

THE REGULATION OF QUARRYING IN THE FOREST OF DEAN IN 1841

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Introduction

The quarrying of stone began in prehistoric times. Later, stone was commonly used for walling and buildings in some regions. By the middle ages, quality stone was a nationally important commodity for high status buildings. Stone was also quarried and dressed to make millstones for processing cereals, and grindstones for honing edge tools and weapons. Calcareous stone was dug and burnt to produce lime for mortar, and as a soil conditioner. In later centuries, the quarrying of local building stones increased until displaced by cheaper brick and tile. The use of superior quality stone for prestigious buildings continues to the present time.

Geological horizons quarried in the Forest of Dean included: the Old Red Sandstone, the Carboniferous Limestone, the Drybrook Sandstone and the Pennant Sandstone. Of these, the Pennant Sandstone was the most exploited in recent centuries. A history of quarrying in Dean has been written by Cyril Hart (1971) and some well illustrated accounts of individual quarries are to be found in the Dean Railway volumes by Ian Pope, et al (1983-88), and in his Bixslade paper (Pope,1998). David Mullin, (1988 and 1990) has recorded numerous millstone quarries in and around Dean. Views of working quarries feature in the publications of United Stone Firms Ltd., 1913-14.

In most areas the granting of permission to quarry stone was a simple affair between landowner and prospective quarryman. Arrangements were usually governed by a lease and a royalty was paid on tonnage. In the Forest of Dean the basis was different; stone was quarried by customary right almost anywhere, subject to certain qualifications, customs and payments. With the exception of the Isle of Purbeck (1), these rights appear to have had no parallel elsewhere.

This paper concerns the regulation and eventual loss of the quarrying rights in the Forest of Dean.

The Crown and the free miners of Dean Forest

Dean was a royal forest that for centuries had been subject to the customs and privileges of the free miners who claimed exclusive rights to the mining of iron-ore, coal and the quarrying of stone. By the 1820s, the complexities of free mining, and the competing claims of outsiders, and other matters, caused the Crown to think about regulation. This resulted in *The Dean Forest Commission Act, 1831, 1 & 2 Will. 4, cap 12*.

The Act appointed commissioners and required that they report to the Treasury within two years on: the legal boundary of the Forest, encroachments, the existence, origins and particulars of the rights claimed by people born within the Hundred of St. Briavels calling themselves free miners, the Mine Law Court, the Court of St. Briavels and its prison, and the extra parochial state of the forest. The commissioners were Robert Gordon, Ebenezer Ludlow, Charles Bathurst, Edward Machen and Henry Clifford. Their powers included examining witnesses under oath. These seemingly small matters concerning a tiny area of rural England were duly investigated with legal precision. So deeply was the detail examined and the facts established, (a process unknown to modern government), that two time

extensions were granted by Parliament before the five reports were completed in 1835. The Second, Fourth and Fifth Reports have relevance to the quarrying of stone.

The Second Report contained a detailed, written perambulation of the boundary of the Forest; in 1834, the Commissioners placed 241 numbered stones to mark its 56 mile long course on the ground. Thus the royal forest was legally delineated and uncertainty removed. The Forest and some of the contiguous parishes comprised the Hundred of St. Briavels. This was the area in which the free mining customs and rights were claimed. Defining the forest boundary also enabled the Commissioners to identify encroachments made in the forest. These were surveyed and scheduled in great detail (2).

The Fourth Report dealt extensively with the historical evidence for: free mining, the qualifications needed to become a free miner, the granting and holding of gales (3) and with the working of mines and quarries. Of interest is *Appendix No. 1*. It contains 55 folio pages of the minutes of evidence received from free miners, local lawyers, industrialists and the crown officers of the time. Much of it is reprinted by Cyril Hart (1953, pp 265-313). The Report's *Appendix No. 2* was a schedule of all the persons then claiming to be free miners, to the number of 1,080. Of this number 839 were subsequently registered in 1841.

The Report also examined the holding and working of coal and iron gales by foreigners including Edward Protheroe, David Mushet, the Crawshays and others (4). Concerning protection for mines against possible interference from neighbouring gales, and the problems of cutting off by narrow headings, and the need for larger gales, the Commissioners commented:

“...Finding that there was no prospect of any satisfactory arrangement, and having no plan of the mines on which we could obtain the opinion of scientific men, we suggested the propriety of having a regular mineral survey prepared, which has been done by Mr. Sopwith and deposited in the office of woods and forests...” (5)

Aged 30 years, Thomas Sopwith, of Newcastle upon Tyne, was a surveyor with a growing reputation. On the recommendation of John Buddle (*infra*) in 1833, the Crown offered Sopwith the task of surveying the Dean mineral field. Some details of the survey work and its challenges are supplied by Harry Paar (1988) and Robert Sopwith (1994).

The Fourth Report concluded:

”... that under an act of parliament the desired objects [i.e. an equitable regulation of the mines and quarries] may be effected by the means of commissioners acquainted with mineral property, to be appointed as well by and on the part of the free miners as the crown; and considering the present state and condition of the mines and the population and the extreme difficulty, if not absolute impossibility, of making any satisfactory regulation, we do not hesitate to submit our humble recommendations that such a course be adopted”

Quarries

With the complex affairs of free mining covered by the Fourth Report, the Commissioners examined claims relating to quarries. That these matters were left until the final report may reflect their lower economic importance relative to iron-ore and coal. The Fifth Report investigated:

“...the particulars of the rights and particulars of persons claiming to be owners of, or to have right to open or work quarries, and the origin, whether by grant, custom, or otherwise of such several rights and interests... With regard to quarries it appears that persons born within the Hundred of St Briavels claim the right of opening stone quarries and digging stone in the waste lands of the forest on payment of a fee to the Gaveller (6) of 3s., and an annual payment of 3s 4d.”

The report cites documents, dating from the reign of James I, concerning the digging of grindstone and, later, the payment of 10 groats (3s. 4d.) to the crown, or its lessees, by each person digging stone. It also deals in some length with the lord of the manor of Blakeney who claimed a right to let quarries in the forest bailiwick of Blakeney. (Later, this claim was tested in court and not upheld).

Minutes of evidence pertaining to quarries included:

Joseph Williams of Ruerdean (*sic*), being sworn, deposed:

“ I am 58. I am a quarryman born within the hundred, and a free forester. My father was a free miner: I have taken several lengths myself. I consider that every miner who works a quarry must pay 3s. 4d. a year and that such payment entitles him to the privilege. I put in a receipt given to my father and his brother in 1766, they paid 3s. 4d., (which was the price until about 25 years ago when it was raised), for this privilege, and a receipt for myself and my two brothers.

I do not know who is beneficially entitled to the payments. I now pay a pound for all I have, instead of 3s. 4d. for each. We had the privilege of getting stone anywhere in the waste ground, anywhere in the hundred of St. Briavels, on paying 3s. 4d.

I consider a stone quarry to be 20 yards frontage. We are never interrupted in going as far as we mind, if nobody fancied a spot next to us, and if he did, he was entitled to have a gale within 20 yards; each man may have a breadth of 20 yards...”

William Yarworth of Clower Hall in the Forest [Clearwell], being sworn, deposed:

I am a quarryman. I consider, as I have always heard from antients (*sic*), that a freeman is a man born within the hundred, and of free parents, and I think they require to work a year and a day, either in a quarry or mine, to entitle them to a gale. I know of no difference between a free miner and a free quarryman; I do not think working underground is a qualification...

We always considered that as soon as we paid to the Gaveller, the quarry was our own. Since I have been paying gales, I pay 3s. 4d. a year. The first gale I had about 36 years ago, I paid 1s. for galing, the Gaveller then told me, that if I had come on the next day I should have had to pay 2s. If I was to have 50 quarries galed I must pay 50 entrances.

I have bought several gales, I pay 30s. for the whole; I have more than at 3s. 4d. each would amount to 30s. I think I have 20... If a man left three sons, and they were partners, the Gaveller would make each pay; but if only one son had it, then only one rent...”

James Court, being sworn, deposed:

“I have been Deputy Gaveller for the Crown of stone quarries for the last 12 years. The fee I receive on transferring a gale is 3s. Upon a transfer I make no enquiries. My father received for Lord Berkeley; I succeeded him, and received his books &c. When a man wants a stone

quarry galed, he comes to me, and I consider him entitled to a gale. I ascertain that he is a free miner. When a miner sells to a foreigner, I put the foreigner's name on the book. I never make use of a trustee on a transfer. I produce the gale book in which are instances of quarries being transferred to foreigners...

When a gale is made, 20 yards is set out at the time, forward on the hill. If nobody else comes into the neighbouring ground, I should not interfere if they worked beyond their 20 yards. I have heard from old men that 60 yards was the extent; I do not adopt this plan myself. In making a gale a-head, I should try to ascertain from the man at work at the next gale where it should be placed so as not to inconvenience him...

Applications have been made to gale new works, but none has been galed in my time. I receive the gale over all the King's Forest, except Blakeney bailiwick... I believe there were never any gales for stone quarries in private lands..."

Mr Fryer, solicitor of Coleford, put in a statement on behalf of 13 quarrymen. It describes how things worked on the ground:

"4 ...the custom as to working quarries is generally as follows: In the commencement of a quarry in a hill which approaches a circular form, the free miner takes a gale at its foot, and excavates in a right line towards the centre or most productive part of the hill, as far as the situation will allow. The free miner who takes the first gale has the right to determine the direction of his work to the centre. Any free miner who takes a gale adjoining the first, must carry his work forward in a direction parallel with the first, and so in like manner must all successive gales be worked in right lines, parallel with the first, and with each other.

Where the hill approaches a square, these parallel lines proceed at right angles from that side of the hill where the first work is commenced. Each free miner is precluded from making excavations laterally beyond the lines bounding his quarry on each side, but he may depart from the original horizontal line to suit the dip of the stone. The application of these rules is termed squaring the hill. A gale may be taken on the directly opposite side of the hill, in which case the two opposite works would proceed until they met. A gale may not be taken otherwise ahead of a former one; but it may be taken beneath a former one, though in the same line, if the former is high up in the hill...

5. That an entry of such gale should be written in the Gaveller's book, on payment of a reasonable fee to him for his attendance, and signed by him; and thereupon the free miner to whom the gale has been delivered becomes entitled to hold the said quarry to him and his heirs, and work the same, subject to a gale or rent of 3s. 4d. for the same to His Majesty on the feast of St. Michael the Archangel yearly..."

Although not convinced that a good title could be made for the rights of quarrying, the commissioners opined and recommended:

"...we think it would not be right, after the long acquiescence in the usage, wholly to withdraw from those parties who now occupy the quarries, or those who, according to their interpretation of the right, are now entitled to claim a gale, the advantages to be derived from the present system during their several lives, unless by giving them some compensation for their present interest.

We would recommend, therefore, as the best plan, that leases should be offered to all such parties born within the Hundred of St Briavels as shall apply for them within a certain specified time, on liberal and easy terms, or that an equivalent in money ... should be given in consideration of a surrender to the crown of the right claimed. And that all other persons occupying stone quarries for the future should be placed upon the footing of tenants to the crown at fair conventional rents”.

The findings of the 1831 Commission were published in five Reports of 1835. They prompted the crown to prepare several parliamentary acts for the better management of the Forest of Dean. For mines and quarries the most important was: *An Act for regulating the opening and working of Mines and Quarries in the Forest of Dean and Hundred of St. Briavels in the County of Gloucester. 1 & 2 Vict. Cap. 43.* It was passed in 1838. The Act is commonly called *The Dean Forest Mines Act, 1838.*

The Dean Forest Mines Act, 1838

Most of the 35 page Act concerns coal and iron-ore which, although intertwined with quarries, are beyond the remit of this paper. Those aspects have been studied and published elsewhere: (Sopwith, T., 1841; Nicholls, H.G., 1858; Wood, J.G., 1878; Hart, C.E., 1953 and 1971; Fisher, C.,1981).

The Act appointed three commissioners: Thomas Sopwith, nominated by the crown, John Probyn, nominated by the free miners (7), and John Buddle (8) as arbitrator. They were styled *The Dean Forest Mining Commissioners.* Their task was to carry the purposes of the Act into execution, namely awarding ownership of the mines and quarries together with their regulation. The Act defined free miners, required their registration by the Gaveller, confirmed that coal, iron mine and quarry gales, once granted, became *real estate*; ie the exclusive right to win the mineral was owned in *fee simple* and, as such, could be leased, sold and bequeathed to, and by, third parties. The Act also empowered the Commissioners of Woods & Forests to grant leases for stone quarries, and for the digging of sand and clay, to any applicant whether free miners or not.

Rights to mines and quarries

Section XIV enacted:”That all male persons born of hereafter to be born and abiding within the Hundred of *St. Briavels*, of the Age of Twenty-One Years and upwards, who shall have worked a Year and a Day in a Coal or Iron Mine within the Hundred of *St. Briavels*, shall be deemed and taken to be Free Miners for the Purposes of this Act.”

Section XV: “That all male persons born or hereafter to be born and abiding within the Hundred of *St. Briavels*, of the Age of Twenty-One Years and upwards, who shall have worked a Year and a Day in a Stone Quarry within the said Forest, shall for the Purposes of this Act, so far as relates to having Gales or Leases of Stone Quarries within the open lands of the said Forest, but not otherwise, be taken for Free Miners”

Section XXIII (in part): “That such Free Miners, duly registered...shall have the exclusive Right of having Gales or Works granted to them by Her Majesty’s Officer herein called the Gaveller, or Deputy Gaveller, to open Mines within the said Hundred, and to have Gales or Leases of Quarries within the said Forest as hereinafter mentioned;...Provided always, that no Person registered as a Free Miner by reason of his having worked a Year and a Day in a Quarry shall have the Right to have any Gale made to him of any Mine; but that nothing herein contained shall prevent such Free Miners as shall be registered by reason of having

worked a Year and a Day in a Mine from having Leases of Quarries granted to them under the Authority herein-after contained.”

Section XXVII included amongst much else: that any free miner still alive and holding a quarry awarded to him under the Act, would continue at the same rent of 3s. 4d. Otherwise, future rents would be determined by the Deputy Gaveller.

To summarise: A ‘full’ free miner would enjoy the grant of mine gales in the Hundred and leases of quarries within the Forest; a free miner qualified only by quarrying, would enjoy quarry gales awarded to them for 21 years, and leases of quarries within the Forest. With these matters laid down, the most important section of the Act followed next:

Section XXIV: “And be it enacted, that the commissioners hereby appointed shall, within three years from the passing of this Act, by their Award in writing under their hands, ascertain what persons, whether as free miners, or claiming through or under free miners, or as lessees of free miners, were at the passing of this act in possession of or entitled to gales for coal or iron mines within the said hundred, or stone quarries within the said forest...”

Section LXXXIII. “And be it enacted, That the Commissioners for the Time being of Her Majesty’s Woods, Forests, Land Revenues, Works and Buildings, on behalf of Her Majesty, may at any time after the passing of this Act, grant Leases of any quarries in the said Forest for any term not exceeding Twenty-one Years to any Person, or Persons being Free Miners as aforesaid, and that after the passing of this Act no Quarry within the said Forest shall be opened by any Person or Persons whomsoever other than by virtue of a lease...and notwithstanding any Custom or Usage to the contrary...” Thus the free miner’s monopoly of quarries would eventually cease.

The Act also required commissioners to: delineate and describe the gales, prepare plans of them and set out their metes and bounds on the ground, to prepare rules for the working of mines and quarries, to decide the level of royalties payable to the crown, prepare rules governing forfeiture and procedures for dealing with disputes, to report progress to the Commissioners of Woods and Forests and to hang up in the Speech House general plans and notices. Payment of the three Mining Commissioners was not to exceed £5 per day spent in executing the powers of the Act during the first two years. In the third year the sum reduced to £3 per day. This appears to have been an incentive scheme to encourage progress.

Costs were considerable. The 3rd Report of the Mining Commissioners dated 12th March 1841, records “that the expenses of the commissioners had, up to that time, exceeded £5,000” (Wood, J.G.,1878, p176). As to the final cost, it was recorded in 1853 (10), that the Dean Forest Mining Commission, “which lasted 27th July 1838 to 26th July 1841cost the sum of £10,003 12s. 0d., and there has been paid to Mr Sopwith for the years 1842 to 1843 inclusive the sum of £455 9s. 3d. although in the years 1849-50 and 1851 no payment has been made to him”. The cost of the Sopwith’s survey work undertaken in 1833-34 was probably covered in the costs of the 1831 Commission.

Awarding Gales

The task facing the Mining Commissioners was firstly to define the gales claimed within a dozen or more coal seams, the deposits of iron-ore, and the workable horizons of stone, and secondly to examine claims and award ownerships. Sopwith (1841) has described some of the difficulties that lay ahead including the obscurity of the customs. The mineral field

required a treatment that was economically viable for the future, and equitable with regard to the ownership claims of free miners and others. The Mining Commissioners had powers to merge gales to achieve this.

The Commission opened at Coleford on 5th September 1838 and, after many meetings, it was completed there on 26th July 1841 with one day remaining of the three years set by the Act. At an early stage, free miners and others were asked to submit their claims. By March 1839, over 1,000 claims had been deposited and scheduled; 451 of them had been examined by March 1840. By then the Commission had caused plans of the district to be engraved for the “purpose of delineating the several tract of coal and iron-ore... and which were found superior in every respect to manuscripts” (9). So far as is known, the plans dealing with quarries were not engraved. The outcome was the Award of the Dean Forest Mining Commission, 1841, comprising:

The Award as to Coal Mines dated 8th March 1841, describing and awarding over 100 coal gales containing several hundred pits, levels and works;

The Award as to Iron Mines dated 20th July 1841, describing and awarding some 20 iron-ore gales containing perhaps 100 pits and levels; and

The Award as to Quarries dated 24th July 1841, describing and awarding 310 quarries.

The Award of Coal and Iron Mines is well known. It was published in book form by John Weale in 1841. The volume also contained the ‘*Index Map to the Series of Engraved Plans of the Coal and Iron Mines in Her Majesty’s Forest of Dean*’ referred to by the Mining Commission in 1840. Those plans, dated 1835, were published separately and are described elsewhere ((Standing, I.J., 1989). The Award of Quarries was not included, nor as far as is known, was it published separately in 1841.

Awarding the Quarries

Although less complicated than the mines, the quarries posed challenges of another kind. On the ground the Commissioners were faced with many square miles of sloping hillsides where stone was quarried, or might be quarried at some future time. The Commissioners also received written claims to the quarry gales, some of them recorded in the Gaveller’s books and others perhaps not. Another complication was a sizeable number of disused and forgotten quarries. If not worked since before 1833, claims to them were excluded. Nevertheless, many of them were surveyed and recorded, albeit unnumbered, on the plans.

Although the Commissioners ruled that a “length” of 20 yards would be the extreme width of a single quarry gale, many gales of two or more widths were eventually awarded. The reason was that the sum of 3s. 4d. was to be paid as rent for each length of 20 yards. Rents were to be paid on the 29th of September in each and every year for 21 years. Thus the 17th century custom of 10 groats per quarry, paid annually on the Feast of St Michael the Archangel, was maintained. The final outcome was the *Award as to Quarries* in which the Commissioners identified slightly more than 310 gales (11) and awarded them to 186 persons, some whom were partners.

The Award as to Quarries

This is the legal document in which the Commissioners recorded their decisions. The 1838 Act required that certified copies were to be deposited in the Office of Land Revenue Records and Enrolments, with the Clerk for the Peace for the County of Gloucester, and with the Gaveler or Deputy Gaveler. Thus at least three, possibly more, manuscript copies were produced. Each consisted of 26 parchment leaves, hand written in black ink, together with 30 manuscript plans on heavy cartridge paper, within a single, leather bound volume measuring nearly two feet square. Each written leaf is stamped and sealed and each plan is signed by John Probyn, Thomas Sopwith and John Budle.

Page 1 recites the authority under which the Award was made. Then follow the entries, written in standard form. Each is headed with the person's name to whom an award was made, his status as a free miner or other, his address, the locality of the awarded quarry, the number of standard lengths, or a measured length, and an identity number of the quarry gale. There is no obvious order in the listing; possibly they appear in the order that applications were received. An example of an uncomplicated award is:

“THOMAS BRAIN of Hawthornes in the said Forest,
(as a Free Miner,) to
One at Deans Meend - - - - - No.282”

A more complex award :

“CHARLES BARROW, of Stow Green, in the said Hundred,
(as claiming through, or under, a free miner,) to
One at Drybrook - of Twenty-four yards
near Ellwood and a Half - - - - No 107
One at ditto - - - - - No 110”

The list is followed by a description of the plans on which the metes and bounds of the quarries were depicted, and of the rents to be paid. The section concludes with the witnessed signatures and seals of the three Commissioners.

Then follows the *First Schedule to the Foregoing Award*. It lists the same persons in the same order as in the Award and it repeats the detail of the awarded quarries. The significant difference lies in recording the quarry gale boundaries by reference to the plan on which they are drawn. The free miner detail is omitted. Although seemingly repetitious, the *Schedule* mirrors those of the Awards of the Coal and Iron Mines in which the boundary entries were complex and lengthy. The entries for Thomas Brain and Charles Barrow are:

“THOMAS BRAIN'S QUARRY
All that Quarry at Deans Meend, numbered 282, extending in length
20 yards, and bounded as shewn on Plan AA.”

CHARLES BARROW'S QUARRIES
All that Quarry at Drybrook , near Ellwood, numbered 107,
Extending in length Twenty Four and a Half Yards, and
bounded as shewn on Plan G.



DEAN FOREST

AWARD AS TO QUARRIES

BY THE

COMMISSIONERS ACTING UNDER THE ACT OF

1st & 2d Victoria, Chapter 43.

COMMISSIONERS:

THOMAS SOPWITH.
JOHN PROBYN.
JOHN BUDDLE.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY,
FOR HER MAJESTY'S STATIONERY OFFICE.

1859.

Price One Shilling and Sixpence.

Figure 1. Title page from 1859 publication
of *Award as to Quarries*

And also all that other Quarry
at the same place, numbered
110, extending in length
Twenty Yards, and bounded
as shewn on Plan G".
[reproduced below]

The text concludes with the: *Second Schedule to the foregoing Award* which states the rules and regulations for working the quarries.

To delineate the gales the Commissioners relied entirely upon the 30 surveyed plans, lettered A to Z and AA to DD. Each plan is drawn, at scale 1 chain to 1 inch, within a border measuring 1 foot 8 inches. Each carries an identifying place-name, for example '*north east part of Birchill*', and sufficient base detail for orientation. Most plans occupy a single sheet but some extend over two sheets. Some carry insets depicting smaller localities. Each quarry gale, duly numbered, is delineated, usually as a rectilinear block, and the extent of working, presumably circa 1834-5, is shown within. The holdings of individuals are also differentiated by hand colouring. Plans C,E and G are reproduced below in reduced form.

Outcomes: 1841 to 1862

The Award achieved various outcomes. For the free miners and quarry operators it defined ownerships and gave security for the working, merging and transferring of quarries. To the

Crown it gave regulation, increased rentals and eventual control.

The 1838 Act ruled that at the end of the 21 years following the 1841 Award, any person if still alive and holding a gale awarded to them would continue at the same rent until death. In other cases, the Gaveller was to fix new rents. This meant that the granting of quarry gales would die out over time and be replaced by leases.

The 21 year period expired on the 23rd July 1862. Shortly before this, The Dean Forest Amendment Act of 1861 was passed to make "*further Provision for the Management of Her Majesty's Forest of Dean, and the Mines and Quarries therein and in the Hundred of St. Briavels in the County of Gloucester*". The provisions tidied up anomalies arising since 1841 and it affirmed the powers of the Commissioners of Woods & Forests to grant leases of quarries. A further act was passed in 1871. By then, the right of the free miner to be granted new gales of stone was a thing of the past. Some records survive from this period and are described below.

In 1851, there were 295 males employed in quarries. By 1871 the number had risen to 340. In contrast, the number of coal miners was 1,712 and 2,864, respectively.

1859: The publication of the *Award as to Quarries*

In 1859, HMSO published a copy of the 1841 *Award as to Quarries*. The format was a single volume measuring 8.5 inches tall by 5.5 inches wide. Together with fly leaf and title page, it contains 48 printed pages and 30 printed plans, bound as a single volume in thin blue card. The title page is illustrated in Figure 1.

The reasons for its publication are not clear. Is it possible that with the approaching expiry of the 21 years a new need to identify ownerships had arisen? Or was perhaps the publication a promotional exercise by the Crown to attract investors and increasing rental income? Curiously, *Hunt's Mineral Statistics, Part 11 for 1858*, also published in 1859, carried details of some Forest quarries (see Appendix 2). With the recent completion of the South Wales Railway perhaps new markets were hoped for. Whatever the reasons, quarry rents for lessees had risen to 20s. for 20 yards and 1s. for every additional yard by 1861.

The 1841 Award of Quarries as a historical resource

The Award contains the names and addresses of 186 free miners to whom quarry gales were awarded in 1841 whilst the 30 plans precisely locate the gales on the ground. They also show the extent of quarrying within the gales at the date of survey, and other quarries that must predate 1833. In addition, the plans record other detail including boundary stones, the odd dwelling, tram roads, mine shafts, kilns & etc. For landscape and quarry historians the Award and other contemporary records are a valuable sources. The plans carry no attribution but they will be Sopwith's survey work. The date of surveys is not stated; the first mention "of causing plans to be made" for the coal and iron mines appears in the 4th Report (1835) following the 1831 Act, but whether or not the quarry plans were completed by then is not known.

Sources and their availability for study

As already noted, the *Award as to Quarries* and its plans was not included in the 1841 Coal and Iron mines volume, nor, seemingly, published elsewhere at the time. J. G. Wood (1878, p.293) noted that the Award and Plans were reprinted by the Queen's printers in 1859. His use of the word 'reprinted' perhaps relates to the original manuscript Award, not to an earlier publication.

Copies of the *Award* are no longer held at the Coleford Office of the Deputy Gaveler although some associated, manuscript indexes survive there. Dating from the 1860s, the names of holders of the numbered quarry gales in the various forest walks are arranged alphabetically. The 1841 copy of the Award deposited with the Justices of the Peace is probably the copy now at GRO, (ref Q/RUm 173/3). The cover is shown in Figure 2.

The third original, that deposited in Office of Land Revenue Records and Enrolments, should be at the Public Record Office. The National Archives map catalogue records item No. 2218 as: "a bound volume of 46 plans accompanying the Award of Quarries dated 28th July, 1841". Each map, drawn at a scale of 1 chain to the inch, measured approximately 1 foot 9 inches square. The content of the additional 16 plans awaits discovery. It is possible that the Deputy Gaveler's copy is also held at The National Archives.

As already noted, copies of the Award were published in 1859. Copies appear to be rare. In 2008, the volume was unknown to the present Deputy Gaveler at Coleford and to local antiquarian book dealers. No copy was listed by Austin and none were found using the County Library websites, including the Gloucestershire Collection. A copy belongs to the

current author. Another is held at Gloucestershire Archives (Ref D 2511). This latter copy has, bound within it, much hand written information recording whether the persons awarded gales in 1841 are living or dead. Some 117 new quarries, drawn and numbered in red ink, have also been added to the plans. Although purchased by Gloucestershire Archives in 1969 for £3. 3s. from Georges Bookshop, this item must have been created in the office of the Deputy Gaveller, or Deputy Surveyor of Dean, during the 1860s. For Hunt's Mining Statistics, see Appendix 2

Two further copies are said to be in private collections. Hopefully, more will come to light. Photocopies of the plans published in 1859 have been deposited at Dean Heritage Museum. A reprint is under consideration.

Acknowledgements

To Arthur Price for his investigations into quarrying rights elsewhere and for bringing Hunt's Mining Statistics to my attention; to the Deputy Gaveller, John Harvey for searching his office and to former Deputy Gaveller, Albert Howell; to antiquarian book dealers John Saunders and Lesley Aitchison, my thanks.

Notes

1. Quarrymen of the Isle of Purbeck used to claim the right to sink shafts in any land in order to quarry stone from underground beds. See: *Purbeck Shop; a stone worker's story of stone*, by Eric Benfield, 1940, C.U.P. In *Practical Stone Quarrying* by Alan Greenwell and J Vincent Elsdon. Pub. Crosby Lockwood, 1913, record that the right belonged to members of the Guild of Purbeck Marblers and dated from medieval times.

2. Defining the forest boundary also revealed that 1592 encroached dwellings and small enclosures had been made in the forest. Detailed surveys of them were produced by John Hosmer in 1834. The surveys and schedules, one for each of the six forest walks, were published in *Appendix No. 3* of the Second Report. For every encroachment details of the holder, date made, area taken and the number of houses, if any, are recorded. They are a useful resource for industrial and family historians. Research copies are held in the Gage Library, Dean Heritage Museum.

3. Gales. An area of coal, stone or iron-ore to which the exclusive right to extract was claimed by, and granted to a free miner, subject to certain rules and payments. Once granted to a free miner, a gale was an estate in fee simple that could be worked by him or leased or sold to others. This is, chiefly, how 'foreigners' came to acquire them.

4. Prominent 'foreigners' operating mines included: Edward Protheroe of Bristol who held 30 gales and extensive collieries near Cinderford, the metallurgist David Mushet who operated the Bixslade collieries, and the Crawshays, iron masters of Merthyr Tydfil, who were developing Lightmoor Colliery and iron-ore mines.

5. Thomas Sopwith, surveyor of Newcastle upon Tyne. Appointed as a Dean Forest Mining Commissioner to represent the Crown by the 1838 Act. The plans mentioned here clearly predate 1835. They may explain a drawn set of plans surviving at Gloucestershire Archives (D3291/IV/13) that differ from the engraved set of 16 plans that were eventually published, (Standing 1989).

6. Gavers and Deputy Gavers. Crown officers appointed to supervise mining in the Forest of Dean and to collect royalty payments and galing fees. See Hart (1953) and A E Howell (1993) the Deputy Gaveller of Dean 1863 to c.1994.

7. John Probyn of Longhope Manor, and of an ancient family, long active in national, county and forest affairs, was an obvious choice as the Mining Commissioner to represent the interests of the free

miners. Probyn also had a residence at Cheltenham.

8. John Buddle of Wallsend, colliery owner and mining engineer. Renowned as a mineral viewer or agent and author of works on mining and geology. Appointed as a Mining Commissioner to act as umpire between the Crown and the free miners.

9. The set of 16 large scale engraved plans, surveyed by Thomas Sopwith, dated 1835.

10. Report of the Commissioners for Woods, Forests and Land Revenues, 1853, p337.

11. The highest numbered quarry is 310. However, there are a few quarries, presumably late comers, with numbers suffixed with letter a.; eg 106a on Plan G.

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Appendix 1. Content of the Quarry Plans

The following 30 printed plans form part of the 1859 publication of the Award as to Quarries 1841.

<i>Title</i>	<i>Location</i>	<i>Title</i>	<i>Location</i>
A. <i>Dark Hill.</i>	upper Fetter Hill west	Q. <i>The Bourts, & Barnedge</i>	Nr Mireystock.
B. <i>Hangmans Hill.</i> <i>Tile Quarry Hill</i>	east side Fetterhill. N pt. of Darkhill	R. <i>Great Berry, pt Cinderford</i>	Nr Brierly.
C. <i>NW Birch Hill</i> <i>SE Birch Hill</i>	West side Fetterhill. ditto	S. <i>Forge Hill</i> <i>Moorwood Coppice</i>	Lydbrook. NGR 607 170.
D. <i>Prosper Hill</i> <i>Ninewells Bottom</i> <i>Bridewell Tump</i>	W side lower Fetterhill. Nr Joyford. Christchurch.	T. <i>Hawsley Hill</i> <i>Lining Wood</i>	above Lydbrook above Mitcheldean.
E. <i>Gosty Knoll</i> <i>Coverham</i>	S of Coalway. Nr Five Acres.	U. <i>Ruerdean Woodside</i> <i>Ruerdean Hill</i> <i>John Knights Hill</i>	Nr Nailbridge. Knightshill.
F. <i>Yorkley</i> <i>Cleawell Meend</i> <i>Fetter Hill</i>	N of Parkend on Cannop Brook.	V. <i>Ruerdean Hill West pt</i> <i>Ruerdean Hill NE pt</i>	
G. <i>Drybrook Nr Ellwood</i>		W. <i>Ruerdean Hill East pt</i>	
H. <i>Noxon Park</i> <i>Dark Hole</i>	N of Bream. E of Bream.	X. <i>Harrow Hill SW pt</i>	N of Nailbridge.
I. <i>Hang or</i> <i>Knockley Hill</i>	along the lower Oakwood Brook	Y. <i>Harrow Hill S pt</i> <i>Harrow Hill N pt</i>	
J. <i>Knockley Green</i>	S of Oakwood Brook nr Parkend.	Z. <i>Sharpridge</i> <i>Haysley</i>	Shapridge, Flaxley Valley. N of Drybrook.
K. <i>Arthurs Folly</i>	NGR 610 080	AA. <i>The Wilderness</i> <i>Stenders</i> <i>Deans Meend</i>	includes Plump Hill. Nr Mitcheldean. ditto
L. <i>Bixhead</i> <i>Bixslade</i>	Broadwell to Cannop Pond.	BB. <i>Lea Bailey Hill SW pt</i>	
M. <i>Howlers Hill</i> <i>Woodgate</i>	Howlers Slade. Nr Five Acres.	CC. <i>Lea Bailey Hill</i>	N end of Wigpool.
N. <i>Wimberry</i> <i>The Lonk</i>	Wimberry Slade. Nr Joyford.	DD. <i>Edge Hill</i> <i>Pingary Tump</i>	S of Plump Hill. on Wigpool Common.
O. <i>Great Berry, pt</i> <i>Hangerberry</i> <i>The Bourts, pt</i> <i>Worral Hill</i>	Nr Brierly. Upper Lydbrook. ditto.		
P. <i>The Phuds</i> <i>Aston Bridge</i> <i>Lydbrook</i>	above Lydbrook. ditto		

Appendix 2

Hunt's Mineral Statistics for 1858.

The full title is: Memoirs of the Geological Society of Great Britain and the Museum of Practical Geology. Mining Records. Mineral Statistics of the United Kingdom of Great Britain and Ireland, being Part 11 for 1858. By Robert Hunt, FRS, Keeper of Mining Records...Printed for Her Majesty's Stationary Office. [probably published in 1859].

The volume carries details of quarries arranged by counties; pp 158-9 lists 11 Forest quarry operators working 38 quarry gales. Some of these were adjacent to each other, others dotted about here and there. The largest operator listed here was Grindell & Co., who were operating 8 gales on Birch Hill, nos. 38, 39, 40, 41, 46, 47, 57 amounting to 11 lengths in all, See Plan C. They also worked 5 more gales elsewhere. Richard Townsend worked 48 and 49, adjacent to Grindell & Co. Beyond lay No 50 of five lengths awarded to Letitia Jenkins in 1841, and presumably later sublet.

Hunt's list also records the uses of Forest stone including: docks and railways, grindstones, churches, monuments, canal work, civic buildings, field and garden rollers, steps and paving, troughs, cisterns, etc. It is noted that: "On Birch Hill an unlimited quantity can be raised for ages to com. About 150,000 cubic ft were raised for Cardiff Dock by Hemmingway & Pearson from, Nos 39 and 40," now worked by Messrs Grindell. With regard to transport, 19,562 tons were carried by the Severn & Wye Tramway and Canal Co, and then presumably shipped, whilst the new South Wales Railway had carried 1,099 tons.

A substantial foot-note, by George Atkinson and John Terrett of Coleford, describe the nature, colour, uses and locations of the Dean Pennant Sandstones. Principle localities are said to be: Birch Hill, Bixslade & Bixhead, Dark Hill, Barnedge at Lydbrook, Knockley Tump and Gorsty Knoll. Information is supplied about operators, prices and stone quality. These subjects and the history of the several large firms warrant further research.

I am indebted to Arthur Price for bringing Hunt's Statistics to my attention.

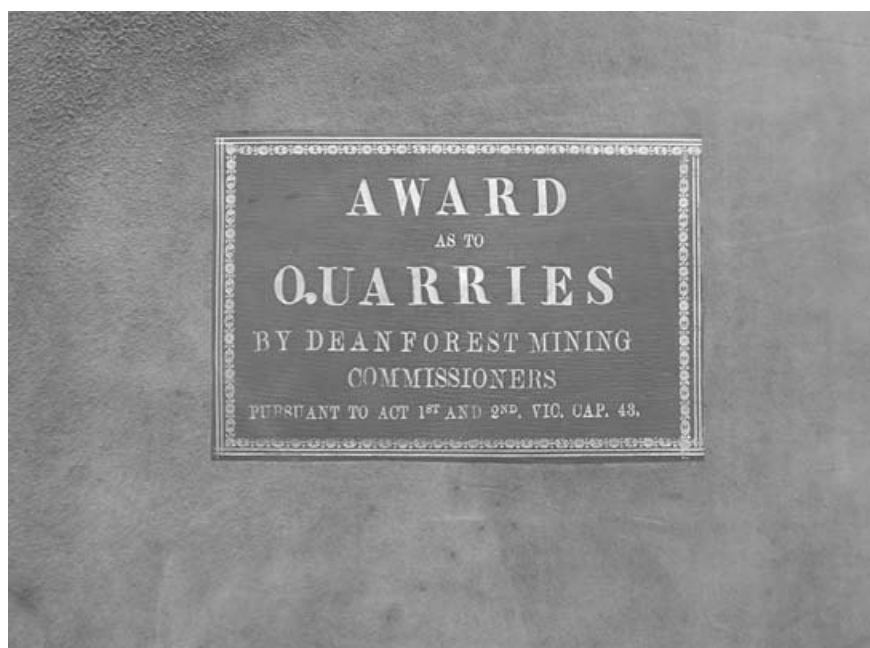


Figure 2.

Cover of the 1841
Award as to Quarries

(Courtesy of
Gloucestershire
Archives
QRUm 173/3)

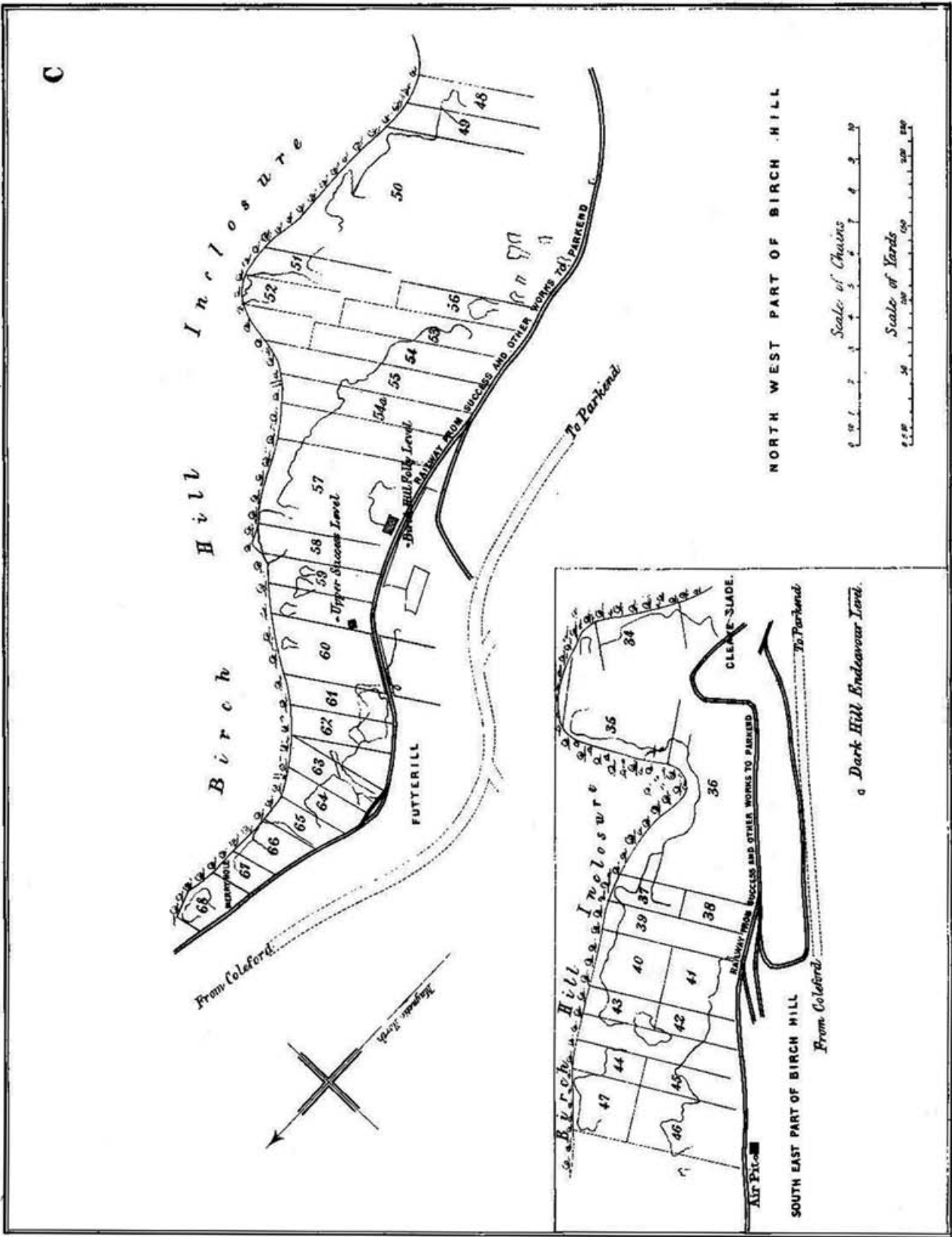
Plan C.

The road is that running down the valley (Fetter Hill) from Coalway towards Parkend.

Both sides were extensively quarried; this plan shows the gales on the eastern side. Some operator detail are given at Appendix 2.

Note the exceptional length of No 50 and how Nos 51 and 52 occupy higher ground than 53 and 56.

Note also how Nos 53 to 57 form a continuous, face.



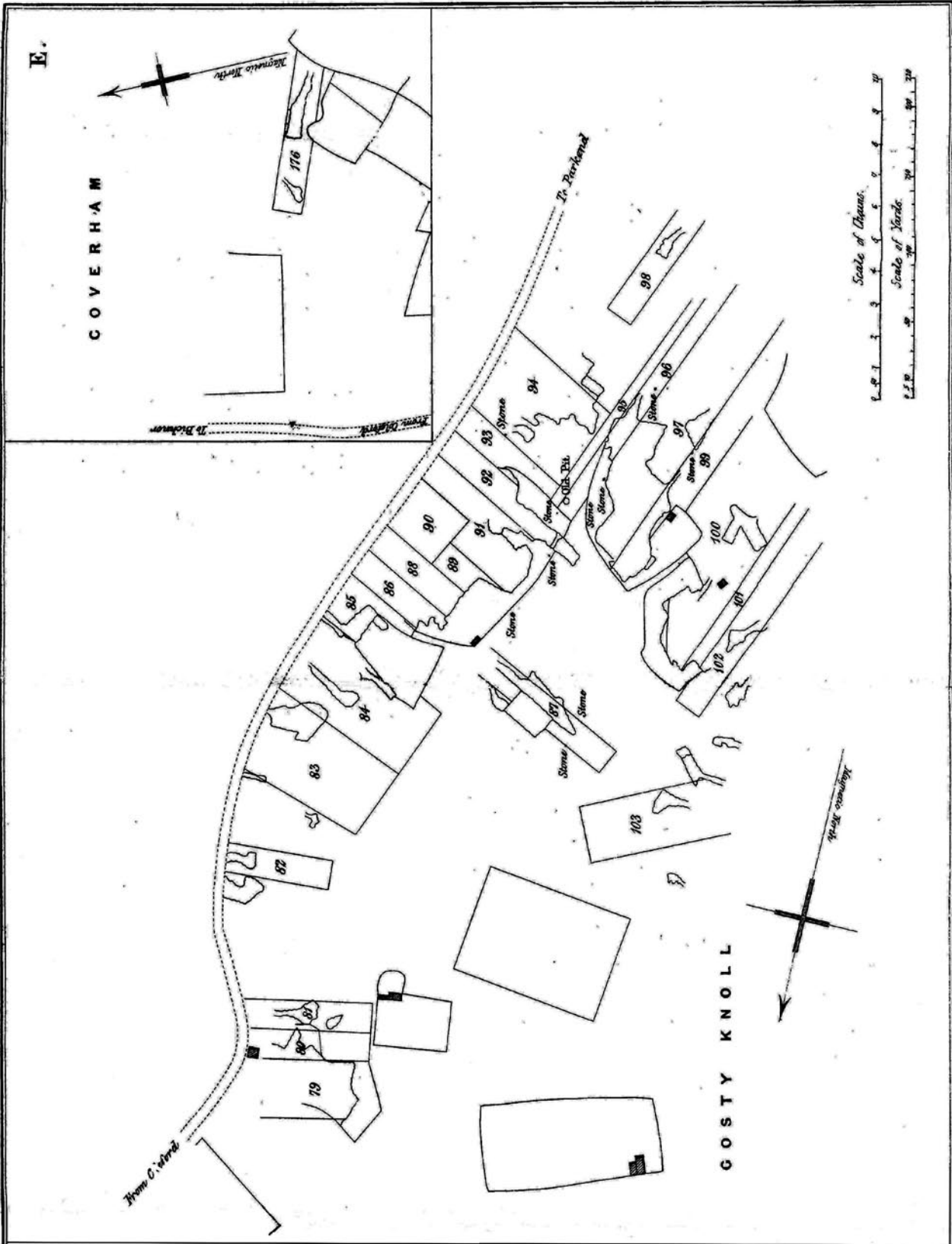
Day & Son, Litho to the Queen

Plan E.

The area now known as Gorsty Knoll lies south of Coalway. Its steeper slopes rise above the western side of the B4431, Coleford to Parkend road, before sweeping west towards Milkwall.

24 quarry gales, numbered 79 to 103, are shown 'squaring the hill' with the extent of working shown within. Some gales contain a single quarry whilst others, eg 85, 86, 88, 89 and 91 appear to be working a single quarry.

Note the several surface marker stone. The inset shows Coverham near Berry Hill.



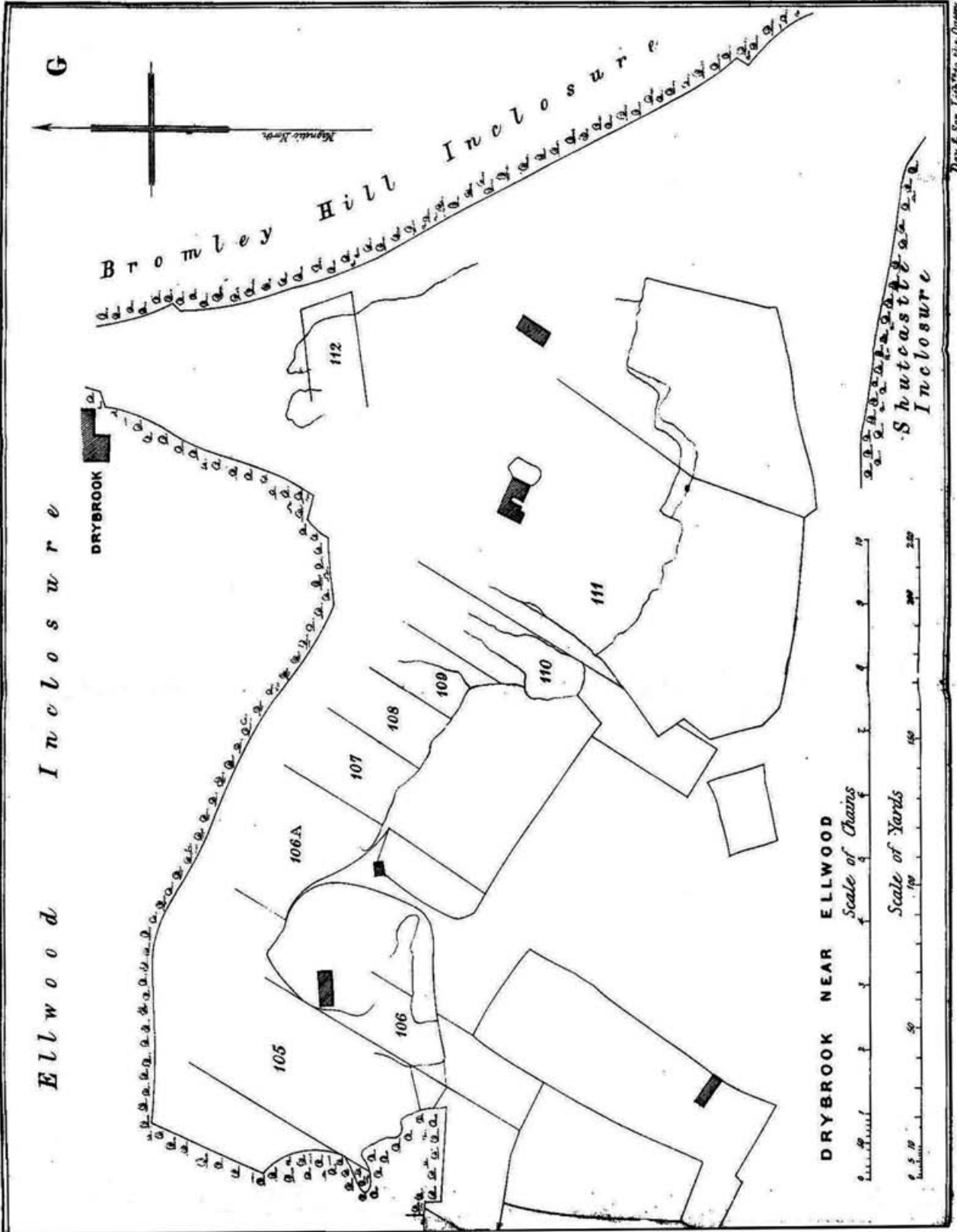
Deighton & Sons, Lith., No. 10, New Street, Leeds.

Plan G.

The area now known as Little Drybrook lies south of Sling. Gales 107 of 24.5 yards, 110 of 20 yards were awarded to Charles Barrow.

Gale 112 is working eastwards whilst 110 and 111 being on the opposite side of the valley are working towards the southwest.

The working directions of Nos 106a to 109 are unclear.



Day & Son, Lith'rs to the Queen