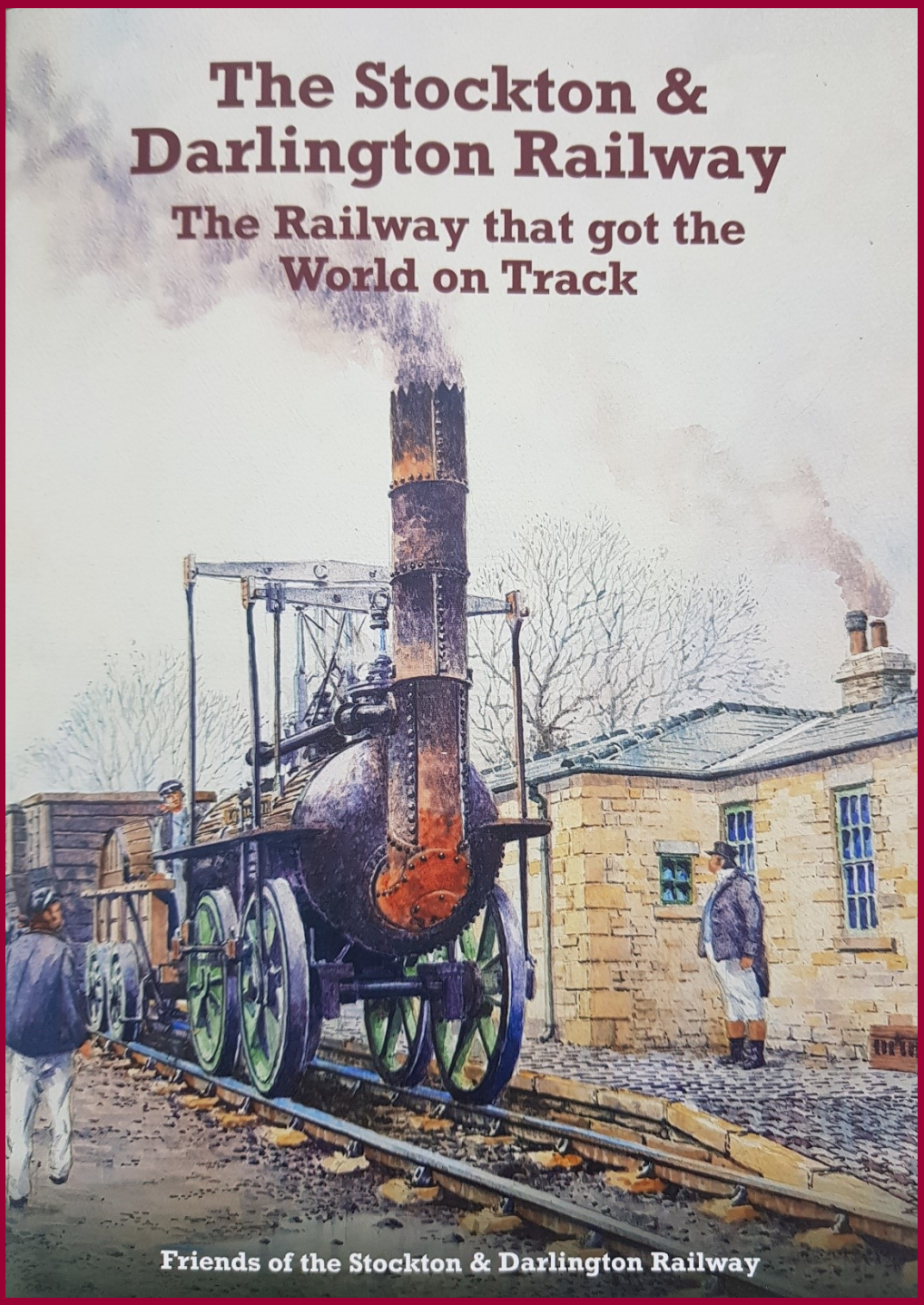
The Globe



The Journal of the Friends of the Stockton & Darlington Railway



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Friends' meetings are held on the first Thursday of every month (except January). They alternate between Darlington Cricket Club, DL1 5JD at 7.10pm and the Railway Tavern in Darlington, DL1 1UN at 7pm. All Friends are welcome to attend, but please contact one of the above Trustees first to make sure that the venue or time has not changed. Papers are circulated to Friends in advance and are available in the members' area of the web site https://www.sdr1825.org.uk/

Cover photo: Front cover of the Friends' new book on the S&DR (see page 18 for details)

WELCOME TO THE GLOBE! THE REGULAR JOURNAL FOR THE FRIENDS OF THE STOCKTON & DARLINGTON RAILWAY

Dear Friends,

The back end of the year and the start of the new one is always a time for reflection. Who would have thought that back in 2013 when the first tentative meetings were held to form a Friends group for the S&DR, that we would have come so far and achieved so much? Our initial ambitions to make sure the councils of Durham, Darlington and Stockton began working together to make the most of our internationally important rail heritage and lay plans for 2025, are now well embedded. Indeed, the bicentenary plays a major part in the exciting County Durham bid for national City of Culture in 2025. From our initial conference at NRM Locomotion in 2015, which attracted a national audience, huge amounts of planning and preparation have taken place and I believe that next year we will begin to see some real delivery on the ground. The trustees and I have spent more time than I think we ever imagined at the start of this project, making sure our voice is heard and emerging plans are well informed, accurate and have the voice of the communities along the line and further afield represented. As a registered charity, a member of the UK Heritage Alliance, the Heritage Rail Association and Heritage Trust Network we are making impacts not just at a regional but a national stage. Our regional MPs support our work with a major levelling up grant for the S&DR recently announced, and a heated debate in Parliament about where the new HQ of Great British Railways ought to be based, Stockton or Darlington, with both MPs eager to claim their town as the birthplace of the railways (and surely the first time Edward Pease has been quoted in Westminster for some time!). We are key members of the energetic Rail Heritage Board Executive group (along with Durham, Darlington, Stockton Councils, the Tees Valley Combined Authority, NRM and Historic England), and early in the New Year we hope that research and planning by the Rail Heritage Board Executive on exciting plans for 2025, Branding and Interpretation, the Economic Impact of the planned work and the legacy beyond 2025 for our tourism economy and the inspiration of our young people in education, will all come to fruition. The trustees and I, and indeed all of the volunteers out on the ground couldn't continue to do this without your help, so big thanks to all of you in whatever way you find to support us.

Despite the uncertain times of the last year under the shadow of covid, I believe we go into 2022 in good shape with lots of opportunities to hand. With our splendid new website (packed full of fabulous information and archives), our definitive booklet selling well and ready to inform education work and (fingers crossed,) a successful Heritage Lottery bid forthcoming which will provide resources to appoint staff to support our work, create an office and allow us to support community aspirations. 2022 looks like being another step forward for ourselves and our partners.

Seasons greeting to you all and I look forward to seeing as many of you as possible in the New Year. *Niall Hammond, Chair, Friends of the S&DR*

The Friends of the S&DR. Who we are and what we do.

We are a registered charity and we:

- act as an umbrella organisation for all those interested in our railway heritage
- lobby and work with local authorities and government
- push forward on survey, research and conservation of the line
- raise the profile and awareness of our heritage, locally, nationally and internationally
- protect and care for the S&DR remains
- explore the case for World Heritage Site status
- support coordinated development of footpaths and interpretation to safely access the line
- work with others on events for 2025, Bicentenary Year.

TREASURE CHEST!

Nigel Harbron

I don't suppose *The Globe* has featured a chest of drawers before.

My maternal grandfather, the splendidly-named Lancelot Bell, worked for the NER for many decades, ending his time as a Mineral Guard. Initially, he was based at Shildon, and lived in no. 4 (I think), North Terrace, Brusselton, where my mother was born and grew up, walking along the route of the famous incline just about every day. North Terrace, on the right of the picture below, was demolished quite a long time ago.

North Terrace, Brusselton with the engine house opposite

Like many of his generation, Lancelot Bell might have had a relatively mundane job, but he was clearly a man of many talents. He was a musician (I still have his English concertina); a very keen gardener (vegetables a speciality), and someone who could make almost anything out of wood. I have inherited several of his pieces, including the chest of drawers above. Recently, we had to move the chest, taking out its drawers to reduce its considerable weight. When replacing the second drawer from the top, I noticed some blue writing on the underside, and here is a picture of it:

along with a translation:

BELL
? NORTH TERR
BRUSSELTON
W SHILDON

I do have a few memories of Grandad Bell, although not many as he died when I was about three. As a Mineral Guard, he would have been very familiar with the route of the S&DR, as well as the hundreds of other tracks belonging to the NER empire, and here he is.

FROM THE ARCHIVES 1: This stupendous work

'The opening of this stupendous work, which affects a communication between the port of Stockton and the coal field in the interior parts of the county of Durham, took place on Tuesday week. About eight o'clock, thirteen waggons, twelve of them laden with two tons of coal each, and the other with sacks of flour, the whole covered with people, were drawn up the inclined plane at Brusselton, amidst the cheers of the assembled thousands. This inclined plane is above a mile and a half long, yet, by means of two powerful steam engines, erected at its top, (each being eighty horse power) the waggons with their immense load were drawn up in eight minutes, by a patent rope, in one piece, which extends the whole length. After a short time, the waggons descend the other side of the hill, and took their station on the level below, whence the procession was to set out. About ten o'clock the locomotive engine, or steam-horse as it was more generally termed, gave "note of preparation;" the cry of "all ready" was heard and the engine and its appendages moved forward in the following order; --The Company's Locomotive Engine. The Engine's Tender, with water and coals. Five waggons, laden coals, one with flour, and one containing surveyors, engineers & c. The committee and other proprietors, in the coach belonging to the company. Six waggons with strangers. Fourteen waggons with workmen and others. Six waggons laden with coals. The whole of the above was attached to the Locomotive Engine. Then followed 24 waggons, filled with workmen and others, drawn by horses. Flags with inscriptions were displayed on four of the waggons. The scene, on the moving of the procession, sets descriptions at defiance; the welkin rang with loud huzzas, while the machine moved onward at the rate of 10 or 12 miles an hour, with the weight of not less 80 tons attached to it. Notwithstanding a delay of more than half an hour the procession

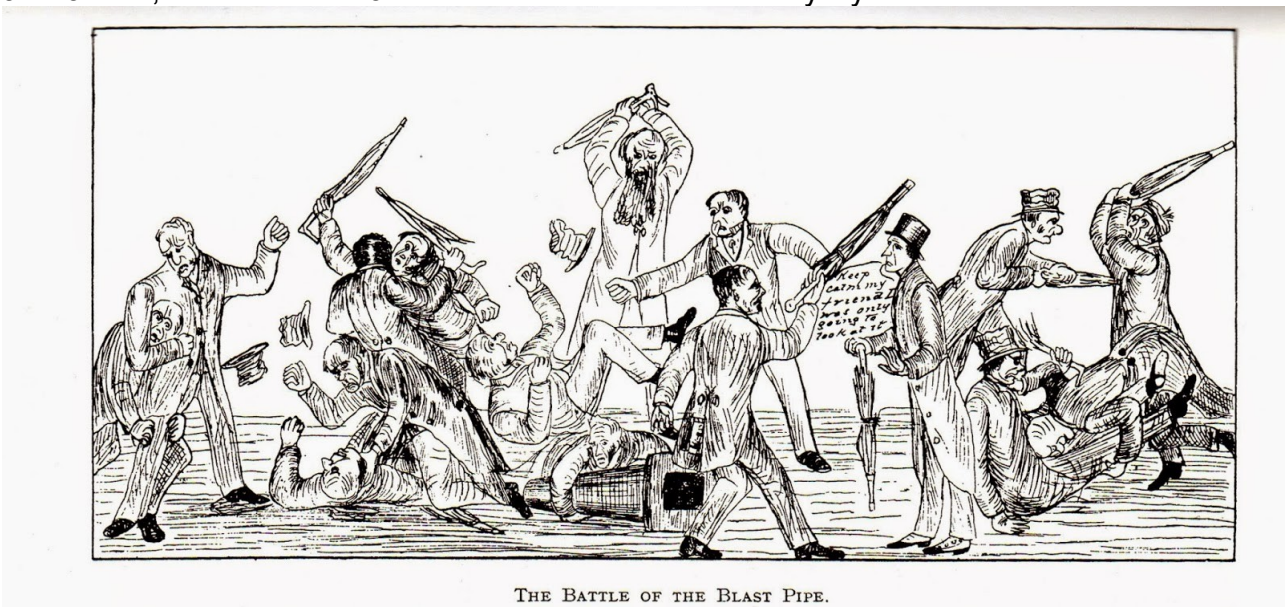
reached Darlington about twelve o'clock, there being in and on the waggons attached to the Locomotive Engine no less than 548 persons. At Darlington 10 to 12,000 persons were assembled. The procession afterwards, drawn by the Locomotive Engine, proceeded onward, followed by some other waggons drawn by horses, and filled with company towards Stockton, which they reached about a quarter before four o'clock. The engine and its appendages moved on the descent at the rate of fifteen or sixteen miles an hour. On reaching the Company's wharf at Stockton, a salute of seven guns was fired, and the band struck up "God save the King," which was followed by three times three Stentorian cheers. It was ascertained that nearly 700 persons were in and upon the waggons attached to the Locomotive Engine, when it entered Stockton. The distance from Brusselton engine to Stockton is twenty and a half miles, and the entire length of the line from Witton Park Colliery nearly twenty-five miles, being we believe, the largest Rail-road in the kingdom. We believe not less than 40 or 50,000 persons were assembled to witness the proceedings of the day. A dinner was afterwards given at which nearly 200 gentlemen attended. Among the toast we observed "Success to the Manchester and Liverpool Rail-way," and "Success to the Leeds and Hull Rail-way."'

Extracted from The Leeds Intelligencer
06 October 1825
Transcribed by Peter Bainbridge, 29 October 2021

JOHN WESLEY HACKWORTH PART 3: THE BATTLE OF THE BLAST PIPE

By Trev Teasdel

In 1876 S.T. Richardson published a pen and ink sketch entitled The Battle of the Blast Pipe in a book of sketches called "The World's First Railway Jubilee" which 'burlesques the voluminous and heated correspondence' that appeared in the press at that time on the subject of the invention of the 'blast pipe' with John Wesley Hackworth lampooned in the centre dealing 'substantial blows impartially to everyone with his umbrella, the reference being to his vigorous advocacy of his father, Timothy Hackworth's claim to the invention'. The sketch depicts other fighting advocates including George Stephenson, Samuel Smiles and J.S. Jeans, author of The Jubilee Memorial of the Railway System.



THE BATTLE OF THE BLAST PIPE.

In parts 1 and 2 [1] we told the story of John's delivery of the first locomotive to go to Russia in 1837 and saw the development of his career as an inventor and engineer in his own right. In

this part I hope to outline the story and issues that led John Wesley Hackworth into the controversy that became known as 'The Battle of the Blast Pipe'.

John mounted a vigorous defence of the reputation of his father (Timothy Hackworth) in the press and following the publication of The Life of George Stephenson in 1857, and in doing so –

'Brought his father's name into prominence, and without him, and the clear knowledge which he had of the railway beginnings, it is likely the achievements of Timothy Hackworth would not have merely been obscured but lost altogether.' says Robert Young. [2]

Young also tells us that 'John rebelled against the calm assumption by others of the credit due to Timothy Hackworth and spent an enormous amount of time and energy in combating this in writing and lecturing on early locomotive history.' [3]

It wasn't an easy task, although John clearly enjoyed the fray, but he was vilified in the process cited as being 'angry', delivering a 'diatribe' 'battering his opponents' and more. This vilification continues in some circles, whenever his name is mentioned, and despite all the fine achievements we have mentioned in earlier parts, it is for this he's best remembered.

The question is, did this finger pointing define the man at heart? – Robert Young, while having his own criticisms, clarifies to us that John '…was a kind and gentle heart, free of all malice, a tender husband and father during a long lifetime of troubles which would have broken many a man.' [4]

His qualifications in the matter were that he occupied a unique position in early railway history and in his own words says *'I saw the Stockton and Darlington Railway opened, was brought up upon it, knew every horse, every locomotive driver, and fireman, every director, nearly all the shareholders, and every noteworthy incident that occurred thereon for the first 20 years; and if any living man knows anything of its history, and working, I am the man!'* [5]

It's not even that Timothy Hackworth was the antithesis of George and Robert Stephenson. The constructive relationship between Timothy and the Stephensons is documented in letters held in the 'Hackworth Family Archives' at NRM York. George 'head hunted' Hackworth for the Forth Street works and later as Superintendent of the S & D Railway. The letters show the Stephensons valued Hackworth's skills and knowledge as a blacksmith and engineer, and often sought his opinion on technical issues.

By way of example here's a quote from a letter from Robert Stephenson in Liverpool to Timothy Hackworth March 29th 1829 - the issue was stationary engines v locomotives *'…Let me have your general opinion as to the locomotive engine system. Is it as convenient as any other? Would you consider 13 ½ tons in summer and 10 tons in winter, a fair performance for a good locomotive engine? You will oblige me by answering promptly as possible, as the discussion of the merits of the two systems is yet going on amongst the directors here.'* [6]

The Main Issue?

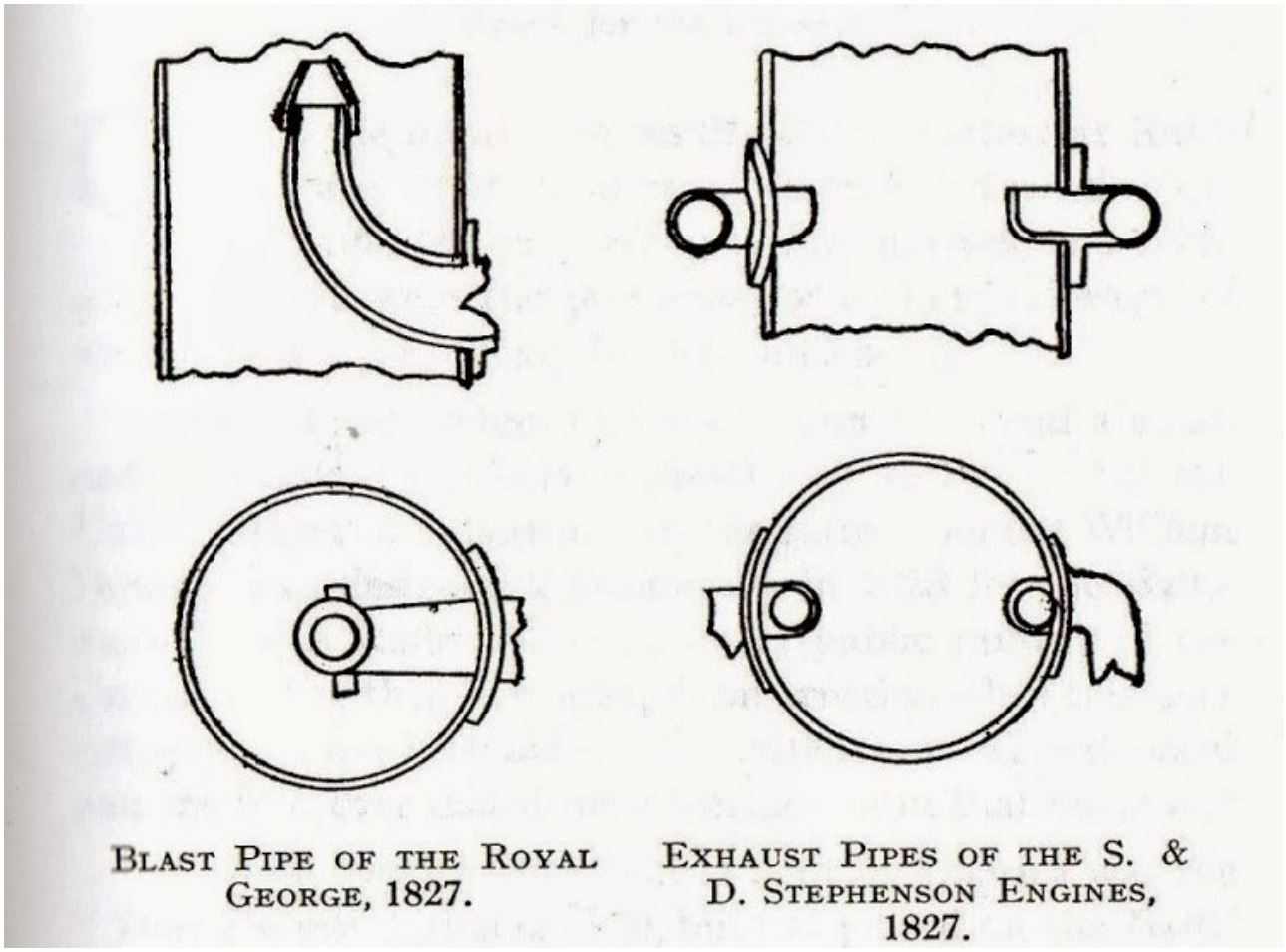
The main controversy centred on who invented the 'Blast Pipe', but first let's consider how inventions arise. People think of them as the brainchild of one person, but inventor Jacque Fresco, founder of The Venus project, said 'We all stand on the shoulders of one another'. [7] Invention is a long process of accumulation, combination, trial, and error, asking questions and refinement. Hackworth didn't start from scratch, he had long experience of working with locomotives by the time he built the Royal George. Like all inventors, he was a problem

solver, concerned to make things more efficient. His task with the Royal George was to produce a locomotive that would change the fortunes of the S&DR. Elements of Hackworth's blast pipe were there already but crucially, the design was not, and the power of the steam blast was not yet recognised, utilised or mentioned in any patents.

What Was the Blast Pipe and What Did it Achieve?

'The mere throwing of this steam into the chimney, either by one or two eduction pipes, did not constitute a blast pipe' [8]

In John Wesley Hackworth's so called 'diatribes' and in Robert Young's book, they were concerned to distinguish between what George Smith[9] called a 'Real blast pipe' and systems that preceded it. Timothy Hackworth's description of it was sometimes used retrospectively by descendants and commentators to describe earlier systems where the exhaust was merely dispatched through the chimney without the steam blast effect, and much of John's effort was to clarify it. These sketches appeared in The Engineer in 1857, illustrating the difference.



BLAST PIPE OF THE ROYAL GEORGE, 1827.

EXHAUST PIPES OF THE S. & D. STEPHENSON ENGINES, 1827.

Robert Young explained *'The blast pipe enabled full boiler pressure to be maintained under all conditions when the locomotive was running, by the action of draught produced by exhaust steam. The mere throwing of this steam into the chimney, either by one or two eduction pipes, did not constitute a blast pipe. To direct the waste steam of a locomotive into a chimney is the natural and obvious way of getting rid of it. The object of a chimney is to convey dust, smoke and vapour and smell high into the air out of the way.'* [10]

He continued 'It was common knowledge that the fire brightened when intermittent steam escaped from the pipe into the chimney, just as resulted from the use of bellows but what

was not known was that the pipe could be so designed and adjusted that the exhaust steam sufficed to provide all the draught necessary for efficient haulage.' [11]

The Battle of the Blast Pipe

The battle began with the publication of The Life of George Stephenson in 1857 by Samuel Smiles. The book started a wordy warfare carried on in the Engineer newspaper (and other papers) for three months and revived during the Railway Jubilee in 1875 and indeed, thereon since! Robert Young says that before this book –

'*All the railway world knew of Hackworth's use of the blast pipe at Rainhill, in the Sanspareil, through the burst cylinder, though not of its previous application in the Royal George which was not so generally known.* When the 'Chapter in the history of Railway Locomotion' was published in the Practical Mechanics' Journal in 1850, the facts were given in some detail but in 1857 a surprising number of assertions were made by Smiles, when he stated that George Stephenson had invented the blast pipe - Smiles called it the 'life breath of the locomotive'. [12]

The problem was that the authority of Smiles, a popular writer of the day, carried a lot of weight with the public, and so 'it was natural that the son of Timothy Hackworth, would have felt indignant at the neglect accorded to his father's work.'

Samuel Smiles sources were lacking and in the Preface of the 2nd edition 1864 he admits '*Most of the facts relating to the early period of George Stephenson's career were collected from colliers, brakesmen, engine-men, who had known him intimately… The information obtained from these old men—most of them illiterate…though valuable in many respects, was confused, and sometimes contradictory; but, to insure as much accuracy as possible, the author submitted the MS. to Robert Stephenson, prior to the publication of the 2nd edition.'* [13]

Despite this, Smiles still claimed that *'The invention of the Steam-blast by George Stephenson occurred in 1815, and was fraught with the most important consequences to railway locomotion… Without the steam-blast, the high rates of speed could not have been kept up; …and locomotives might still have been dragging themselves along at little more than five or six miles an hour.'* [14]

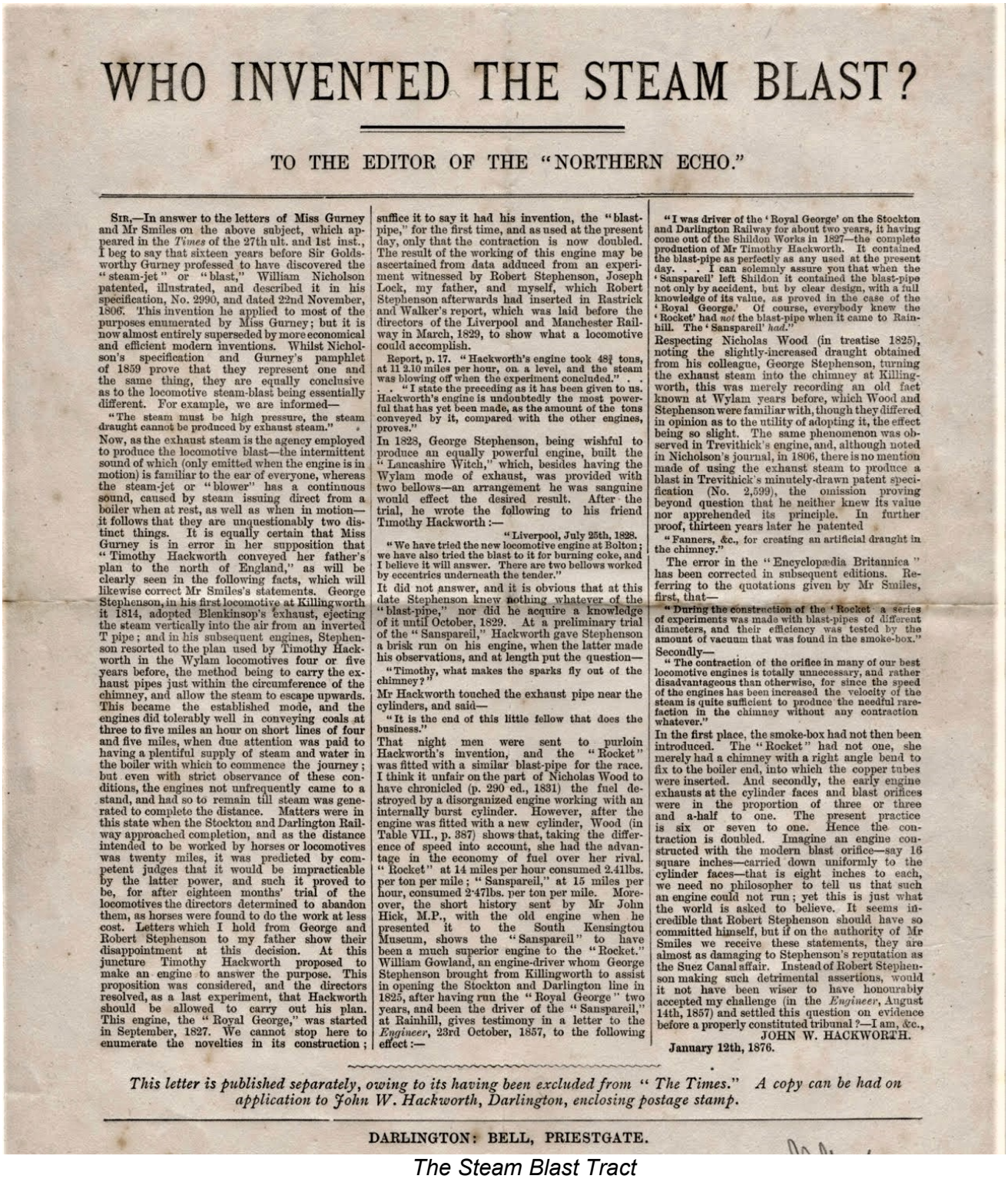
Smiles was obviously aware of this controversy when he wrote - *'As this invention has been the subject of considerable controversy, it becomes necessary to add a few words..*'. [15]

He debunked all claims to the invention, except that of George Stephenson, on much the same grounds as John Wesley Hackworth, but Smiles included Timothy Hackworth in his assessment –

'It has been claimed as the invention of Trevithick in 1804, of Hedley in 1814, of Goldsworthy Gurney in 1820, and of Timothy Hackworth in 1829. With respect to Trevithick, it appears that he discharged the waste steam into the chimney of his engine, but without any intention of thereby producing a blast; and that he attached no value to the expedient is sufficiently obvious from the fact that in 1815 he took out a patent for urging the fire by means of fanners, like a winnowing machine.' [16]

In 1875 the controversy returned during the 1st Railway Jubilee. John responded in 1876 with a lengthy letter to the Times entitled 'Who Invented the Steam Blast?' [17] The letter was 'excluded from the Times' but John published it himself as a tract, from his base in

Priestgate, Darlington, as an open letter to the editor of the Northern Echo. (This tract can be found online – see notes).



WHO INVENTED THE STEAM BLAST?

TO THE EDITOR OF THE "NORTHERN ECHO."

SIR,—In answer to the letters of Miss Gurney and Mr Smiles on the above subject, which appeared in the *Times* of the 27th ult. and 1st inst., I beg to say that sixteen years before Sir Goldsworthy Gurney professed to have discovered the "steam-jet" or "blast," William Nicholson patented, illustrated, and described it in his specification, No. 2990, and dated 22nd November, 1806. This invention he applied to most of the purposes enumerated by Miss Gurney; but it is now almost entirely superseded by more economical and efficient modern inventions. Whilst Nicholson's specification and Gurney's pamphlet of 1859 prove that they represent one and the same thing, they are equally conclusive as to the locomotive steam-blast being essentially different. For example, we are informed—

"The steam must be high pressure, the steam draught cannot be produced by exhaust steam."

Now, as the exhaust steam is the agency employed to produce the locomotive blast—the intermittent sound of which (only emitted when the engine is in motion) is familiar to the ear of everyone, whereas the steam-jet or "blower" has a continuous sound, caused by steam issuing direct from a boiler when at rest, as well as when in motion—it follows that they are unquestionably two distinct things. It is equally certain that Miss Gurney is in error in her supposition that "Timothy Hackworth conveyed her father's plan to the north of England," as will be clearly seen in the following facts, which will likewise correct Mr Smiles's statements. George Stephenson, in his first locomotive at Killingworth it 1814, adopted Blenkinsop's exhaust, ejecting the steam vertically into the air from an inverted T pipe; and in his subsequent engines, Stephenson resorted to the plan used by Timothy Hackworth in the Wylam locomotives four or five years before, the method being to carry the exhaust pipes just within the circumference of the chimney, and allow the steam to escape upwards. This became the established mode, and the engines did tolerably well in conveying coals at three to five miles an hour on short lines of four and five miles, when due attention was paid to having a plentiful supply of steam and water in the boiler with which to commence the journey; but even with strict observance of these conditions, the engines not unfrequently came to a stand, and had so to remain till steam was generated to complete the distance. Matters were in this state when the Stockton and Darlington Railway approached completion, and as the distance intended to be worked by horses or locomotives was twenty miles, it was predicted by competent judges that it would be impracticable by the latter power, and such it proved to be, for after eighteen months' trial of the locomotives the directors determined to abandon them, as horses were found to do the work at less cost. Letters which I hold from George and Robert Stephenson to my father show their disappointment at this decision. At this juncture Timothy Hackworth proposed to make an engine to answer the purpose. This proposition was considered, and the directors resolved, as a last experiment, that Hackworth should be allowed to carry out his plan. This engine, the "Royal George," was started in September, 1827. We cannot stop here to enumerate the novelties in its construction; suffice it to say it had his invention, the "blast-pipe," for the first time, and as used at the present day, only that the contraction is now doubled. The result of the working of this engine may be ascertained from data adduced from an experiment witnessed by Robert Stephenson, Joseph Lock, my father, and myself, which Robert Stephenson afterwards had inserted in Rastrick and Walker's report, which was laid before the directors of the Liverpool and Manchester Railway in March, 1829, to show what a locomotive could accomplish.

Report, p. 17. "Hackworth's engine took 48¾ tons, at 11 2.10 miles per hour, on a level, and the steam was blowing off when the experiment concluded." . . . . "I state the preceding as it has been given to us. Hackworth's engine is undoubtedly the most powerful that has yet been made, as the amount of the tons conveyed by it, compared with the other engines, proves."

In 1828, George Stephenson, being wishful to produce an equally powerful engine, built the "Lancashire Witch," which, besides having the Wylam mode of exhaust, was provided with two bellows—an arrangement he was sanguine would effect the desired result. After the trial, he wrote the following to his friend Timothy Hackworth:—

"Liverpool, July 25th, 1828.

"We have tried the new locomotive engine at Bolton; we have also tried the blast to it for burning coke, and I believe it will answer. There are two bellows worked by eccentrics underneath the tender."

It did not answer, and it is obvious that at this date Stephenson knew nothing whatever of the "blast-pipe," nor did he acquire a knowledge of it until October, 1829. At a preliminary trial of the "Sanspareil," Hackworth gave Stephenson a brisk run on his engine, when the latter made his observations, and at length put the question—

"Timothy, what makes the sparks fly out of the chimney?"

Mr Hackworth touched the exhaust pipe near the cylinders, and said—

"It is the end of this little fellow that does the business."

That night men were sent to purloin Hackworth's invention, and the "Rocket" was fitted with a similar blast-pipe for the race. I think it unfair on the part of Nicholas Wood to have chronicled (p. 290 ed., 1831) the fuel destroyed by a disorganized engine working with an internally burst cylinder. However, after the engine was fitted with a new cylinder, Wood (in Table VII., p. 387) shows that, taking the difference of speed into account, she had the advantage in the economy of fuel over her rival. "Rocket" at 14 miles per hour consumed 2.41lbs. per ton per mile; "Sanspareil," at 15 miles per hour, consumed 2·47lbs. per ton per mile. Moreover, the short history sent by Mr John Hick, M.P., with the old engine when he presented it to the South Kensington Museum, shows the "Sanspareil" to have been a much superior engine to the "Rocket." William Gowland, an engine-driver whom George Stephenson brought from Killingworth to assist in opening the Stockton and Darlington line in 1825, after having run the "Royal George" two years, and been the driver of the "Sanspareil," at Rainhill, gives testimony in a letter to the *Engineer*, 23rd October, 1857, to the following effect:—

"I was driver of the 'Royal George' on the Stockton and Darlington Railway for about two years, it having come out of the Shildon Works in 1827—the complete production of Mr Timothy Hackworth. It contained the blast-pipe as perfectly as any used at the present day. . . . I can solemnly assure you that when the 'Sanspareil' left Shildon it contained the blast-pipe not only by accident, but by clear design, with a full knowledge of its value, as proved in the case of the 'Royal George.' Of course, everybody knew the 'Rocket' had *not* the blast-pipe when it came to Rainhill. The 'Sanspareil' *had*."

Respecting Nicholas Wood (in treatise 1825), noting the slightly-increased draught obtained from his colleague, George Stephenson, turning the exhaust steam into the chimney at Killingworth, this was merely recording an old fact known at Wylam years before, which Wood and Stephenson were familiar with, though they differed in opinion as to the utility of adopting it, the effect being so slight. The same phenomenon was observed in Trevithick's engine, and, although noted in Nicholson's journal, in 1806, there is no mention made of using the exhaust steam to produce a blast in Trevithick's minutely-drawn patent specification (No. 2,599), the omission proving beyond question that he neither knew its value nor apprehended its principle. In further proof, thirteen years later he patented

"Fanners, &c., for creating an artificial draught in the chimney."

The error in the "Encyclopædia Britannica" has been corrected in subsequent editions. Referring to the quotations given by Mr Smiles, first, that—

"During the construction of the 'Rocket' a series of experiments was made with blast-pipes of different diameters, and their efficiency was tested by the amount of vacuum that was found in the smoke-box."

Secondly—

"The contraction of the orifice in many of our best locomotive engines is totally unnecessary, and rather disadvantageous than otherwise, for since the speed of the engines has been increased the velocity of the steam is quite sufficient to produce the needful rarefaction in the chimney without any contraction whatever."

In the first place, the smoke-box had not then been introduced. The "Rocket" had not one, she merely had a chimney with a right angle bend to fix to the boiler end, into which the copper tubes were inserted. And secondly, the early engine exhausts at the cylinder faces and blast orifices were in the proportion of three or three and a-half to one. The present practice is six or seven to one. Hence the contraction is doubled. Imagine an engine constructed with the modern blast orifice—say 16 square inches—carried down uniformly to the cylinder faces—that is eight inches to each, we need no philosopher to tell us that such an engine could not run; yet this is just what the world is asked to believe. It seems incredible that Robert Stephenson should have so committed himself, but if on the authority of Mr Smiles we receive these statements, they are almost as damaging to Stephenson's reputation as the Suez Canal affair. Instead of Robert Stephenson making such detrimental assertions, would it not have been wiser to have honourably accepted my challenge (in the *Engineer*, August 14th, 1857) and settled this question on evidence before a properly constituted tribunal?—I am, &c.,

JOHN W. HACKWORTH.

January 12th, 1876.

This letter is published separately, owing to its having been excluded from "The Times." A copy can be had on application to John W. Hackworth, Darlington, enclosing postage stamp.

DARLINGTON: BELL, PRIESTGATE.

The Steam Blast Tract

If John was 'angry', it's sublimated. His responses were informative and coherent. He responded to Miss Gurney (descendant of Sir Goldsworthy Gurney) and Samuel Smiles along the lines we have already discussed.

John answered Samuel Smiles in his tract 'Who Invented the Steam Blast?' 1876 –
'George Stephenson, in his first locomotive at Killingworth, 1814, adopted Blenkinsop's exhaust, ejecting the steam vertically into the air from an inverted T pipe; and in his

subsequent engines, Stephenson resorted to the plan used by Timothy Hackworth in the Wylam locomotives four or five years before, the method being to carry the exhaust pipes just within the circumference of the chimney, and allow the steam to escape upwards. This became the established mode and the engines did tolerably well in conveying coals at three to five miles per hour on short lines….but even with strict observance of these conditions, the engines not infrequently came to a halt….matters were in this state when the Stockton and Darlington Railway approached completion, and as the distance intended to be worked by horses and locomotives was 20 miles, it was predicted by competent judges that it would be impractical by the latter power and such it proved to be, for after 18 months of the locomotives the directors determined to abandon them, as horses were found to do the work at less cost.
At this juncture Timothy Hackworth proposed to make an engine to answer the purpose..and the directors resolved, as a last experiment, that Hackworth be allowed to carry out his plan. This engine , The Royal George, was started in 1827..suffice to say it had his invention, the blast pipe for the first time.' [18]

John quoted from page 17 of the Rastrick and Walker report March 1829 that went before the directors of the Liverpool and Manchester Railway and which was witnessed by John Wesley Hackworth, Robert Stephenson and Joseph Lock, to show what the Royal George could do.

I quote Robert Young here as he gives more detail than John, and tells us that before they laid out their report to the directors, Robert Stephenson asked two engineers to try an experiment with the Royal George as a practical proof of the efficiency which the locomotive attained.

The report read "It appears by this experiment the engine took forty eight and three quarters tons of goods, 2,500 yards up a rise of ten feet a mile, and returned down (being equal to 5,000 yards upon a level) at a rate of eleven and two-tenths of a mile an hour, and that the steam was blowing off when the experiment was concluded.

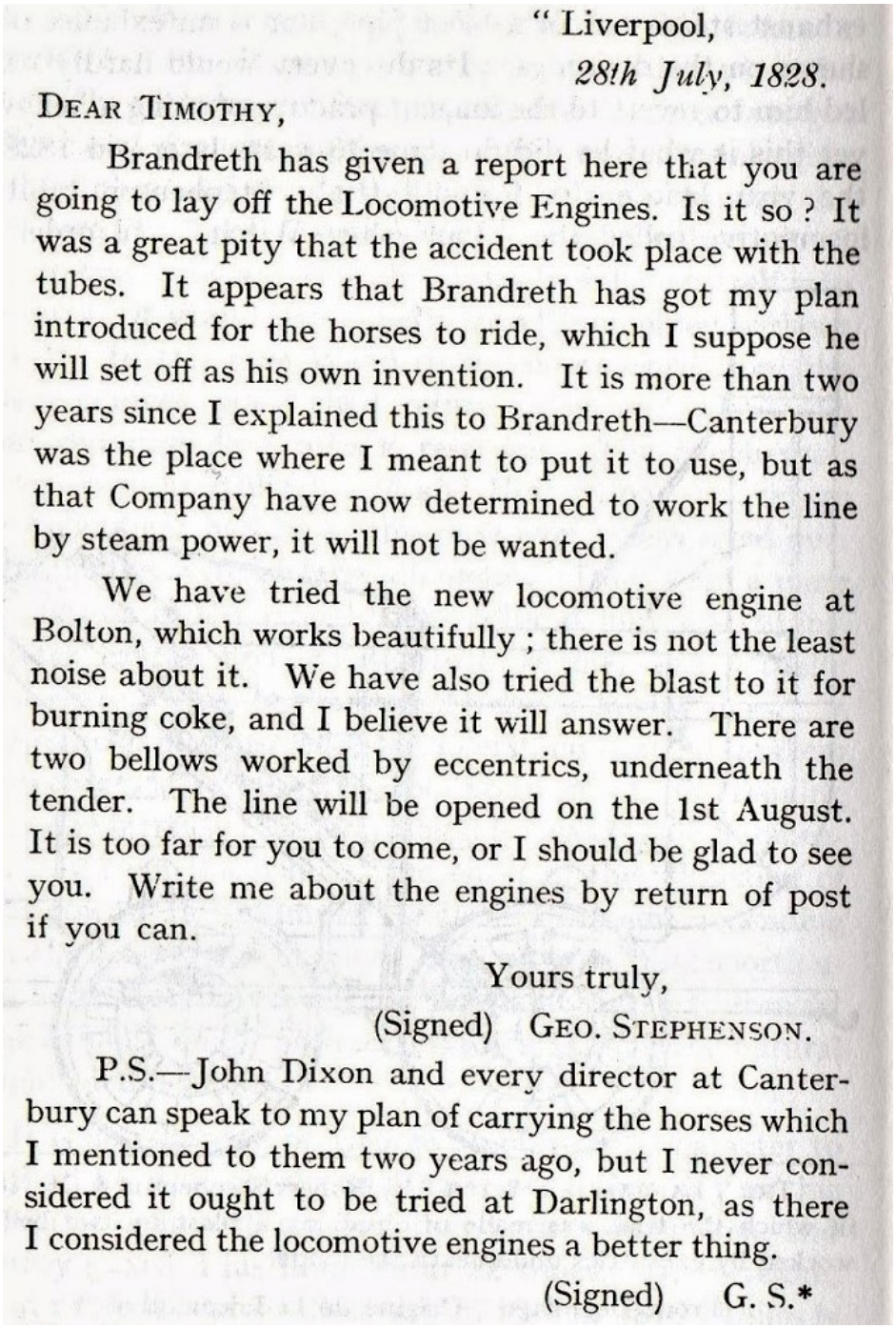
I state the preceding as it has been given to us - Hackworth's engine is undoubtedly the most powerful that has yet been made, as the amount of tons conveyed by it compared with other engines proves." [19]

John went on to say *'In 1828, George Stephenson being wishful to produce an equally powerful engine, built the Lancashire Witch, which besides having the Wylam mode of exhaust, was provided with two bellows - an arrangement he was sanguine would effect the desired result. After the trial – he wrote to his friend, Timothy Hackworth – 'Liverpool, July 25th 1828. We have tried the new locomotive engine at Bolton ; we have also tried the blast to it for burning coke, and I believe it will answer. There are two bellows worked by eccentrics underneath the tender.'*
'It did not answer, and it is obvious at this date, Stephenson knew nothing of the blast pipe, nor did he acquire a knowledge of it October 1829. At a preliminary trial of the Sanspareil, Hackworth gave Stephenson a brisk run on his engine, when the latter made his observations, and at length put the question – 'Timothy, what makes the sparks fly out of the chimney?' Mr Hackworth touched the exhaust pipe near the cylinders and said – 'It is the end of this little fellow that does the business'. [20]

William Gowland, an engine driver whom George Stephenson brought from Killingworth to assist in opening the Stockton & Darlington line in 1825, after having run the Royal George two years, and been the driver of the Sanspareil at Rainhill, gave testimony in a letter to The Engineer, 23rd October, 1857, to the following effect:

'I was driver of the Royal George on the Stockton and Darlington Railway for about two years, it having come out of Shildon works in 1827 - the complete production of Timothy Hackworth. It contained the blast pipe as perfect as any used at the present day…I can solemnly assure you that when the Sanspareil left Shildon it contained the blast pipe not only by accident but by clear design, with a full knowledge of its value, as proved in the case of the Royal George. Of course everybody knew that the Rocket had not the blast pipe when it came to Rainhill. The Sanspareil had.' [21]

By 1882, aged 61, John was tired of the fray and wrote to his brother-in-law George Edward Young –
'Having fought the battle – almost single handed – under some very vexatious circumstances, I begin rather to flag!' [22]



" Liverpool,
28th July, 1828.

DEAR TIMOTHY,

Brandreth has given a report here that you are going to lay off the Locomotive Engines. Is it so ? It was a great pity that the accident took place with the tubes. It appears that Brandreth has got my plan introduced for the horses to ride, which I suppose he will set off as his own invention. It is more than two years since I explained this to Brandreth—Canterbury was the place where I meant to put it to use, but as that Company have now determined to work the line by steam power, it will not be wanted.

We have tried the new locomotive engine at Bolton, which works beautifully ; there is not the least noise about it. We have also tried the blast to it for burning coke, and I believe it will answer. There are two bellows worked by eccentrics, underneath the tender. The line will be opened on the 1st August. It is too far for you to come, or I should be glad to see you. Write me about the engines by return of post if you can.

Yours truly,
(Signed) GEO. STEPHENSON.

P.S.—John Dixon and every director at Canterbury can speak to my plan of carrying the horses which I mentioned to them two years ago, but I never considered it ought to be tried at Darlington, as there I considered the locomotive engines a better thing.

(Signed) G. S.*

The Blast Pipe Letter

Blast Pipe Letter

John died in 1891 but the 'battle' continued in a less vigorous way by the Hackworth family. An important element was the 'blast pipe letter' which had a history of its own. The letter from George Stephenson to Timothy Hackworth, dated Liverpool 28th July 1828 was handed down to John Wesley Hackworth and then to his descendants.

The letter, 'which can be interpreted as evidence that Hackworth invented the blast pipe' prompted Young to write 'The 'two bellows worked by eccentrics' did not answer, and the letter is very sufficient witness that Stephenson had not yet become acquainted with the principles of the exhaust steam blast.' [23]

According to Alison Kay and Jane Hackworth-Young,[24] the letter travelled to the World Columbian Exposition or Chicago World Fair, where other Hackworth items were displayed and then sent to Albert Hackworth, John Wesley Hackworth's son, who had emigrated to Canada to establish the Worth Engineering Works of Toronto, and to his cousin, Samuel Holmes, also in Canada. When Robert Young needed original sources for his book Timothy Hackworth and the Locomotive (1923), Samuel tried to send the documents to him, however transport of the 'blast pipe' letter to the UK was delayed by WW1. Finally, Samuel's widow sent the letter from New York to Albert's daughter Esther Alderslade, in Thornaby on Tees, in 1921 where most of John's descendants lived. The family periodically showed the letter to journalists, whenever there was a relevant event or jubilee. In 2005 the letter was presented to NRM at Locomotion, with the press in attendance, by Jane Hackworth-Young, and John's campaign once again was discussed in the press. The letter now resides in the Hackworth Family archive NRM York.

Albert Hackworth

This concludes our story of John Wesley Hackworth. It is hoped that those wishing to critique John Wesley Hackworth will now, at least, take the trouble to look at what John was actually saying, rather than writing him off with the all too often meaningless descriptors such 'angry tirade'!

Notes

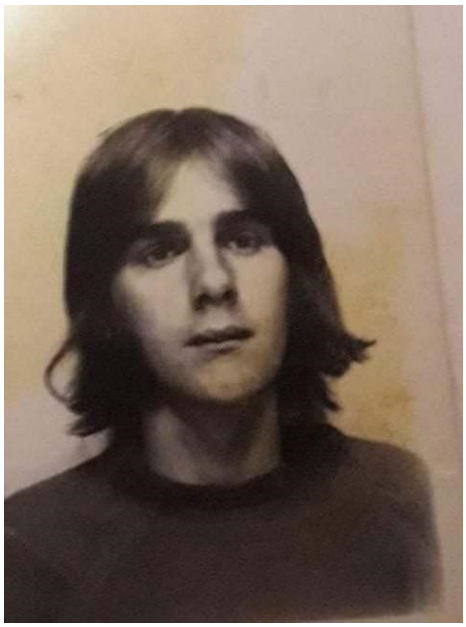
1 See the Globe issue 13 December 2020 entitled John Wesley Hackworth Part 1 and issue 14 April 21 John Wesley Hackworth Part 2.
2 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p365
3 Ibid
4 Ibid
5 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p356
6 Letter from Robert Stephenson to Timothy Hackworth Liverpool March 17th 1829. To be found on the Joan Hackworth Weir website https://joanhackworthweircollection.blogspot.com/2015/02/letter-from-robert-stephenson-to.html
7 Jacque Fresco YouTube video Think https://youtu.be/Ot1wztaqREw
8 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p210
9 Thomas Hackworth – Locomotive Engineer. George Turner Smith 2015 p39
10 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p210
11 Ibid p210 / 2011
12 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p211
13 The Life of George Stephenson and his son Robert Stephenson – Samuel Smiles 1868 https://www.gutenberg.org/cache/epub/46229/pg46229-images.html#Page_152
14 Ibid p170
15 Ibid
16 Ibid
17 "Who Invented the Steam Blast?". Tract by John Wesley Hackworth 1876. Can be read here https://joanhackworthweircollection.blogspot.com/2021/11/who-invented-steam-blast-tract-by-john.html
18 Ibid
19 Robert Young Timothy Hackworth and the Locomotive p174 quoting p21 of Rastrick and Walker report March 1829
20 "Who Invented the Steam Blast?". Tract by John Wesley Hackworth 1876. Can be read here https://joanhackworthweircollection.blogspot.com/2021/11/who-invented-steam-blast-tract-by-john.html
21 Ibid
22 Letter from John Wesley Hackworth to George Edward Young 1882 – find it here https://johnwesleyhackworth.blogspot.com/2020/11/john-wesley-hackworth-letters.html
23 Timothy Hackworth and the Locomotive - Robert Young 1923 (2000) edition p220
24 The Story of the Hackworth Papers by Alison Kay and Jane Hackworth-Young from the National Railway Museum Review Spring 2013 can be found here https://joanhackworthweircollection.blogspot.com/2015/01/the-blast-pipe-letter-july-25th-1928.html
Further resources to be found at NRM York https://www.railwaymuseum.org.uk/sites/default/files/2018-04/Hackworth%20Family%20Introduction%20%26%20Archive%20List.pdf

OBITUARY: DAVID WILSON HARDAKER 1952-2021

It was with great sadness and a sense of shock that we learned of the unexpected death of one of our longstanding members, Dave Hardaker on September 29th, only a few days before turning 69. He was a regular on our walks and attended many of the monthly meetings at the Cricket Club in Darlington. He also reflected that popular partnership of railways and beer - he was a member of CAMRA and loved a good pint. He was also the Chairperson of Darlington Ramblers Association and a volunteer for Citizens Advice.

Dave and his parents moved to the house in Newton Aycliffe when he was two and that was where he died, so he spent much of his life around the S&DR. He studied science at the University of Birmingham and went on to work for Head Wrightson. It was while working for this industrial firm that he was sent on secondment to open a gold mine in Venezuela. This gave him a desire for travel, and he went on to visit almost 50 countries.

For much of his working life, he was a civil servant. He was a committed trade unionist and activist, and as such was attacked and badly beaten by members of the BNP in 1994. He took early retirement from the Job Centre after a viscous campaign against him because he failed to meet his 'target' of suspending claimants' benefits!



Young Dave

An older Dave masters the selfie.

When the Teesdale Branch of the Labour Party needed a candidate to stand in the May elections, Dave stepped forward to help. Although a 'paper candidate' he threw himself into the campaign and they did better in Barnard Castle West then they had ever done.

In 2017 Dave was elected to represent Simpasture on Gt Aycliffe Town Council as a Labour Councillor, following in the footsteps of his parents who were once Labour Mayor and Consort. He increased his majority in May.

He was a loyal friend and always delivered what he undertook. Dave will be sadly missed.

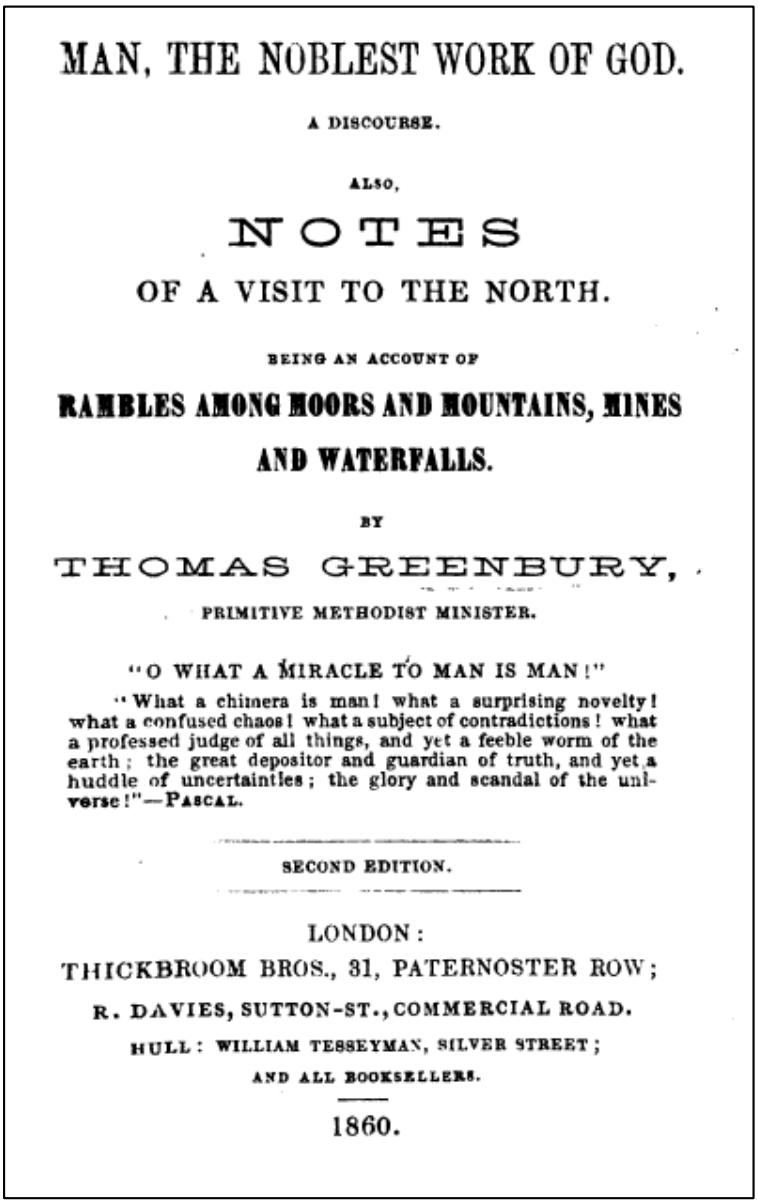
Jane Hackworth-Young

EXTRACTS FROM THOMAS GREENBURY'S NOTES OF A VISIT TO THE NORTH 1860

Jonathan Ratcliffe

The following are extracts from a larger work of the Methodist minister Rev. Thomas Greenbury of Hull, grandly titled: *Man, The Noblest Work of God, A Discourse. Also, of a Visit to the North. Being an Account of Rambles Moors and Mountains, Mines and Waterfalls.* In this work, alongside the religious discourse, he recounts his visit to Weardale by train in the late 1850s to preach in the dale and his visits to the lead mines of the area, giving a thorough description of the industrial vista that was Victorian Weardale. Relevant to our interests, he also gives a full account of his journey, taking the North Eastern Railway route via York, up the current East Coast Mainline with a stop at Thirsk before reaching Darlington, alighting at the old Bank Top Station and transferring to the Stockton & Darlington Railway Station at North Road by foot.

I've prepared some extracts from this work which may be of interest for the student of Stockton & Darlington Railway history. Starting from the Rev. Greenbury's arrival at Darlington to his transfer to coach at the then railhead of the Wear Valley Branch at Frosterley. The extension to Stanhope was not completed until 1861 and the line not extended further to reach his ultimate destination of Westgate until 1895.



MAN, THE NOBLEST WORK OF GOD.

A DISCOURSE.

ALSO,

NOTES

OF A VISIT TO THE NORTH.

BEING AN ACCOUNT OF

RAMBLES AMONG MOORS AND MOUNTAINS, MINES AND WATERFALLS.

BY

THOMAS GREENBURY,

PRIMITIVE METHODIST MINISTER.

"O WHAT A MIRACLE TO MAN IS MAN!"

"What a chimera is man! what a surprising novelty! what a confused chaos! what a subject of contradictions! what a professed judge of all things, and yet a feeble worm of the earth; the great depositor and guardian of truth, and yet a huddle of uncertainties; the glory and scandal of the universe!"—PASCAL.

SECOND EDITION.

LONDON:

THICKBROOM BROS., 31, PATERNOSTER ROW;

R. DAVIES, SUTTON-ST., COMMERCIAL ROAD.

HULL: WILLIAM TESSEYMAN, SILVER STREET;

AND ALL BOOKSELLERS.

1860.

Of particular interest is the viewing of Locomotion, then newly installed on its pedestal at North Road Station and the information that the Rev. Greenbury gleans from John Dixon, then Civil Engineer of the Stockton & Darlington Railway, who had been involved from the earliest days of the railway having assisted George & Robert Stephenson with the surveys.

"…we arrive at Darlington. This pleasant town stands on the slope of a hill, situate on the western bank of the river Skerne, which is spanned by a bridge of three arches. It is noted for the manufacture of hukabacks, [a type of woven fabric] diapers, stuffs &c. Fine linens are also made here; the Skerne waters being famous for bleaching. Wandering into the town, we find the market-place, square and spacious; on the eastern side of which, stands the church—a handsome structure, with a central tower, surmounted by a light spire, and very ancient, except the east end of the chancel, and the spire, which are modem. Several neat chapels, belonging to the varied classes of Nonconformists, likewise adorn different parts of the town, The chief occupation of the inhabitants appears to be flax-spinning, grinding optical glasses, founding iron, combing wool, making woollen yarn, It is said that Darlington gives the title of earl to the Marquis of Cleveland.

There is one object here of special interest, viz., a small locomotive engine, which is placed upon an elevated platform in front of the railway station, It is a somewhat antiquated piece of mechanism, weighing about eight tons; and its speed may be inferred from the fact that, at one time, a race actually came of between it and a stage-coach! The foundation-stone of the pedestal upon which it is placed was laid in the autumn of 1857, by Mr. Pease, MP, amid bursts of music and the firing of cannon. The driver of the engine was present, and had his portrait taken on the occasion,

J. Dixon, Esq., the company's engineer, has kindly favoured me with a few facts relative to this relic of the past, which may not prove uninteresting; and as he was George Stephenson's first assistant, the information is given from his own personal knowledge. The name of the old engine is " Locomotion;" its original name was "Active." It was the first ever used upon the Darlington or any other public railway; consequently, it is now honoured, in its old age, by being placed upon a conspicuous pedestal, as a memento of the past. It was constructed in 1825, by Stephenson & Co., of Newcastle, and was employed in taking the

first train along the line on the day of opening, September 29, 1825.[1] The first trip comprised coals, flour, and 250 visitors. There were thirty-eight vehicles in all: the whole weight being about ninety tons. The renowned George Stephenson, the constructor of the engine, was its driver on the occasion; " and local chroniclers were more out of breath than the Locomotive at recording its occasional pace of ten miles an hour."

For several years, the driver was James Stephenson, brother to the celebrated George,[2] the father of locomotive travelling.

The " Locomotion " had not been in use many years before it was superseded by an engine of an improved kind, viz. " The Rocket;" which was constructed for running faster with lighter loads, and embodied many improvements, such as a fire-box, boiler, blastpipe, &c.,[3]

However, with all the imperfections of the " Locomotion," there it stands upon its pedestal, a fit monument of the indomitable energy and perseverance of the skilful George Stephenson who manfully confronted the prejudices, and bravely dared the sneers and frowns of the whole scientific world. As he was pushing his discoveries, improving the construction, and endeavouring to increase the speed of his engines, hints of his honesty and sanity were freely thrown out by intelligent men: and it is said that the counsel for the railway company declared somewhat roughly, that " if George Stephenson estimated the speed of his engines at more than ten miles an hour he would ruin the company's prospects, and qualify himself for a cell in bedlam."

"We rambled round the pedestal, climbed upon the tender, and examined this antique relic of the past with peculiar interest. Since its iron limbs were constructed, the railway system has undergone an immense development, profiting by the improvements and suggestions of Stephenson, engines of a gigantic character have been constructed, compared with which the Locomotion " is but a mere infant, both as to size, and weight, and locomotive power.

Having scanned this infant engine to our heart's content, we then turned our attention to a ponderous and powerful engine of modem construction; and what a contrast! It is like placing a lamb and an elephant side by side, it is almost impossible to gaze upon one of those colossal monsters without awakened wonder and astonishment. "Monstrous beast of passage and of burden!" There it stands, a triumph of art! Its huge bowels a glowing fiery furnace, and its ponderous frame of iron quivering with the utmost energy of steam! Look at it, as it stands and foaming upon the iron track —what can you bring to equal it? There it stands, with its furnace heart and its brazen sinews as if instinct with life; more powerful than the elephant, more spirited than the warhorse, fleeter than the wild roe, and yet gentle as a lamb, and obedient as a babe! What an astonishing triumph of art! Man may justly be proud of it."

"But hark! Again, there rings on the air the piercing shriek of the steam whistle, and here comes the brazen-sinewed monster, belching forth smoke and vapour, as if it were a "fiery dragon" harnessed; while its thundering tramp makes the ground tremble like a travelling "Niagara." Taking our seat in one of the cars, away we dash across a pleasant country, now in deep cuttings, and then on high embankments, until we plunge into a dark tunnel, of considerable length, and emerge near the station for Bishop Auckland.[4] In passing, we may remark, that this interesting little town stands on an eminence of about 140 feet from the plain; and is bounded on the north by the river Wear, and on the south by the river Gaunless, which flows into the former near the town. The surrounding country is exceedingly pleasant and fertile, variegated with hill and dale, and the air remarkably salubrious. Here the Bishop

of Durham dwells in a beautiful palace, with a revenue of eight pounds per year. Truly his lordship cannot say with Peter, silver and gold have I none;" however, he can, and we would charitably hope he does, say to the sorrow-stricken sons and daughters of poverty, " such as I have give I thee." The river Gaunless flows through the Bishop's beautiful park, where, thanks to his Lordship, we, in concert with hundreds more, once passed a most delightful day, and were regaled by perfume from the rarest flowers, and charmed by strains of the richest music. On entering the park through a splendid gateway, the eye is attracted by a beautiful Gothic chapel, which displays its elegant proportions close to the palace the whole occupying the site of a former palace belonging to the Bishops of Durham,

It is said that the town derives its name from its vicinity to the Bishop's palace, and from the number of oaks which formerly grew here,

Leaving, then, this of oaks and palaces, our unwearied steed rubes along the line with us, until we arrive at a little smoke-wreathed station, directly opposite the Witton Park Iron Works. These iron works are situate in a capacious glen, which was now canopied with rolling volumes of smoke, On coming upon these Vulcanian establishments unexpectedly, it is like entering the precincts of pandemonium, especially after sunset ; for during the day, the fierce furnaces are generally outshone by the solar fire, Last year, we passed this place during the night, when it presented the appearance of a valley of fire, girdled by a line of flame, The yawning vents of the furnaces were belching forth their perpetual blaze. Occasionally, a bright flash of fire, like the forked tongue of a serpent, would dart out from the flaming vent; and, throwing its lurid light upon the heavens, set the clouds aglow, and transformed the sky into an immense dome of molten brass; which would again be darkened by heavy columns of coal-black smoke, the precursors of another blaze,

Employment in a region like this must be destructive to health, But I suppose it is profitable; and there are multitudes to be found who will sacrifice health for wealth…

Another scream from our steam horse, and away we go; leaving those " Mulciberian [metalworking] artists," with their sinewy limbs and smutty faces, to toil amid the stifling smoke and scorching fires,

Gliding swiftly along the line, bye and bye, we reach the bank of the river Wear, on which the upper part of the line is laid. This is the most delightful and picturesque portion of the journey, The river, with its shallow waters, goes warbling over its gravelly bed, and is broken into little rippling wavelets, the murmuring liquid music of which has a peculiarly soothing sound; while ever and anon the eye is pleased by the sylvan beauty of the bosky bank on the opposite side, which is adorned with shrubs and trees, and festooned with emerald verdure. At length we arrive at a small village called Frosterly, which is the terminus of the railway, consequently the rest of the journey must be performed by coach. Having taken our seats, and heard the well-known all right " of the guard, we commenced climbing the undulating road from Frosterly to Westgate. After being cooped up in the railway carriage, a rough seat on the top of the coach, with that keen bracing air, and such a romantic view, was a delightful change." [5]

Notes

1 Rev. Greenbury gives the wrong date here, the actual opening day was 27th September 1825

2 George Stephenson's fame was at an all time high with Samuel Smiles' exuberant biography of the engineer having just been recently published at the time the Rev. Greenbury had made his trip. Some of the statements made by Greenbury suggest that he may have read the biography prior to writing this work viz. the comments

regarding aristocratic prejudice against George Stephenson. John Dixon had also been a source for Smiles' biography so the Rev. Greenbury may have gleaned the same information from Dixon and likely could have sought him out as a result of reading Smiles.

3 The constricted blastpipe was not new to Rocket, having been utilised on the S&DR by Hackworth on his Royal George. The effect on improving the draw on the fire by directing the exhaust up the chimney had also been noted by Trevithick in the 1800s.

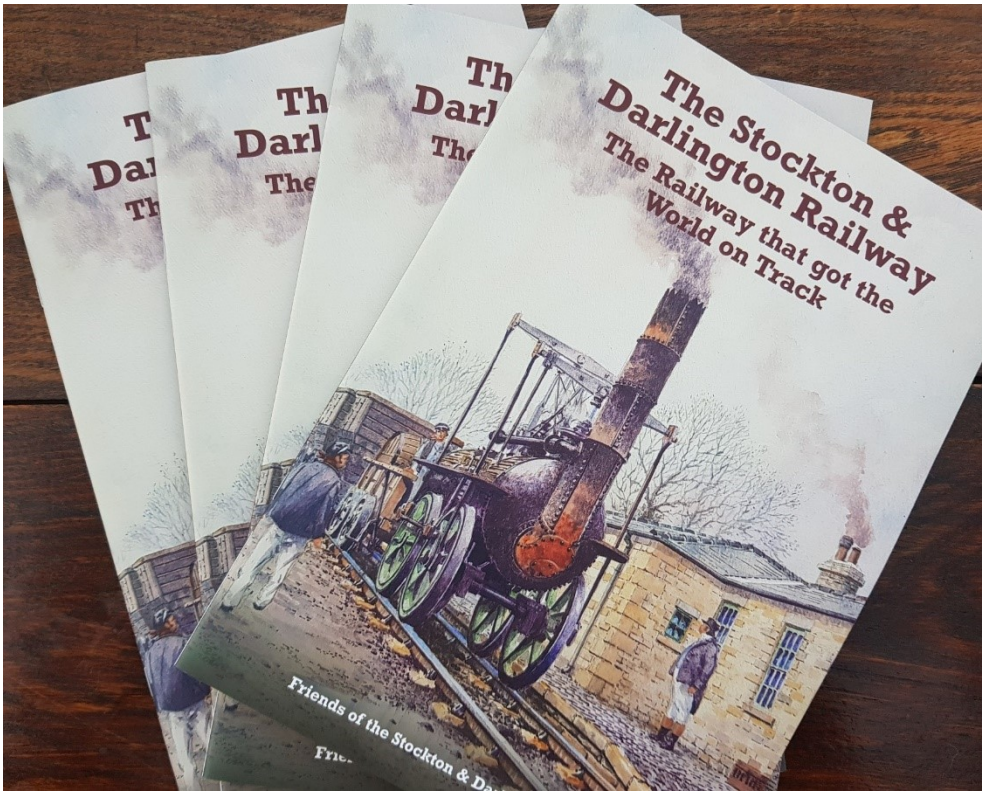
4 The original route over the Brusselton & Etherley inclines had been superseded by the 1225yd Prince of Wales tunnel under Shildon in 1842 giving locomotive access to the Auckland coal field.

5 It's interesting to note the contrast made between all enclosed railway carriage, mandated by the Railway Regulation Act (1844), the industrial vista of the Coalfields and Ironworks and the more serene experience of a top seat on the horse drawn coach and the rural vistas of upper Weardale and the natural beauty of the Bishop's Park. This speaks of Victorian idylls of rural vs urban life and the tension between the wealth creating industrialisation against the loss of traditional rural life and the impact on health.

NEW PUBLICATION: THE RAILWAY THAT GOT THE WORLD ON TRACK

Caroline Hardie

In October the Friends' latest publication arrived from the printers. 'The Stockton & Darlington Railway: The Railway that got the World on Track' is a 40-page booklet designed to set out some key information about the S&DR and why it was so important in world history. Too often we hear myths repeated about the S&DR being the first steam powered railway, or the first passenger railway, but in fact it is much more than that. It was the start of our modern railway network with a vision from the outset that it would spread across the country and be part of a new publicly available national transport infrastructure hauling anything and anyone for a fee. Through its pioneering phase between 1825-30 it influenced the spread of railways across the world as engineers and financiers came to Darlington and Shildon to see how to run a railway.



Beautifully illustrated with contributions from many of the Friends and a special cover painted by John Wigston (see the cover of this Globe), it has already been circulated to each of our members. Additional copies can be purchased from the Friends' web site for £5 plus p&p here. (https://www.sdr1825.org.uk/product/sdr-book/).

In the lead up to Christmas it has been flying off our shelves and is proving to be extremely popular. In the words of Matthew Pease, great great great grandson of Edward Pease (and who provided a less well-known image of Edward Pease for the book), *"What a terrific result! Its wonderful images, clear storyline and concise explanations make it a hugely engaging document which will be bound to spark interest wherever it goes."*

RENOVATION OF THE STABLE BLOCK AT THE S&DR YARM COAL AND LIME DEPOT

Bill Ramage

The Yarm branch of the S&DR opened in 1825. It left the S&DR main line at what is today Allens West station, and curved south down the west side of the road towards, what is today, the Tesco roundabout, and then ran along the north-east side of the present A67 road towards Yarm. The track passed behind Layfield House, that with the S&DR D13 plaque on the wall, and then crossed South View Road to end at the Coal and Lime Depot, behind the present Cleveland Bay Inn. When this building opened in 1825, it was known as the New Inn. It is recognised as the world's first purpose-built railway inn. An article on it has appeared in a previous issue of The Globe (April 2017, article by Brendan Boyle, p11).

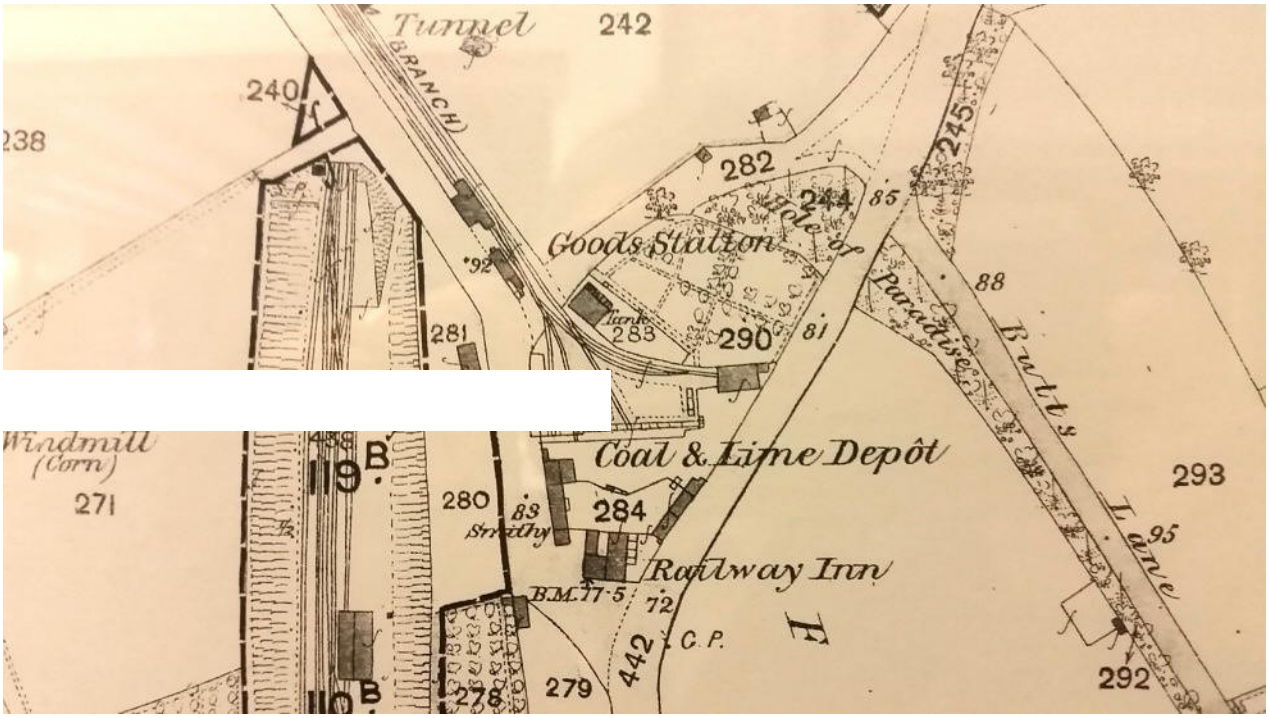
Traffic on the branch line peaked around 1850, but declined afterwards, as other railways opened in the area. It closed in 1872 with the business transferred to the newer 1852 (Leeds Northern) Yarm station, situated at the northern end of the viaduct. It is thought that the Depot remained as an annex for the new station until around 1900. After that it was occupied by various businesses, most notably several garages. The last of these was demolished in 2003 and the Parklands Court apartment complex was built on this part of the site.

The two aerial photos below show the site in 1954 and then in 2019. They were taken looking north from a similar point, probably above Yarm bridge. The junction in the foreground is where the road going north from Yarm over Yarm bridge forks right to Stockton and left to Darlington. By 2019, most of the coal cells, still visible in 1954, had been demolished or were hidden behind retaining walls behind the apartment complex. However, the end of one remaining cell can be glimpsed at the left-hand end of the complex, next to the Darlington road. The Cleveland Bay still remains (at the road junction), Layfield House (fronting onto the road in the top left, with the white car in front of it in 2019) is still occupied as a house, and the low range of buildings on 704-706 Yarm Road (facing onto the road to the right of the Cleveland Bay with the three cars parked in front of it in 2019) is still in use as retail premises. This low range is the subject of this article.

1954. Source: University of Bradford

2019

The low range, today referred to as 704-706 Yarm Road, was almost certainly a stable block for the horses involved in the work of the Depot and the Inn. The earliest map of the area found to date is the 1841 Tithe Allocation map. This building does not seem to appear on this, although the quality of this map, in the Durham Registry, unfortunately leaves much to be desired. The building does appear on the first edition OS map surveyed in 1855. Given other aspects of the history of the Depot, the most probable build date for the range is the early 1840s. By then, the original 1825 stable block (seen to the left of the Inn on the above 1954 photo) was too small, given the increase in demand, and the low range was built to provide additional stabling. The 1855 map also shows the range be divided internally into 3 parts. The middle part and the south-western part are in the Inn yard whereas the north-eastern part is in the coal yard.



OS 1855 map

In 2021, a planning application was approved by Stockton Borough Council to renovate the building for use as a kitchen showroom. This application involved mainly raising/replacing the roof which by then was in poor condition. While this work was being carried out it was possible to see inside the building. The work also involved removing and replacing the rendering, during which it was possible to see the brickwork.

Clearing rubble looking north

The above photo shows the inside of the building looking towards the north-eastern end. The rear wall is on the left and comprises 7 brick pillars with a single brick wall between each. The wall does not seem to be tied into the pillars. The front wall on the right (on the roadside) also has 7 brick pillars (although some have been repaired with more modern cement blocks) with a more substantial English garden wall type wall with rows of stretchers and headers in between them. The roof trusses were seated on the pillars. The photo above shows that by then, all of the pillars had been raised in height with cement blocks, in order to raise the roof. The gable end wall at the far end is of more modern brick and extends upwards above the roofline. This is explained later in this article, as the remains of a higher building on the end of the current one. The top of the front wall on the right which forms a fascia on the road frontage side of the building is also of more modern brick. The gable wall on the south-western end (behind the camera in the above photo) appears to be similar to the English garden wall bond brickwork on the front. The 1855 map shows this gable to be at right angles to the sides, whereas the later 1896 map shows the angled gable which exists on the building today. As there is no evidence from the brickwork that this gable may have been modified, it is possible that on the 1855 map, the shape of the building might be a drawing error.

Returning to the 1855 OS map, all three parts were probably similar and in use as stabling, or something similar. The coming of the railway to Yarm had made the Depot a distribution hub for coal, lime and many other materials, and almost all of this would be carried away in horses and carts. Stabling for the horses may have been in short supply. In addition, the Depot itself made use of shunting horses to collect waggons from the junction and to move them around the Depot. It is likely that these horses were stabled in the part of the building located in the coal yard. It is likely that all three parts faced inwards, away from the road. Indeed, there may not have been any walling between the pillars on what we now call the rear of the building, with the gaps being closed by full length wooden doors. This might

explain why the front of the building is double brick (as originally built this way in the 1840s) whereas the rear wall is of single brick (built to fill in the gaps when the doors were removed sometime between 1900 and 1930 – see below).

By the time of the 1913 OS map revision, part of the building was labelled as a smithy, possibly serving the new- fangled motor traffic and bicycles on Yarm Road, and may have been the fore-runner of the garage business (Bank Top) established in the ex-coal yard in the late 1920s. It is possible that, instead of facing into the Inn Yard, it now faced outwards onto the road, from which more of its potential business would come. It is not known whether part of the building might still have been retained as stabling, and still faced inwards to the Inn.
By the time of the 1939 OS map revision there have been major changes to the building.

Firstly, the north-eastern third of the building had been replaced by a wider and taller building. This end was originally part of the coal yard, and so would have become part of the Bank Top Garage business established in the coal yard in the late 1920s. This wider and taller building can be seen in the 1956 aerial photo above. It looks possibly to be a showroom or something similar. This wider building was itself demolished in the 1970s to make way for the newer garage, Parklands, which took over and expanded the Bank Top garage. Part of the southern-western end wall of this taller and wider building was retained when it was demolished to form the end wall of the range. This explains the newer brickwork in the photo of the inside of the building above.

Secondly the remaining two thirds of the original range (the part which still exists today) had definitely been re-orientated to face onto Yarm Road. They were now separated from the operation of the Inn by the erection of a north-south wall down the former Inn yard, to create an independent curtilage. They are in fact, known to have been occupied by an antiques dealer, John Bouch, since at least 1938. He seems to have remained until at least 1958; his name-board can still be glimpsed beneath a peeling modern fascia. The fascia was probably built in the 1930s as this style was fashionable in that period, and explains the more modern brickwork. Almost certainly the doors and windows facing onto Yarm Road were inserted then or possibly earlier. It is possible that bricks taken from these or bricks taken from the demolished northern end were used to brick up the apertures in the rear wall.

The reroofed building

After Mr Bouch, the range had been occupied by a variety of businesses, including a carpet shop, a camping and leisure centre, motor spares, pet food supplies and most recently a tattoo parlour. It had remained empty for the last two or three years. It had fallen into disrepair with concerns over integrity of the roof. It seems that in the current renovation it was not possible to save any of the roof and it has been completely renewed with new trusses and tiles. It has also had new rendering added but the original brickwork appears to have been retained. New windows and doors are now being added in place of the 1930s ones. I would say that although it will look modern, it should now last for many more years and retain the shape and some of the character of the original, although its front will resemble more how it looked in the 1930s and not the 1840s.

SKERNE BRIDGE IN THE NATIONAL NEWS!

An update from Eric Branse-Instone, Historic England's Listing Adviser for the S&DR Heritage Action Zone.

Skerne Bridge. Photo: Niall Hammond

Most readers of The Globe will already appreciate the significance of the S&DR's bridge across the River Skerne in Darlington. Indeed, the importance of the bridge was recognised half a century ago when it was one of the first industrial sites to be designated nationally as a scheduled monument. However, it was the only railway bridge in the country that carried a live railway line that was protected as a scheduled monument rather than as a listed building. This complicated its management, in practice, potentially undermining its protection because Scheduled Monument Consent procedures are quite different to Listed Building Consent. This has now been resolved as part of my reassessment of sites within the S&DR Heritage Action Zone, with Skerne Bridge being listed in Grade I and descheduled. The local authority now has an active role in overseeing works to the bridge as well as Historic England and the bridge's significance should now be better accounted for in Network Rail's internal systems. Despite this change being quite technical and administrative in nature, Historic England highlighted it in our annual round up of the most significant new listings of the year. Skerne Bridge has consequently been picked up in the national media, for example I News reporting "The masonry bridge in Darlington was built in less than eight months and remarkably still carries regular passenger trains nearly 200 years later. It is now one of only seven Grade I listed railway bridges in England." That quote is correct: Skerne Bridge is now one of a highly select group of bridges to be listed in the highest grade. Of all listings, only 2.5% nationally are at Grade I, this being only the third time that I have been able to make such a recommendation in 17 years as a Listing Adviser.

My assessment of the bridge was enabled by the FSDR, and I particularly drew on the research of the late Brendan Boyle as published in previous editions of The Globe (July 2017, April 2019). The official listing is available here https://historicengland.org.uk/listing/the-list/list-entry/1475481 but readers may also be interested in the advice to the Secretary of State recommending the listing which included the following:

The five-pound note of the 1990s

There is no question that Skerne Bridge meets the criteria for listing because it can be shown to be of exceptional special interest fully meriting listing in Grade I. Architecturally, Ignatius Bonomi's bridge is a fine example of Georgian masonry bridge design: an elegantly proportioned structure that was sensitively completed with restrained embellishment. Bonomi, a notable architect in North East England throughout the first half of the C19, was a skilled designer of masonry bridges, having been the County Surveyor of Bridges for County Durham since 1813. The quality of his design is attested by the fact that it is still in its original use after nearly 200 years, all the more remarkable given that it was completed within 8 months of Bonomi being approached by the directors of the S&DR. The early strengthening works, necessitated by the railway carrying significantly higher tonnages of traffic than anticipated, were principally designed to strengthen the earthwork approach embankments rather than to address deficiencies with the bridge itself. These strengthening works, the added wing walls to either side of the arch, are seen as adding to the special interest of the bridge. Skerne Bridge is Bonomi's most famous design and has been used by some to claim Bonomi as the world's first railway architect: like many claimed railway firsts, this is open to debate, in this case because of a lack of agreement on precise definitions. What is clearer and more significant here is that Skerne Bridge was the most impressive and technically challenging engineering structure built for the opening of the S&DR. It can be seen to embody the momentous achievement of the railway that was so influential both in England and abroad. When a single illustration is required to represent the great historic significance of the railway, it is typically Skerne Bridge that is featured, such as demonstrated by its use on the rear of the £5 note in the 1990s. Historic England's appreciation of the significance of the bridge in a national context has more recently been shown by the fact that it was included in Historic England's podcast series in 2018 'Irreplaceable: A History of England in 100 Places': Skerne Bridge being the only railway-related place included.

Skerne Bridge fully merits inclusion on the List at Grade I alongside other early Grade I railway bridges such as Ralph Wood's 1727 Causey Arch for the Tanfield Wagonway (a horse-drawn, timber-railed early railway), George Stephenson's 1830 bridge over the River Irwell for the Liverpool and Manchester Railway, and Isambard Kingdom Brunel's 1839 bridge across the Avon in Bristol for the Great Western Railway, all bar the former being younger than Skerne Bridge. Bonomi's bridge for the S&DR across the Skerne is of

equivalent exceptional special interest relative to these other bridges and thus listing in the highest grade of Grade I is recommended.

Sketch by John Skinner of the Skerne bridge prior to its alterations. The caption above the sketch reads: 'Rail road recently made from Stockton to Darlington. 27 miles from Durham to the right of the road'. Published with the permission of the British Library ref Add MS 33684 f. 89

NEWS AND EVENTS

Matt Vickers, the Conservative MP for Stockton South is campaigning to make Stockton the new home for Great British Railways, the organisation that is to replace Network Rail. In this he has the support of Michael Portillo, former Conservative politician and now presenter of many railway television programmes. In the Northern Echo on the 29th November 2021 (p15), Vickers wrote, *"Compared to places like Darlington and Shildon, it is frankly embarrassing that we have barely acknowledged the role Stockton played in pioneering this technological revolution that changed the world. That needs to change."*

A new Amazon has opened in Gateshead and with some encouragement from one Lucy Hardie-Hammond (yes, a relation to the Editor and the Chair of the Friends), Amazon have decided to name their meeting rooms after pioneers of the North East. So, there is a now a Stephenson Room named after George Stephenson. Other historic pioneers are also recognised including Sir William Armstrong, Richard Grainger and Charles Merz. More recent pioneers include Elsie Tu, David Olusoga, Sir Harry Shuklah, Chi Onwura and Susan Auld.

The Etherley Incline Witton Park Colliery Group has produced a film called Coal by Degrees The film explores the story that led to the creation of the Etherley Incline, looks at the challenges conquered in its construction, its historical significance and future importance as an industrial monument. It is based upon conversational interviews with Mary Smith and John Raw, two key members of the Etherley Incline Witton Park Colliery group, and features footage of the incline itself and historical images. This short film, created on a volunteer basis

by Dave Reynolds of the Shildon Heritage Alliance runs to just over half an hour in duration, and can be viewed on YouTube at https://youtu.be/ulaWIJOiJHk

A length of fishbelly rail was found from a section of eroded river on Cockfield Fell by Chris Cooper and his son Seth. This is an early form of rail used by the S&DR in its pioneering days. It was most likely lifted from the 1830 Haggerleases branch line when it fell into disuse and reused at one of the many pits on the Fell. The rail was temporarily stored by John Raw until a new home was found for it at the Head of Steam Museum. Many thanks to Lee McFarlane of Historic England for dealing with this find from a scheduled monument and to the Field Reeves of Cockfield Fell for agreeing to its donation.

Seth Cooper with his amazing discovery of a fish belly rail on Cockfield Fell

Next year, Locomotion in Shildon will be putting planning permission in for their new building. This is scheduled for submission in late January/early February and as part of this they will be hosting an exhibition on-site at Locomotion from 15-20 January that explains the proposal. They will also be holding two drop-in sessions – one at Locomotion from 3-7pm on 19 January and another at Shildon Library on the 21 January.

In August, the chaldron waggon which was located at the foot of Cheapside in Shildon was lifted by Sheltee Industrial Maintenance Ltd (at a reduced cost as they support the vision for 2025) and taken to Lee Harle Lee Ltd for conservation and rebuilding. According to Paul Harle, the waggon is not a true replica but just a mismatch of parts – one set of wheels has the maker's mark 1894 Hurst Nelson & Co Ltd Motherwell – whilst the other is from Ashbury Ltd Manchester. The 'coal' on the top of the waggon is a fibreglass replica of coal.

The chaldron waggon being lifted ready to be taken away for reconstruction. Photo: Paul Harle

The proposals to install a glass box on the north (front) elevation of the 1833 Goods Shed at North Road, Darlington has been withdrawn by Darlington Borough Council and replaced with an alternative glass box on the less sensitive west gable end. The original proposal ran counter to advice given to the Council by the Friends and was being opposed by the Friends, Historic England and the Council's own Conservation Officer. Hopefully the alternative design will result in an attractive extension and the greater floorspace required to ensure as much income as possible from the proposed welcome area, café and gift shop.

The Friends' area groups from West Auckland and St. Helen's (WASH) and Brusselton (BIG) have arranged a display of S&DR artefacts, books and old railway maps etc, in the People's Community Museum at 27 Railway Street, Bishop Auckland (located just off Newgate Street) DL14 7LR and managed by the former B I G founder member Michael O' Neil. This display will run until the end of January 2022. Unfortunately, the display is in the balcony area and so is NOT suitable for wheel chair access and involves stairs. The opening hours are Tuesday

until Saturday from 11.00am until 8pm. Closed Mondays plus any Bank Holidays in this period. Enter through the Bingo Hall foyer and sign in.

Our annual celebrations in September went ahead despite various Covid related hiccups. The three evening guided walks in Stockton based on the experiences of the navvies on the opening day were a huge success. How could they not be, given that they featured S&DR history, beer, bread (and cheese) and music. Let's hope there is scope to do this again and perhaps spread the walks to Shildon and Darlington?

People gather for the Beer and Bread guided walk in Stockton

The marquee in Stockton stuffed with railway related stalls was also a huge success and visited by 1,800 people. Thank you to everyone who attended.

Congratulations to everyone who managed to walk in the footsteps of the S&DR surveyors of 1821 for the full three days from the Witton Park Colliery area to Stockton as part of the celebrations. Thank you to everyone who joined, even if it was only for a day or two.

Preparing for 2025……Levelling Up and capital grants of c.£10 million are confirmed for Durham County Council (and beyond) and Darlington Borough Council is continuing with the £20million Rail Heritage Quarter redevelopment. We also have high hopes of a successful

joint lottery bid with Darlington Council for c.£2.5 million in December. This will see the Lime Cells on Hopetown Lane restored and paid, professional support for our work. This really will be a step change in how the Friends operate and what we can achieve on behalf of communities along the line.

Discussions on possible Conservation Area status for the S&DR (as enjoyed by the Settle and Carlisle Railway for instance), continue as part of a working group with Historic England and local authority conservation officers. While Durham and Darlington are supportive of this, Stockton are less so but have shown some interest. Various Trustees are commenting on the proposed boundaries.

The Friends are also involved in a 'Local Listing' project for the S&DR being run from Durham County Council. This will allow us and any member of the public to nominate buildings, structures, signs or archaeological sites associated with the S&DR for protection. Nominations must be in soon, so do let us know if there are S&DR related assets you think should be included.

The Friends have been working with the Heritage Action Zone officer and Durham County Council Conservation Team regarding landscaping plans for the line through St Helen Auckland to significantly improve this area including a new deck on the Gaunless bridge abutments. We held a well-received public event on 2/3rd November to show the public the plans, and subsequently worked with children from Copeland Road school in West Auckland on 23rd November to get their ideas…how about an S&DR themed skatepark! We need to get younger people inspired.

While 2025 is our own 'big event', it is also worth noting that County Durham has now also been shortlisted for the competition to be the 'City of Culture' that year.

We sadly say goodbye to Seb Pickles the Darlington conservation officer who has been a key supporter and help in recent times, and we hope both Darlington and Stockton councils fill their vacancies for conservation officers as soon as possible.

2022 looks like it will be a busy year, with Durham County Council imminently appointing an S&DR rights of way officer to work along the 26 miles and make real progress on the walking/cycling route; and proposals forthcoming for recruiting a 2025 event director to start turning aspirations and feasibility studies into hard and fast plans.

Contact and relations with Network Rail continue to improve via the Rail Heritage Board with a number of things now finally being addressed, including the rebuilding of the 1825 wall at Urlay Nook.

Historic England have published a research report into the S&DR Carriage Works in Darlington. It can be found in the Online Library of the Friends' web site.

The Friends' website now has copies of Robert Young's Timothy Hackworth and the Locomotive for sale (£15) and The Three Greeners of Etherley and a Model Steam Engine by Thomas Walker (£10). https://www.sdr1825.org.uk/store/

MEMBERSHIP

Our current subs are:	
Under 18:	FREE
Individual:	£15
Unwaged/retired:	£10
Joint: (2 adults at the same address)	£24
Corporate:	£50

Fees can be paid at any time if you have forgotten. Our preferred method of renewing your membership is via direct debit or standing order. This saves you and the Friends considerable time and ensures that the membership secretary can spend his time on other useful Friends' work. Our membership fees contribute towards our annual celebration events which raise the profile of the S&DR and they will be the Friends' contributions towards any projects that we seek funding for and our activities. You will receive a PDF copy of The Globe and a hard copy if you express a preference for this when you renew membership. You will also receive preferential invitations to events and S&DR related outings. You can also renew or take out new membership using the Friends' web site shop. When you join you will also be given a password to access the members only section of the web site. If you have any questions regarding membership, you can contact Peter Bainbridge, the Membership Secretary on:
membership.SDR1825@virginmedia.com or just visit our web site at
https://www.sdr1825.org.uk/join-us/

Peter Bainbridge, Membership Secretary

The Globe is named after Timothy Hackworth's locomotive which was commissioned by the S&DR specifically to haul passengers between Darlington and Middlesbrough in 1829. The Globe was also the name of a newspaper founded in 1803 by Christopher Blackett. Blackett was a coal mining entrepreneur from Wylam with a distinguished record in the evolution of steam engines.

 Opinions expressed in the journal may be those of individual authors and not of the Friends of the S&DR. **Please send contributions to future editions to caroline@aenvironment.co.uk. The deadline for the next issue of The Globe is 18th March 2022.**

The Stockton & Darlington Railway

Opened in 1825 and running 26 miles between Witton Park in Co. Durham and Stockton via Shildon and Darlington, this is where the modern railway network was born.

'The Railway that got the World on Track!'

Walking the line at Locomotion. Do join us!

The Friends of the Stockton & Darlington Railway was formed to bring together all those with an interest in the S&DR and to ensure that the 1825 line receives the recognition and protection it deserves.

The Friends are working with local councils and partners to conserve and protect the original 1825 main and branch lines and associated structures. We seek international recognition for the Stockton & Darlington Railway as the birthplace of the modern railway. Our members also undertake research and fieldwork to make historic documents more accessible and we record surviving remains. We have produced seven self-guided walk booklets along the line which can be downloaded or purchased from our website.

Find us on YouTube and Facebook – search for Friends of the Stockton & Darlington Railway.

Friends of the Stockton & Darlington Railway.
WWW.SDR1825.co.uk