

THE TREVITHICK SOCIETY

NEWSLETTER NO. 4

FEBRUARY 1974

The Newsletter editor regrets that this issue will be rather late, due to other pressures on him, as well as to the national events of which you are all aware. He would also like to apologise for a small mental aberration in the last issue - the secretary's initials were misquoted as P. A. S. - they should, of course, be A. P. F. S.

The next Field Day will be held on 27th April and will consist of visits to the Carnglaze Slate Caverns and to South Caradon Mine. Coaches will leave Camborne free car park at 9.30 a.m., calling at Harveys' car park, Truro at 10.00 a.m. and at the multi-storey car park, St. Austell at 10.30 a.m. and arrive at Carnglaze (near St. Neot) at about 11.00 a.m., returning by the same route in the evening. Lunch will be at the Cheesewring Hotel from 1 p.m. to 2.15 p.m., and the visit to South Caradon will begin at 2.30 p.m.

For an account of the Caverns by the present owner, Mr. Pascoe, see later in this Newsletter. It is hoped that our members Roy Shambrook and Jack Trounson will be attending to pass on some of their knowledge of mining in the Caradon area.

For general convenience payment for the coach (75p), Carnglaze Slate Cavern (10p) and lunch at the Cheesewring Hotel (£1 for 3 courses) will be ticket, in advance, and members are requested to send their remittances to the Meetings Secretary, Mr. D. Ingham at 25 Barripper Road, Camborne TR 14 7 QW as soon as possible, for whichever items they wish to join in.

At the time of writing the Cornish mines have managed to live with the problems of electricity supplies but the prospect of extensive uncontrolled cuts must be of the greatest concern to them as their sumps can only accommodate the amount of water that would accumulate in a few hours without pumping. Even this would take days to pump out, and if flooding continued for longer than the breathing space given by the sumps, recovery would be an extremely costly business and might in a comparatively short time become uneconomic.

Included with this issue of the Newsletter is a complete membership list - up to date at 1st January 1974. It includes all those whose subscriptions have been paid in 1972 or more recently - others have been omitted, but can of course be reinstated on receipt of the arrears. Please notify our membership secretary Ramon Thomas, c/o The Holman Museum, Camborne, of any errors or omissions. Lists of additions will be published in the Newsletter from time to time.

We should like to offer our congratulations and good wishes to our Journal editor, John Stengelhofen, on his recent appointment to the post of Director of the new Wheal Martyn museum, near St. Austell. He has already been responsible for the design of the buildings and layout and we look forward to visiting the site as soon as the society can be accommodated, perhaps in 1975, certainly by 1976.

A number of members have been kind enough to comment on the contents of the Newsletter. Apart from general approval and encouragement, which are very welcome, there have been suggestions that we should include more information on current industrial activity in Cornwall. This is not easy, within the space and cost available, as our main interest must remain in the historical field - it is, we believe, essential to maintain and enhance our standing as a learned society. However, we will endeavour to comment on developments which seem likely to have lasting effects.

As well as the feature, begun by our secretary in the last issue, on "Cornish Industry 100 years ago" we hope to include a variety of biographical notes and items on particular engines or works.

We have always found it difficult to carry out substantial field projects because of the problems of getting sufficient volunteers to turn up regularly. However the work on dismantling the dipper wheel and round frames at the old Tuckingmill works for the West Penwith R.D.C. has proceeded fairly well. The cast iron buckets, wooden rim and some spokes of the dipper wheel were dismantled without too much difficulty, but quite a lot of hard work. The main wooden spokes, however, were fitted into the cast iron hub when dry and have expanded to fit very tightly, as was the intention of those building the wheel. In order to get them out without damage they will have to be dried - this has not been practicable during the last two or three months. Most parts of the dipper wheel have now been put into store at Vounder Dry, near Tregrehan, St. Austell which has been kindly made available to us by E.C.L.P. Any members able and willing to help with this or other projects please let the secretary know. It is most important that all members who can possibly do so come and help at Tuckingmill before the end of March, which is the deadline for removal of the equipment there.

Another proposed activity is to undertake a proper survey of the surviving industrial buildings in the County and to complete Council of British Archaeology record cards. This, of course, could be done by individual members, in their own time and their own areas, so should be easier. It is hoped to print a list of present entries in a future Newsletter.

We regret that copies of the new Membership Application form were not included with the last Newsletter - they are with this issue, together with a leaflet giving information about the Beamish Open Air Museum at Stanley, Co. Durham.

As well as the first issue of the Journal, "Dolcoath, Queen of Cornish Mines" by our member Mr. T.R. Harris, is now available from the Hon. Secretary at 23 Merrick Avenue, Truro. The price to members is 75p (+ 10p postage) and £1 to non-members. We rely very much on the support of our members to cover the cost of our publishing ventures and for their future expansion, so we hope that you will all order copies of this very excellent and well produced book. We hope to add next a reprint of a Perran Foundry catalogue of about 1875 with many interesting illustrations. Again we hope to offer this to members at 75p (+ 10p postage), as compared with £1 to the general public. Pre-publication orders for this too can be sent to the Secretary.

The Society's publications are available at the following retail outlets - members may care to patronise these, which have been willing to support the Society in this way:

Peter Dalwood, Chapel Street, Penzance.
East Pool Engine House, Pool, Redruth. (The National Trust)
Tolgus Tin, Portreath Road, Redruth (our member, Mr. P. Welch)
Wendron Forge, Wendron, Nr. Helston (our member, Mr. P. Young)
The Quay Bookshop, Quay Street, Truro.
S.P.C.K., Quay Street, Truro.
The Pike Street Bookshop, Liskeard.
D.J. Farquhar, 4 The Strand, Padstow.
P.H. Edwards, Kingston Mill, Manchester Road, Hyde, Cheshire.
The Baker Street Bookshop, London.
Ironbridge Gorge Museum, Ironbridge, Salop.
Beamish Open Air Museum, Stanley, Co. Durham.
Morwellham Quay Trust, Nr. Tavistock, Devon.
K & D Owen, 4 King Street, Tavistock, Devon.

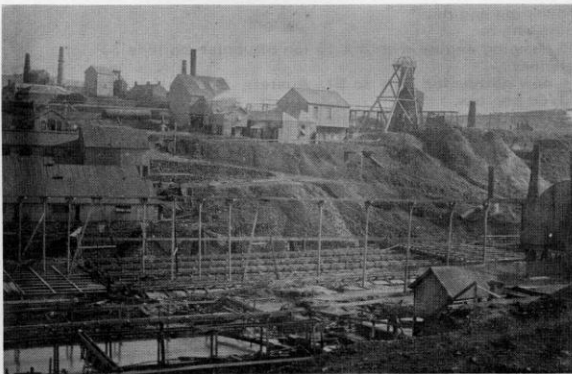
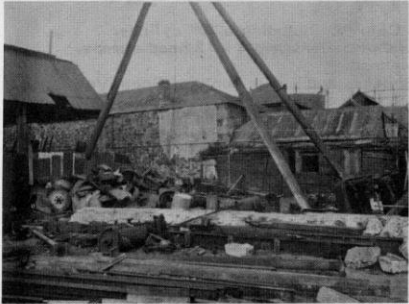
It is expected that the Wheel Martyn Museum will also become a stockist in due course. The Journal has already sold so well that the Council has authorised a reprint of an additional 500 copies, the original print order being 1500.

BOROUGH ARMS FOUNDRY, PENZANCE

We reproduce in this Issue of the Newsletter some photographs of the Borough Arms Foundry, Penzance, taken in the first quarter of 1932 when the site was being cleared prior to Messrs. Holmans moving to the present dry dock site which was also cleared of old buildings at the same time, including the Anglo-American Oil Company and Leggs Boatyard.

Some details of the history of The Foundry have kindly been supplied by our Members, Mr. T.R. Harris and Mr. C. Carter, and it appears that the Foundry was established in 1772, presumably as a Brass Foundry. Little is known about the early history of the site, but in 1847 the premises, (in the area then known as Gas Wharf) was Managed by Nicholas Holman of St. Just. Later in the 19th Century the Borough Arms Foundry was Managed by John Bond who was at one time engineer to the Sultan of Turkey. Following this the premises were re-purchased in 1893 by N. Holman and Sons, although it appears that the Foundry part of the works had been discontinued by that time. However, the machine and fitting shops had been developed and as these premises fronted onto Market Jew Street, Messrs. Holman and Sons used them as a Bicycle Agency and repairing depot along with the sale of Ironmongery and farmers' small tools. Later adjoining premises were acquired and in 1900 part of the premises at the rear, which at one time was a garden, was built over for workshops which included a Plumber's shop whilst a second storey was used as a cycle showroom. The activities of N. Holman and Sons Limited in the 1930s at 100 Market Jew Street were listed as Engineers, Brass Founders, Bell Hangers and Cycle Depot. In addition it is understood that certain Marine Engineering work was carried out and that the Foundry specialised in School desks, windmills, and Cornwall County Council direction signs.

Perhaps any other members having information on the history or work of the Foundry would contact the Hon. Secretary.



Above.
Borough Arms Foundry,
Penzance.

Left.
This photograph of
Valley Shaft, Dolcoath
(reproduced by kind
permission of Mrs. O.
Glasson of Carbis Bay)
was unable to be
included in 'Dolcoath:
Queen of Cornish Mines'
but will be of interest to
members as an example
of the typical Cornish
mining Landscape.

Cornish Industry - from the Royal Cornwall Gazette, Jan. to March 1874.

3rd Jan. At the dedication of a drinking fountain in Liskeard the M.P., Mr. Horseman delivered a poem just composed by him:

"Far nobler he, the Ex-Mayor of Liskeard,
Who grieved to see his neighbours drink so hard,
He vowed that he would never sleep a wink,
Till he destroyed the demon of strong drink.
He built a fountain, streams of purest water,
As clear as crystal, nourishing as Porter,
Converted publicans took down their signs,
And ruined Merchants could not sell their wines;
Grateful permissives, ere they turned to home,
Cried out "lets give loud cheers to Mathew Loam".

St. Ives - all the drift and seine fish have been purchased by Mr. Thomas Jenkin (about 4000 hogsheads) at 37s per hogshead. This was only offered after the sellers had complained of the 30s previously offered and advertised in the London Press.

Bodmin - a single line rail link to the town from Bodmin Road then in course of construction and expected to cost £80,000 in view of the promoters intention to follow an almost straight line.

Wheal Jane - employees: 125 men, 11 boys underground and 45 men and 102 boys and girls at surface - making a total of 272.

Polbreen Tin Mine - £13,000 (£6. 10. 0. call per share) called to date, and it was unanimously decided to wind up the company despite the advice from Captain Nancarrow that a further expenditure of £6,000 to prosecute the work would result in a substantial benefit to the shareholders.

3rd Jan. London Tavern - the meeting place of Adventurers in Polbreen Tin Mine and Great South Chiverton Lead Mine.

Ding Dong - £10,000 p. a. in labour and £4,000 to merchants p. a. 132 men on tutwork, 10 on tribute and a total of 275 employed. Messrs. Bolitho own one half of the mine.

During 1873, 4,882 tons of tin were imported from Australia, while the total copper ores from Devon and Cornwall amounted to 55,104 tons, realising £245,527 at an average of 6½%. The 1872 figures were 65,364 tons, realising £316,305 at 6½%. 1874 was expected to be more prosperous.

10th Jan. Sale of machinery at Castle-an-Dinas Mine, St. Columb, including a 38" cylinder rotary engine, 10' stroke with 2 flywheels, 20 tons of boilers and 4 x 12 head stamps. For sale as a going concern - Bell Tin Mine, Gwennap.

Polrase Mine adjoining Greatwork in parish of Breage, and ½ mile north of Great Vor. Started in May 1873 one engine was erected which commenced in September and in May following (?) 12 heads of stamps were erected. Since this time 26 tons of tin have been sold and the mine is now down to 50 fms. A good lode has now been cut in the cross cut driving north at the 50 fm level.

Killifreth - in 18 months 70 tons of tin sold at an average of £75 per ton, and with 24 tributes a profit of £250 per month was being returned from the lode at Buckingham Shaft. (1½ cwt tin per ton of ore). It was soon hoped to try for copper.

17th Jan. List of mines "knocked" and new mines opened - P. 7.
Sale of Poligey Moor Mine (tin) Sett, machinery and materials - including a 24" rotary engine of 10' stroke with an 11 ton boiler and 16 heads of stamps.
Trumpet Consols, Helston - about 400 employees entertained to tea and cake by the Purser, Mr. Henry Rogers in the new drying house. Some of the men present had been employed at the mine for over 20 years.

24th Jan. Sales of mine machinery:
Pennance Mine, Lanner - 50" pumping engine.

West Wheal Jewell - 54" pumping engine.

Wheal Rose United Mines - 80" pumping engine with 3 x 15 ton bitubular boilers 33' long and a 25" horizontal winding engine.

24th Jan. Trustees of the Treffry Estate now delivering lime to St. Austell, Burngullow and Grampound Road Stations at 13/6d per ton.

Hosken & Sons of Loggans Mill, Hayle, have secured the contract to supply Helston Union with fine flour at 44/- per bag and seconds at 38/-.

Fatal boiler explosion occurred at Higher Menedue, Luxulyan, where an iron mine has recently been opened by Messrs. Chatwood, Oatey & Co., the well-known makers of burglar-proof safes. The engine, a very old one of 10 H.P. was in the charge of one Nathaniel Dyer when the bolts connecting the tube and boiler gave way.

St. Stephens Iron Ore Co. - financial difficulties were reported to have been overcome and the plant (including 2 steam engines) had been erected at Nanjeath. No. 1 shaft now 10 fms below the old workings. Output for 1874 estimated at 13,000 tons (The discoveries at Ingsdon Mine most satisfactory and with enormous reserves - sales are at a profit of 22/6 per ton).

Carr Gulver Mine bought by Messrs. Bolitho & Co. and Messrs. Michell & Co. for £1,600.
Sale of 14" perpendicular double acting high pressure steam engine, 2 ton flywheel, and other machinery for sale from Basset Foundry, Devoran, as a result of the proprietor

- having obtained the use of a stream of water which renders steam power unnecessary. Bankruptcy of Sampson Stephens, Wine & Spirit merchant of Penryn. Sale of household effects, oil paintings, piano, carriages, etc. Brewing Utensils: "Brewery, Beer Cellars, etc. - several large copper furnaces and fittings, galvanised iron cisterns and pipes, 2 large vats, 2 ditto coolers, mash tub and washing apparatus, forcing pump and fittings, about 40 barrels, 2 Stillions, corking and bottling machines, bottle rack, large number of bottles, set of copper measures, 2 mint filters, wine baskets, etc., 6 large spirit barrels and taps, 70 doz. of Claret, several doz. of Sherry, Marsala and otherwines etc. In the yard, 300 large and small spirit casks."
- 14th Feb. The Bodmin Gas Consumers Co. - report of 9th A. G. M. held at Guildhall. Reported that the scrubber had been enlarged, and that the erection of an exhauster had been effected with a great saving on the carbonisation of coal. The ammoniacal liquor - previously a waste - was now being manufactured into sulphate of ammonia. The accounts showed a balance of £426 and a dividend of 8% was declared. A discount of 3d per 1000 feet to be allowed on accounts settled within 1 month after quarter day, thus virtually reducing the price to 6/3d per 1000 feet.
- 14th Feb. "Mining Intelligence: (P5) - "Shares bought at £250 two or three years ago are now not worth more than £50 or £60; and instead of dividends large calls are being made in some of the best and oldest mines in Cornwall. If prices go much lower it is feared that there will be a regular panic and smash, for the prices of materials and labour keep up while prices of produce go down. It is hoped by some that after the elections are over and Parliament is opened that confidence will be restored."
- 21st Feb. Sale of materials at East Phoenix Mine, in the parish of Linkinhorne, including (a) 56" pumping engine of 9^l stroke, and one boiler (b) 24" winding engine of 8^l stroke, drawing cage and boiler (c) 24 heads of stamps. Catalogues may be obtained from Northumberland Foundry, Launceston.
Sales of materials: Wheal Rose United to J. C. Lanyon & Son for £4, 505.
Carzize Mine, Crowan, to Messrs. Harvey & Co. for £2, 855.
- 28th Feb. Sale of materials: Fortescue Tin Mine, St. Stephens; The Bryan Tin Mine, Roche; Okel Tor Mine, Calstock; Poldice Mines, St. Day.
- 7th March The Cornwall Railway Co. meeting led to the supposition that the branches to Bodmin and up the Fal valley would not be constructed: "We suppose nobody will care very much about the abandonment of the Fal valley line, especially as the Cornwall Minerals Railway Co. seeks power to construct a line down the same valley, with an outlet of its own at St. Just, but the branch to Bodmin is a different matter. Bodmin being the centre of nearly all the County business its isolation is a public grievance." The expected cost for the Bodmin branch was about £70, 000, but had received little local support. "As to the narrow gauge, the Great Western are rapidly laying it down, and everybody admits that it must in the end be the national gauge, but.... we are not likely to see the narrow gauge on the Cornwall line for some time to come. 166, 635 tons of china clay had been carried in the ½ year."
- 7th March The Penpol Tin Smelting Co. - a few years since, the Penpol old lead works at Penpol, Feock, near Truro, were converted into tin smelting works, of which Messrs. James and Shakespear metal brokers, of London, were the chief proprietors. From some course or other, however, the works have been stopped since Christmas last. The men were then all discharged, and some of them are now seeking a livelihood in foreign countries. We are glad to hear there is a probability of the lead smelting works being resumed at Penpol.
- 7th March Perran Consols, formerly Wheal Vlow, in the sands near the old church, Perranzabuloe - after glowing reports in the London paper only a few days ago, a petition for the winding up of this limited liability company has been presented to the Vice Wardens Court after £25, 000 of capital has been called up.
Wheal Owles and Spearne Consols mines at St. Just both to be stopped. Cornwall Minerals Railway: 2nd ord. general meeting, 18 engines and 420 wagons ordered to date; 11 engines and 28 wagons delivered so far to Par. The Fowey to Treamble Section to be completed in the next few weeks. (14. 3. 74 - report that several iron mines had been opened by the company, as well as laying 52 miles of track - all at a cost of over £500, 00).
14th March North Roskear Mine, Camborne - 70" cylinder engine for sale, with a 36" stamping engine and 28" winding engine manufactured by Harvey & Co. The New Quay at Lelant progressing favourable with 60 men working on it. It is expected to lead to an influx of trade.
Penhale & Barton Mines - pumping engine set to work on Wednesday week ago under Mr. Cox, the Manager.
Wheal Seton to be closed on account of the expected overflow of water after the closure of North Roskear.
- 21st March Sale of plant and materials of Gwellyvellan Tin Stream Works, Camborne, of Lean & Co. comprising 240 rag frames, 52 cleaning frames, 3 dipper wheels and scoops, 6 kieves, 1 small waterwheel 5^l x 2½^l breast, etc. The strike at Wheal Bassett, consequent on the attempt of the agents to re-introduce the obnoxious 5-week month, continues with only the enginemmen being at work. 150-200 of the miners marched through Redruth on Monday morning.
To be let for 7 or 14 years the flour and grist mills at Millingworth, near St. Ervan Churchtown, 4 miles from Padstow.
The Restronquet Mine, near Truro, has been stopped.
- 28th March Crow Hill Mine, St. Stephens, 1 mile from Grampound Road Station, plant for sale: 14" rotary engine, 40^l x 7^l breast waterwheel, 36^l x 2½^l breast waterwheel, 12 heads stamps etc.

Sir John St. Aubyn M. P. has given notice that he will ask the President of Local Government Board to propose legislation to abolish the exemption from liability to local rates of tin and copper mines in England and Wales.

Penzance - A "sign of the times" is to be seen in our harbour where 5 or 6 colliers, side by side in the centre, are laid up because knocked mines want no coals.

28th March North Treskerby and South Towan mines are suspended, and in both cases engine houses have been built but engines not yet fitted.

North Roskear - offers for the machinery and materials only reached £5,000 when Capt. Josiah Thomas named the reserve figure of £7,000; at which price it was knocked down.

Blue Hills - debit on quarter of £257.

Trefoil Iron Mine - near Bodmin. First AGM declared a dividend of 5% and a balance of £1,500 carried forward. The Company was formed in early 1873 and 15,000 shares issued of £2 each. There is stamping power of 50 tons per day, and after re-arrangement a capacity of 100 tons is expected.

Wheal Peevor - 48 fm level is 6' - 8' wide and worth £30 per fm. The best part is 15 fms west of engine shaft, and a little deeper than the present bottom.

Great Wheal Vor United Mines - the present speculation was started 22 years ago, getting £20,000 from Old Wheal Vor Mine. In 1860 the yield was only 4 tons per month, so the deep machinery was drawn up and Wheal Metal was worked. The output rose to 70 tons per month and dividends of £88,000 have been made, and £22,000 dues paid to the Lords.

A. P. F. S.

In connection with the publication by the Society of "Dolcoath: Queen of Cornish Mines" by T. R. Harris (available from the secretary at £1, members 75p + 10p postage) we reproduce "The Unsuccessful Miner" published in 1860 by John Harris, a poet from Camborne who often chose industrial topics. Indeed, it is surprising the amount of local industrial verse produced in the last century. In future Newsletter we hope to print "The Mine", the story in verse of the trials and tribulations of the discovery and development of a Cornish mine. As John Harris worked for many years at Dolcoath much of the inspiration for his verse must have been derived from his everyday experiences in Cornish industry.

THE UNSUCCESSFUL MINER

Far underground a miner
Is labouring most severe,
Blasting the shining marble
In lonely cavern drear.
O how the perspiration
Is streaming from him there!
And like a wretch expiring
He panted in his lair.

A month was nearly ended,
And he severe had wrought
Day after day in darkness,
And it was all for nought.
The mineral-vein had faded,
And now all hope was fled;
To-morrow should be pay-day,
His children have no bread.

He stood within the office,
His hat was in his hand;
He spoke, and much he trembled
before that busy band:
"I've spent a month in labour,
A month of toil and pain,
A month of disappointment;
No tin was in the vein.

"And now I'm come to borrow
What surely should be fees,
Till I shall better prosper,
And pay you if you please.
O, think upon my household
All friendless and forlorn,
Weeping for bitter hunger
This golden summer morn."

He hung his head in silence,
A cloud pass'd o'er his brow,
As spake the ruddy captain,
"We've nothing for you now."
Within his soul an arrow
By those dread words was thrown;
His body bow'd and quiver'd,
His soul sent forth a groan.

He slowly turn'd and left them:
 With feeble feverish pace
 I saw him creeping homeward
 With tears upon his face:
 And as he hear'd his dwelling
 Upon the granite hill,
 He raised his eyes and utter'd,
 "It is my Father's will."

But all that day sad sorrow
 Into my heart did flow,
 And oft I seem'd to visit
 That poor man's shed of woe.
 I heard his children crying,
 I felt the father's pain,
 And still his mournful vision
 Is labouring through my brain.

The Society in co-operation with The Federation of Old Cornwall Societies plans to publish a Biography by T. R. Harris of Sir Goldsworthy Gurney, the famous Cornish Inventor, to commemorate the Centenary of his death, in Feb. 1875. As a foretaste of things to come we print below an extract from "The Wonders of Nature and Art" by J. Taylor published in London in 1832 to show one aspect of the work of this great but neglected Cornishman:

STEAM-CARRIAGE BY MR. GURNEY.

Mr. Goldsworthy Gurney, after a variety of experiments, during the last two years, has completed a Steam-Carriage on a new principle. As regards the safety of the present invention, it is stated, that, even from the bursting of the boiler, there is not the most distant chance of mischief to the passengers. The boiler is tubular, constructed upon philosophical principles, and upon a plan totally distinct from any thing previously in use. Instead of being, as in ordinary cases, a large vessel closed on all sides, with the exception of the valves and steam conductors, which a high pressure or accidental defect may burst, it is composed of a succession of welded iron pipes, perhaps forty in number, screwed together in the manner of the common gas-pipes, at given distances, extending in a direct line, and in a row, at equal distances from a small reservoir of water, to the distance of about a yard and a half, and then curving over in a semi-circle of about half a yard in diameter, returning in parallel lines to the pipes beneath, to a reservoir above, thus forming a sort of inverted horse-shoe. This horse-shoe of pipes, in fact, forms the boiler, and the space between is the furnace; the whole being inclosed with sheet-iron. The advantage of this arrangement is obvious; for, while more than a sufficient quantity of steam is generated for the purposes required, the only possible accident that could happen would be, the bursting of one of these barrels, and a temporary diminution of the steam-power of one-fortieth part. The effects of the accident could, of course, only be felt within its own inclosure; and the engineer could, in ten minutes, repair the injury, by extracting the wounded barrel, and plugging up the holes at each end; but the fact is that such are the proofs to which these barrels are subjected before they are used, by the application of a steam-pressure five hundred times more than can ever be required, that the accident trifling as it is, is scarcely possible.

A contemporary journal illustrated Mr. Gurney's invention by the following analogy:- "It will appear not a little singular that Mr. Gurney who was educated a medical man, has actually made the construction of the human body, and of animals in general, the model of his invention. His reservoirs of steam and water, or rather 'separators,' as they are called, are, as it were, the heart of his steam apparatus, the lower pipes of the boiler are the arteries, and the upper pipes the veins. The water, which is the substitute for blood, is first sent from the reservoirs into the pipes - the operation of fire soon produces steam, which ascends through the pipes to the upper part of the reservoir, carrying with it a portion of water into the separators, which of course descends to the lower part, and returns to fill the pipes which have been exhausted by the evaporation of the steam - the steam above pressing it down with an elastic force, so as to keep the arteries or pipes constantly full, and preserve a regular circulation. In the centre of the separators are perforated steam pipes, which ascend nearly to the tops, these tops being of course closed so as to prevent the escape of the steam. Through these pipes the steam descends with its customary force, and is conducted by one main pipe all along under the carriage to the end of the platform which is, in point of fact, the water tank, where it turns under till it reaches two large branch pipes which communicate with the cylinders, from which the pistons move and give motion to the machinery. The cranks of the axle are thus set in action, and the rotatory movement is given to the wheels. By the power thus engendered also a pump is worked, and which, by means of a flexible hose, pumps the water into the boiler, keeping the supply complete. The tank and furnace, it is calculated, will hold sufficient water and fuel for one hour's consumption, the former being sixty gallons."

The vehicle resembles the ordinary stage-coaches, but is rather larger and higher. Coke or charcoal are to form the fuel, by which means smoke will be avoided; the flues will be above the level of the seated passenger, and it is calculated that the motion of the carriage will always disperse the heated rarefied air from the flues.

The present carriage would carry six inside and fifteen outside passengers, independent of the guide, who is also the engineer. In front of the coach is a very capacious boot; while behind, that which assumes the appearance of a boot is the case for the boiler and the furnace. The length of the vehicle, from end to end, is fifteen feet, and, with the pole and pilot-wheels, twenty feet. The diameter of the hind wheels is five feet; of the front wheels three feet nine inches; and of the pilot-

wheels three feet. There is a treble perch, by which the machinery is supported, and beneath which two propellers, in going up a hill, may be set in motion, somewhat similar to the action of a horse's legs under similar circumstances. In descending a hill, there is a break fixed on the hind wheel to increase the friction; but independent of this, the guide has the power of lessening the force of the steam to any extent, by means of the lever to his right hand, which operates upon what is called the throttle valve, and by which he may stop the action of the steam altogether, and effect a counter vacuum in the cylinders. By this means also he regulates the rate of progress on the road, going at a pace of two miles or ten miles per hour, or even quicker if necessary. There is another lever, also, by which he can stop the vehicle instantaneously, and, in fact, in a moment reverse the motion of the wheels, so as to prevent accident, as is the practice with the paddles of steam-vessels. The guide, who sits in front, keeps the vehicle in its proper course, by means of the pilot-wheels acting upon the pole, like the handle of a garden-chair.

The weight of the carriage and its apparatus is estimated at $1\frac{1}{2}$ ton, and its wear and tear of the road, as compared with a carriage drawn by four horses, is as one to six. When the carriage is in progress the machinery is not heard, nor is there so much vibration as in an ordinary vehicle, from the superior solidity of the structure. The engine has a twelve-horse power, but may be increased to sixteen; while the actual power in use, except in ascending a hill, is but eight-horse.

The success of the present improved invention is stated to be decided; but the public will shortly have an opportunity of judging for themselves, as several experimental journeys are projected. If it should attain its anticipated perfection, the contrivance will indeed be a proud triumph of human ingenuity, which, aided by its economy, will doubtless recommend it to universal patronage. Mr. Gurney has already secured a patent for his invention; and he has our best wishes for his permanent success.

Notes on Cornish Slate and the Slate Mine at St. Neot.

How early and to what extent the true slates of Cornwall were first worked is difficult to determine, but records show that certainly by the 14th Century slate was in general use as a roofing material. At Lostwithiel in 1385, for example, a record is extant of 25,400 slates being bought "in the quarry" at a price of $3\frac{1}{4}$ d per thousand.

Cornish slate in very early times had more than a local use. At the inquisition held at Winchester Castle on Wednesday the morrow of St. Barnabus 1314¹ it was agreed that "the buildings covered with Cornwall stone called ESCLATE have been much damaged by storms and need repair to the value of £20".

Almost certainly the slate was taken to Southampton by sea and thence carried overland to Winchester, and it is clear that since Cornish slate was carried to so distant a place at the beginning of the 14th Century, its excellence and general quality were widely known.

Of all the Cornish quarries, Delabole justly takes pride of place. No one knows when this great work originated, but in 1602, Carew, in his survey of Cornwall, described Delabole slate as "in substance thin, in colour fair, weight light, in lasting strong."

In the distant past, the slate quarrying industry was not confined to North Cornwall however. The Roseland Quarry in Menheniot for example, must have been capable of large scale production. The St. Neot quarries at Carnglaze, active until comparatively recently, are of particular interest, because unlike any other commercial venture in slate production, apart from Wales, the slate was mined in a series of large underground chambers.

At this rather gorge-like point in the beautiful valley of the Loveny River, it seems probable that quarrying first commenced on benches of slate which had been naturally exposed on the precipitous river banks.

From such early beginnings, perhaps 250 or more years ago, developed a traditional opencast quarry with the usual horse-shoe shaped profile on the East bank of the Loveny. The original quarry floor, appears to have been only a little above river level, and it is no doubt significant, that the road which was cut in 1844 to connect St. Neot village with the A38 at Twowatersfoot, actually runs over the top of very old slate dumps immediately below Carnglaze by the side of the river.

In his Parochial History of St. Neot published in 1833, Mitchell says, "There is a slate quarry near the village, now worked on a small scale, producing roofing and flooring stones of the best kinds." Again, in 1856, John Allen in his History of the Borough of Liskeard states "The slate quarries of St. Neot are very ancient, and afford good flooring and roofing materials."

As the quarry progressed into the hillside the old men were confronted with many problems. Their main objective being high quality roofing slate, a great deal of material which would be valued today, was discarded as waste. Added to this, they had to dispose of large quantities of earth, rubble, and debris of all kinds, which overlay the slate measures. All had to be cleared away by the primitive means available at the time, while dumping ground was very restricted in this narrow, enclosed valley.

The building of a retaining wall along the East bank of the Loveny River helped to confine and contain the dumps, and at some stage, and unfortunately no-one knows when, a decision was taken to mine the slate underground. This decision effected a cost saving by reducing the number of man-hours spent on the non-productive work of stripping the overburden, and also reduced the volume of waste material which had to be disposed of.

Secondly, the old men discovered for themselves, that slate usually improves in quality in depth, and so by driving under the hill, they were able to gain access to the deeper slate beds far more quickly.

Thirdly, we must remember that there was a strong local mining tradition in this vicinity. The famous old Wheal Mary for example, the ore from which at one time used to be taken to Moorswater, and sent down the Liskeard-Looe canal, was only half a mile away. It would have been a very easy transition for some of the old miners, using many of the tools they were already familiar with, to adapt themselves to the winning of slate underground.

Finally, since this area has about twice the national rainfall average, it was no doubt an important consideration from the employers point of view that production could continue without interruption, despite the elements, once the men were underground.

The first developers of the quarry used pack-horse trains to transport the dressed slate from the quarry, and two main routes were used. The first travelled by way of Steppy Lane to Ley village, thence to Bodithiel Bridge over the Fowey at Trago Mills (originally a famous explosive-powder factory) and crossing the old Liskeard-Lostwithiel turnpike, made its way to St. Winnow quay, whence the slate was exported in sailing ships. The second pack-horse train route is said to have used a very ancient trackway which forded the Fowey river above Doublebois bridge. Thence, climbing up over Dennick's Bal (a place name now lost) made its way to the coast at Looe and Polperro. On their return journeys the pack-horse trains are said to have brought back lime for the farmers from the coastal kilns. It has also been stated that under the lime frequently lay even more potent commodities originating in France, which were distributed by this regular and little suspect transport system.

With the construction of Brunel's Bridge at Saltash in 1859, the slate was taken by horse and cart to Doublebois station, some two miles away, and dispatched by goods train. Many of the roofs of Plymouth in the period from 1860 to 1900 originated from the slate caverns at Carnglaze.

The actual size of these remarkable caverns may never be known. As the old men quarried away, so the piles of waste were heaped behind them both inside the caves, and outside, where their dumping space was sandwiched in between the retaining wall along the river, and the steep natural slope of the hillside. As the level of these dumps rose, it apparently became necessary to raise the entrance level to the caves themselves. It is most interesting to note that the water level in the caves, which never varies, is 50 feet or more below the level of the present entrance. This water must certainly find its escape by flowing out under the vast heaps of rubble which now mask the original and much lower old entrance.

An eye witness who visited the quarry frequently in the late 1890's records the scene at that time:- "At the main entrance to the quarry worked a party of men splitting and shaping roofing slate. They sat on three-legged stools, and used mallets (betels) and curious chisels with flat heads, and wide triangular blades. The projecting rock overhead gave the men a dry and rather snug work place. From where they sat one could look into the caverns and catch sight of candles flickering at various points where groups of three men, one to hold the drill and two to strike, were boring holes to take the powder preparatory to blasting. The senior of these groups consisted of Irwin and Edwin Lobb (my Maternal Grandfather) and a third man named Billy Keast. At that distance, and in the candlelight, they were only half visible, and as they struck, they maintained the rhythm, with sepulchral grunts of "Aah - Ha" which I used to find quite unnerving."

Somewhere about 1903 all underground work stopped, the main factor being the cost of hauling the stone to the railway station and the inability to compete with quarries better served in this regard.

In 1937 the dumps inside the caves were to some extent turned over, some thousands of tons of building stone were extracted although no fresh quarrying took place. The caverns next fulfilled an important role during the second world war, when they were used as a major depot for safe-keeping the Royal Navy's rum stocks. One curious side effect of this was that the formerly numerous colonies of bats deserted the cave, being unable to tolerate the fumes given off by the rum.

Apart from these intrusions the gloomy caverns which once echoed and re-echoed to the sound of hammer and drill, and reverberated to the blast of hard won rock, lay silent and solitary until 1973. In this year the Public were admitted to the caves for the first time. I suppose their isolation, their age, and the privacy of the entrance, is mainly responsible for the almost indignant remarks of many Cornish people who, on seeing the caverns for the first time, say with amazement, "But I have been past Carnglaze many times, and had no idea such a fantastic place existed."

E. A. C. Pascoe.

Correspondence and Queries

The following request for help is from Mr. A. Fairclough, 'Orwell', Guineaport, Wadebridge; PL27 7BN

"I have had published several railway pictorial volumes on Cornwall and Devon, through Mr. D. Bradford Barton at Truro. I am at present finalising a volume on the Mineral Lines of the West Country, i. e. both the old industrial lines and the ex SR & GWR freight lines.

I have a good number of the old Cornish lines covered, but wonder if you are at all able to assist me with any photographs of locos and/or wagons around the Dolcoath mine area?

I mention this after reading the short item of news in the W. M. N. of the proposed book by Mr. Harris on the Dolcoath Mine. Now I would certainly not wish to interfere with his material, but as I imagine it will be essentially mining, I thought you might have or know of a 'lead' on my interest.

Incidentally if either yourself or Mr. Harris know of any other useful old railway photographs for possible use, I should be delighted to know. The Ruthern Bridge freight line (closed as late as 1933) still eludes me for a loco photograph.

I would of course take the greatest care of any print loaned, and any processing I have done, is undertaken by Mr. Woolf of Newquay. I do hope you will not mind my troubling you, and any assistance you may be able to offer, will be much appreciated."

From Mr. C. Carruthers, The Vicarage, St. Erme, Nr. Truro, a request for any information relating to Calennick Smelting Works, nr Truro.

From Mr. B. Sullivan of 34 Queensway, Hayle: Any information relating to the date and origin of gold nugget-style tiepins often worn by miners. Particularly whether these originated from the goldfields of Australia, California or South Africa and whether the nuggets were real or moulded.

Mr. C. Carter of "Boleppa", Sancreed, Nr. Penzance would like information of any Cornish engines, ships etc. which were broken up for scrap at Hayle. Also photographs of any trains being worked in the Roskear Spur, Crofty siding or Tresavean Incline.

Mr. S. Howe of Sowanna Cottage, Cury Churchtown, Cury, Nr. Helston, seeks any information relating to Winnianton Mill in the parish of Gunwalloe. Please send it to the Hon. Sec. in the first instance.

In connection with a note in the August 1973 newsletter on the conversion of Murdock's house in Redruth to natural gas, we have received the following from Mr. R. Penballurick.

"Murdock undoubtedly was the first really successful exploiter of coal gas in this country, but he was not the first to light premises with coal gas.

Production of an inflammable gas from coal is referred to in the seventeenth century (eg. by Thomas Shirley in 1667). The first to successfully distill coal gas was Dr. Stephen Hales in 1726 and patents for the production of gas was given as early as 1742 and 1746.

In 1760 George Dixon distilled gas and lit a room in his house at Cockfield in County Durham. In 1765 Spedding Carlisle, Lord Lonsdale's Whitehaven Colliery manager, lit his office and offered to use the gas to light the streets of Whitehaven - this was probably gas naturally seeping from his colliery and not artificially distilled. About this date also (i. e. 1765) a Monsieur Jars had the idea of piping gas from his colliery near Lyons, but an explosion ruined his scheme.

The most famous continental experimenter was Jan Pieter Minckelers who distilled gas and lit his lecture room at Louvain University in 1784. The first Britain, probably, to fully appreciate the possibilities of gas lighting was Archibald Cochrane (1749-1831), ninth Earl of Dundonald, one of the leading lights (to use an appropriate phrase) of the developing chemical industry. In 1781 he was granted a patent for producing tar and the following year formed the British Tar Company. It was during these experiments that he burned flares of coal gas at his Culross Tar Works. By 1787 he is said to have lit Culross Abbey by gaslight on several occasions, largely for the amusement of his friends, but he is known to have discussed the possibility of commercial lighting with Boulton and Watt (Murdock's employers) and it seems inconceivable that Murdock did not know - as he claimed - of the experiments of Cochrane, or of those of Richard Watson, Bishop of Llandaff, with "inflammable vapours". What prompted Murdock to seriously study the possibilities of gas lighting, was probably a letter from John Boulton dated 15th June, 1790.

Champion (a Bristol octogenarian) describing his own trials in which he had "from some inflammable matter in Pitt Coal made a light for light-house", and his desire that a young person should "undertake the Conducting of this Concern".

Books

The following review by F. Bice Michell, Member of Council, is reprinted, with permission, from the Dec. 73/Jan. 74 issue of The Mining Engineer.

**CORNWALL'S MINES AND MINERS - NINETEENTH CENTURY STUDIES BY
GEORGE HENWOOD
Edited by Roger Burt**

Truro, D. Bradford Barton, 1972. 235pp. £315.

These pen sketches of the mines and miners in the middle of the nineteenth century were first published at the Mining Journal, between June 1857 and May 1859, under the titles "Cornish Mine Photographs" and "Cornish Mining Maxims".

As the editor says in his excellent introduction, Henwood was very closely connected with the mining scene since he was correspondent for the Mining Journal. This involved returning daily intelligence on the conditions of the major mines as a basis for the daily transactions of the London and provincial mining markets, and the sketches were intended as a light relief for an otherwise formal technical weekly. It must be remembered that his interests were not entirely academic since he had worked as a mine captain and had been manager of the Marquis of Breadalbane's mining properties in Scotland. The cameos, although often very interesting and sometimes amusing, are not to everybody's taste, and one tires easily of the style which, by today's standard, is excessively verbose and flamboyant. At the time, however, these sketches were very popular and, as the editor states, without doubt they still "represent one of the most perceptive and colourful commentaries on life in the mining communities ever to be compiled".

Henwood's "portraits" may lack the technical content of other writers such as Pryce, De la Beche and Hunt, but they provide a wealth of descriptive detail as well as an insight into life at the middle of the nineteenth century. The collection of over 60 pen sketches deals with almost every non-technical aspect of mining at the time as well as the life of the miner, his customs and the mining towns and villages - in fact everything even remotely connected with the industry.

In the description of a visit to a mine, for example, Henwood misses nothing, from the countess woman to the "Captain" himself, whilst he described the surface plant and the visit underground in great detail - mentioning the change house facilities which, although probably crude by present day standard, certainly were a credit to the industry at the time. Amongst the mines described are Great Wheal Vor with its one hundred inch engine, the open pit at Carclaze, originally wrought for tin but in Henwood's time producing china clay, and Fowey Consols, to mention only a few.

The portraits of the Purser and Doctor are also excellent but, strangely enough, the author does not include the "Engineer" who was usually employed in a part-time advisory capacity at more than one mine. Not only did he advise about the machinery but usually also designed the pumping and winding engines for manufacture at local foundries. Like the Purser these men were never given the title "Cap'n", and, in fact, often resented being so called.

A chapter is devoted to the Wendron district where streaming of alluvial deposits produced much tin over a long period. Duchy records in fact shown that this, in aggregate, amounted to £3 million on which duty was paid whilst probably a third more might be added for the tin on which duty was never paid.

Henwood was not afraid of criticising injustices or indeed in speaking out in a forcible manner against such practices as the employment of small children underground. He mentions children of ten and younger being regularly employed in the Mines of Gwennap, Redruth and Illogan. "Our blood boils with indignation and our heart bleeds with sympathy" he says; "they are as surely murdered body and soul... as the poor innocents who have been bayoneted by the cruel Hindoo." Apparently, after working on the surface, boys regularly went underground at fourteen, and to this he saw no objection at this age, "their persons being sufficiently matured, but we do and will protest against children being employed to be sent to great depths at an earlier age". Henwood also speaks out about the unscrupulous "Bal sellers" who discredit the industry by working on the credence of people intoxicated by profit returned by good mines.

The sketches of life in the mining communities are equally as detailed and colourful: the feast days like those of St Just and Camborne (which are still holidays locally); the old Market day at Redruth and its Whit-Monday fair; the influence of the Methodist chapel and the religious service held in Gwennap Pit, a large amphitheatre constructed out of an old open pit mining operation by miners; as well as the plight of the miner and his family when a mine failed. Henwood also takes the reader to the top of Carn Brea and Carn Marth hills to see the panoramic scenes of mining activity ranging from Wheal Jane in the East, to Dolcoath in the West, not to mention the estates of those who gained much of their wealth from mining. In fact, it is claimed that one could see "upwards of a hundred mines" from Carn Brea Hill.

Towards the end of the book the essays tend to digress from the main theme and the reader is inclined to lose interest. By and large, however, the "portraits" and essays are worth the effort of wading through Henwood's verbosity because of his remarkable perception and the insight he gives of life at the time.

F. BICE MICHELL

F. Bice Michell, B. Sc., A. C. S. M., C. Eng., F. I. M. M.,
Fellow, is Vice-Principal, Camborne School of Mines.

"Some notes on the Tangye Family" by J. Francis Parker published by the author, 1972, 26 pp + large family tree. Mr. Parker's address is: Netherton Fields, Emley Castle, Pershore, Worcs. WR10 3JE. Price 50p.

The following note is from the Newcomen Society's Bulletin of Dec 173
Some Notes on the Tangye Family by J. Francis Parker 26 pp. III. Pub. privately.

The first record of a Tangye in Cornwall appears in the Redruth Register of 1707 when Grace Ernest married Philip Tangye of the Breton family of Tanneguy-du-Chatel.

Philip's great-grandson had 6 sons and 4 daughters. Five of the sons after picking up engineering skill and experience in various ways eventually came together in the 1850s in Birmingham as partners in Tangye Brothers. James and Joseph were fine craftsmen; Richard was the business man of the family. Their greatest early achievement was to make and supply the hydraulic jacks that persuaded the reluctant S. S. Great Eastern to move down her launching ways. They also developed the famous Weston differential pulley block, invented the snatch block, and patented improvements to various hydraulic and other appliances and machines. In 1872 the partnership dissolved, but the firm continued and expanded.

In 1873 Joseph Tangye bought Tickenhill in Bewdley. It was too big as a house, but to make room for a workshop he removed some of the internal walls, hence the large room in which his daughter Alice (who became a Newcomen Member) and her husband James Frederick Parker (formerly Member of Council) assembled the remarkable collection of by-gones now housed in Hartlebury Castle (see Trans. N.S. XLII, 163). This little book by their son J. Francis Parker (Member), which includes an elaborate family tree of the Tangyes, is both a contribution to engineering history and an act of filial piety.

S. B. H.

"The Atmospheric Railways" by Howard Clayton - published by the author, 34 Wassage Road, Lichfield, £1.20 including postage - not Cornwall but very interesting including Brunel's S. Devon atmospheric railway.

The following are forthcoming events organised by the Plymouth Mineral & Mining Club (Hon. Sec. Mrs. C. Hicks, 25 Budshead Road, St. Budeaux, Plymouth).

12th March 1974

"Some aspects of pollution in relation to mining and quarrying in Cornwall and West Devon, past and present" by Barry Milford, Cornwall River Authority, Scott Lecture Theatre, 7.0 p.m.

23rd March 1974

A fuel saving excursion by rail and on foot to the Gunnislake mining area. Leaders O. A. Baker and K. Roberts. Meet Plymouth Railway Station 9.0 a.m.

9th April 1974

"The unacknowledged Debt - Some thoughts on the great exodus of miners from the Tamar Valley to foreign mining fields" by Joan and Terry Doyle, Scott Lecture Theatre. 7.0 p.m.

Especially after our visit in September last to Copperhouse the following short article by T. R. Harris, in the Western Morning News on 7th January 1974 will be of interest.

JOSEPH CARNE - CORNISHMAN OF QUIET INFLUENCE

The report of the loss of the schooner Joseph Carne of Hayle, reproduced in "100 Years Ago" ("The Western Morning News," December 6) recalls the story of the Cornish worthy who gave his name to the vessel.

Son of William and Anna Carne, Joseph was born on April 17, 1782. After a period at the Wesleyan School, near Bristol, he received his business training in the bank of Batten, Carne and Boase, at Penzance.

In 1807 he was appointed manager of the smelting works of the Cornish Copper Company at Hayle. During his period as manager the rivalry between the Copper Company and Messrs. Harvey and Co., of Hayle Foundry intensified.

WICKED

The story of this has been told from the point of view of the Foundry Company in "Harveys of Hayle," where reference is made to "the wicked Joseph Carne". In fact Joseph was the reverse of "wicked". A man of deep piety, he was a prominent Wesleyan Methodist and trustee of several chapels in West Cornwall.

A friend of Southey and a Fellow of the Royal Society, he was a founder member of the Royal Geological Society of Cornwall, of which he became treasurer and trustee. He contributed papers to the society and made donations to the mineral cabinet, library and museum. He was also early associated with the Royal Cornwall Polytechnic Society, of which he became a vice-president.

A member of the Penzance Subscription News Rooms, he became a founder member of the Penzance Library, which, with the title of president, he almost entirely managed for many years.

On his death a replica of his portrait was made by Richard Pentreath from the original in the possession of his daughters, and presented to the library, where it still hangs.

Carne was also an honorary member of the Cambridge Philosophical Society and entertained several eminent scientists at his home.

In 1819 the Cornish Copper Company gave up copper smelting and converted their premises into a foundry and engine works. At this time Carne resigned his position as

manager, but retained his connection with the company as a partner, the name of the firm becoming Sandys, Carne and Vivian.

NUCLEUS

While at Copperhouse Carne, besides being manager of the copper works, was pursuer of several mines and obtained first-hand information on which he based subsequent papers. He also procured specimens which formed the nucleus of his remarkable collection of minerals now in the Geological Society's museum at Penzance.

On relinquishing the management of the works at Copperhouse Carne returned to Penzance and became a partner in his father's bank, which now became Batten, Carne and Carne.

In 1825 he has Treasurer of the Hayle Causeway and Turnpike Trust. A hoard of ancient coins was discovered while the road was being built and he had them examined and prepared a memoir describing them.

HONOUR

He became one of the first magistrates of Penzance, and in 1837 was picked as Sheriff, but declined the honour. In 1838 Davies Gilbert (Giddy), after eulogising William Carne, continued "Of his son, Mr. Joseph Carne, it would not be an easy task to speak in easy terms sufficiently laudatory...."

Joseph's association with Methodism is commented on by Dr. Rigg, writing of the Penzance Society and congregation of the eighteen forties. He recalled that "... the chief family . . . was that of Mr. Joseph Carne, a very distinguished man" who as a youth had known Wesley as his father's friend. Also that Carne had risen "to the level of the neighbouring gentry by his high qualities. . . he was, in short, the most influential man in West Cornwall, and his quiet dignity helped to give him universally recognised superiority . . . once a month the circuit ministers dined with him . . . there he presided with modest dignity and gently led the conversation as a Christian gentleman of wide knowledge might be expected to do."

Benjamin Browne, writing of the same period, recalled people who were of help to him, especially "The calm, quiet, calculating, scientific, godly Joseph Carne of Penzance, whose gentle spirit and sprightly intelligence drew to him the very flower of society within and without religious circles . . ."

Joseph Carne died at Penzance, on October 12, 1858, "after a long and painful illness borne with Christian fortitude." An obituary notice stated that none of the great fiscal changes effecting Cornish mining were made without his "active and most useful interference" whilst little of importance in the business of Penzance transpired without his "judicious advice" being freely given.

As a banker and merchant he was unequalled in his foresight, and as a magistrate for clearness of perception and soundness of judgment.

Another notice stated "He was a friend to all good institutions."

By T. R. HARRIS

The following note on a recent acquisition at Wendron Forge is also from the Western Morning News, of 15th January 1974:

100-YEAR-OLD STONE-BREAKER BACK TO WORK

A 12 Horse-Power portable steam engine, purchased in 1874 to operate rail ballast breaking machinery was brought to a new home at Wendron Forge Museum, near Helston, yesterday. Next year it will be working again.

The engine was acquired 100 years ago to break rail ballast stones at a Menheniott quarry which opened after a train became derailed there in June, 1873. It was decided to strengthen the permanent way with stronger rails and more ballast, following the accident.

Says Mr. Peter Young, owner of Wendron Forge: "The engine built by Marshalls of Gainsborough, was delivered to the Cornish Railway Company in March, 1874, sometime after the Great Western Railway Company took over the Cornish company.

"The engine was moved to Bathampton, where, for many years, it operated timber-sawing machinery. It was still working well into the 1960's.

PRESERVATIONIST

It was acquired by an engine preservationist at Weston-super-Mare but was later offered to Mr. Young and terms were eventually agreed.

It was brought from Weston-super-Mare to Wendron Forge by road.

"It is in wonderful condition in view of its age," says Mr. Young.

"It has to be stripped down completely, repaired as required, and rebuilt. Consequently it is not intended to put the engine on public display until sometime next year, when it will be driving an old generator providing electric power for all our other antique machines."