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THE INDUSTRIAL HERITAGE OF BIXHEAD & BIXSLADE IN THE FOREST OF DEAN

By Ian Standing

Introduction

Bixslade is a valley lying in West Dean civil parish of the Forest of Dean. The slade, or valley, begins on the high ground east of Coleford between Broadwell and Coalway Lane Ends. It deepens as it descends in a south-easterly direction for 2 km. to join the Cannop Valley at Stonyhill Green close to the lower Cannop Pond. Bixhead is the place-name applied to the high ground at the head of the slade. (Fig. 1)

Bixslade is well known to industrial historians, and attracts many visitors on account of its industrial remains and splendid landscape. Surprisingly, locally little of the area is known for these attributes, and no full list of its industrial sites has previously been published. These shortcomings may have contributed in part to recent proposals by the County Council to use the quarries at Bixhead as the next domestic refuse tip for West Gloucestershire; if these proposals were to be implemented, they would irreversibly harm one of the County's finest areas of extractive industrial heritage.

This paper presents material pertaining to the industrial heritage of Bixhead and Bixslade and other germane information, such as drainage, woodland history, and wildlife. This non-industrial material is included because of its relevance to the case recently made by GSIA for conservation. Thus the first part of this paper deals with the area under various general headings; the second part deals with the strategy used by the GSIA to forward the case for conservation; and the third part lists the individual surviving sites and features within the area.

Wildlife, Woodland & Forest History.

The place-name 'Bix' derives from the Box tree, and thus Bixslade was the valley of the box trees. Throughout the medieval period the area lay within the Bailiwick of Staunton. The woodland cover is likely to have been mainly oak interspersed with areas of scrub and rough pasture, whilst alder may have colonised the wetter areas.

After 1675 Bixslade was the boundary between Worcester Walk to the north and York or Parkend Walk to the south. By 1700 the area lay within The Great Inclosure. In the survey of 1787 Barnhill and Bixhead Slade contained a good sprinkling of very fine oaks, which were formerly very thick.

In 1810 Barnhill Inclosure was made, amounting to 353 acres, and planted with oak together with some fir and chestnut. In 1814 Nagshead Hill Inclosure was laid out and planted. It extended over 943 acres; Barnhill was felled between 1945 and 1960 and replanted with varied crops. Nagshead retains much of its Napoleonic oak and is managed as an RSPB Reverve for flycatchers.

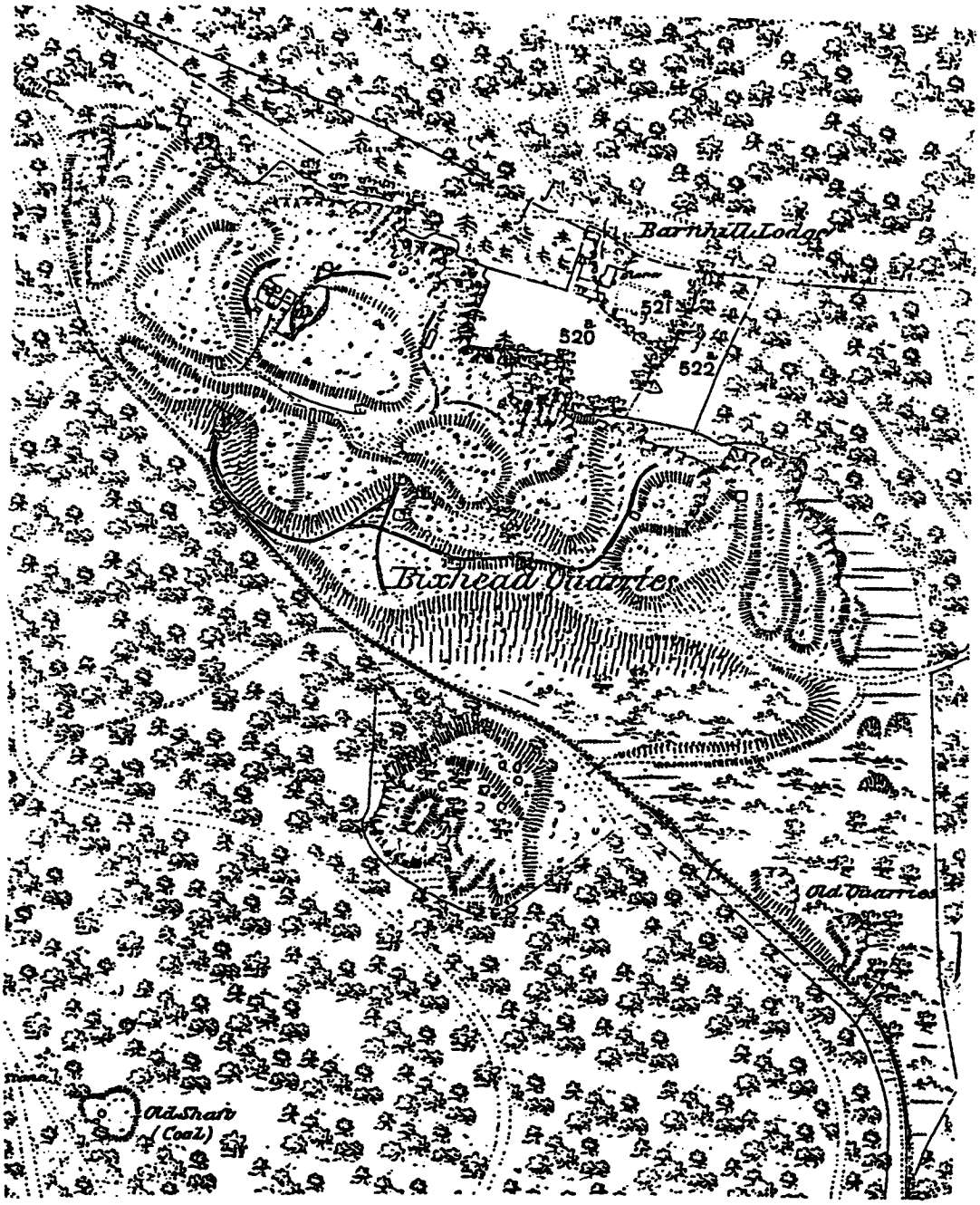


Fig. 1 Bixhead in 1878. from OS 25" map 1st edn.
(Barnhill Lodge and its fields have since been quarried entirely away. Pullens Quarry has not yet been dug. Many interesting details of the tramroad can be seen, including turnouts and tunnels. The coal shaft in the SW corner is an air shaft on Bixslade High level.)

The varied forest crops, disused quarries, open glades and wet areas form a rich variety of wildlife habitats. Of particular note are the areas of stone in quarries and tips especially suited to reptile colonisation. Lichens, mosses, liverworts and ferns are abundant. Spion Kop Quarry, hidden amongst vegetation on the south side of Bixslade, is a designated Nature Reserve managed by the Gloucestershire Trust for Nature Conservation.

Underground stone workings in one of the Bixhead Quarries form a habitat for both Greater and Lesser Horseshoe bats. The site is listed by NCC.

Drainage.

Bixslade is the major drainage route for most of Barnhill Plantation and the northern slopes of Nagshead Plantation. The valley floor has been subject to major changes due to mining and quarry tips and although it carries a surface stream in places, most of the drainage is below ground in disused coal workings. Much of the water emerges from Miles Level close by the Stoneworks to join the Cannop Brook below Cannop Ponds. It is likely that drainage is very rapid and that minimal filtration of the underground stream water occurs on account of its easy passage through old coal workings.

Geology.

The rocks consist of massive sandstones interbedded with shales and productive coal seams. All belong to the Pennant Group of the Coal Measures. Detailed descriptions have been published by Sibley (1927), Trotter (1942), Welch & Trotter (1961) and Dreghorn (1965).

The quarries and collieries provide classic exposures, unsurpassed elsewhere in Dean for these rock types. Dreghorn states:

> To study the Pennant Sandstone in detail and to appreciate its importance to the building industry it is essential to visit the three large quarries at Bixshead in Barnhill Plantation ...

Bixhead Quarries are registered as a British Regional Environmental (geological) Site by the Regional Centre at Bristol City Museum.

The extraction of iron-ore.

Iron-ore occurs in the Pennant Sandstone of Bixhead and along the northern side of Bixslade. This is unusual in Dean, where the iron-ore lies chiefly in the Crease Limestone. Details of the ore bodies and some of the mines have been published by Trotter (1942), and by Court & Standing (1975). The mining of iron-ore appears to have ceased after 1932 - (Bick, 1980).

The quarrying of stone.

Stone has been quarried at Bixhead since the 15th century and probably long before. The earliest surviving documents record a lease to John Hawtyne who accounted for 4 shillings for the farm on one quarry at Bykeshead (Hart, 1971). Quarrying here has thus a proven history extending over 500 years to the present day, and is still in progress.

In 1675 there were about 20 quarries at Bixhead (Hart, 1971). Nicholls (1856) noted a total of 320 quarries at work in Dean, and that Telford's bridge at Over, and Lord Somers' mansion at

Eastnor, were built of their Pennant Sandstones. Sopwith (1859) depicted 17 quarries at Bixhead and awarded 14 of them to various parties. Dreghorn lists buildings recently completed in Bixhead Pennant: these include University College of Wales at Aberystwyth, Berkeley Nuclear Power Station, University College, London, and the Shire Hall in Gloucester. Local tradition maintains that London Bridge was also built of the stone.

Throughout the kingdom numerous civic and municipal buildings of the 19th century were constructed of the stone. For these reasons, a healthy future appears likely for the present quarries and stoneworks. The need to rework quarries not currently in use may arise in the future. Bixhead Quarries are registered in the County Archaeological Sites & Monuments Record.

Coal Mining.

Two coal seams ascend from the Main Basin towards Coleford and lie beneath the valley foot. These are the Yorkley Seam which soon outcrops normally, and the Coleford High Delf. The crest of an anticline (known as The Ridge) crosses Bixslade near the quarries and brings the Coleford High Delf seam close to the valley floor of Bixslade but without outcrop. In Barnhill Plantation an outlier of the Yorkley Seam is to be found west of the anticline. Both coal seams have been extensively mined by numerous pits, shafts and levels. The largest included Bixslade Upper Level, Bixslade Deep Level, Miles Level, and the various openings of the Union Pit (Trotter, 1942). The date of the first mining of coal in Bixslade is unknown, but may have been during the medieval period. In 1809 David Mushet and Thomas Halford began driving the Bixslade Level and were producing coal by 1812 (Osborne, 1951; Standing, 1980, 1981, 1986). There are thus interesting connections between Bixslade and other major industrial sites in Dean such as Darkhill Ironworks and Whitecliff Furnace. In 1845 Mushet produced over 30,000 tons of coal from Bixslade (Hart, 1971). Bixslade and the neighbouring slades were a major source of coal in the early 19th century.

Freeminers have been active in Bixslade for centuries and one pit at the lower end of the valley still produces coal. Substantial remains of the coal mines are extant, and a rich heritage of archive material has survived.

Bixhead and Bixslade as a communication route.

A map of 1608 shows roads from Coleford via both Broadwell and Coalway crossing Bixhead and joining in Bixslade to a single road which crossed the Cannop Brook and progressed into the Forest. It is probable that this route was in use throughout the medieval period and possibly long before.

Between 1810 and 1812 the Severn & Wye Railway was constructed from Lydney up the Cannop Valley. This was a horse-drawn tranroad built principally to carry coal, ore and stone. In 1812 a branch tramroad was built from the main line up Bixslade to Bixhead. It carried coal and stone throughout the 19th and early part of the present century, and continued in use long after the main line had been converted to a proper railway. The Bixslade tramway branch remained intact and used until 1946. The horse were stabled at Broadwell. Thereafter stone and coal were transported by road (Parr, 1963).

Substantial remains of the tramroad are extant including its entire course and sub-branches, wharves and numerous stone sleepers (Awdry, 1973, 1975, 1983) Pope (1985) has published many fine photographs. Artefacts from the Bixslade tramway have survived and include a wagon at Towyn Railway Museum. This provides some indication of the wide degree of interest. The tramroad is registered in the County Archaeological Sites & Monuments Record.

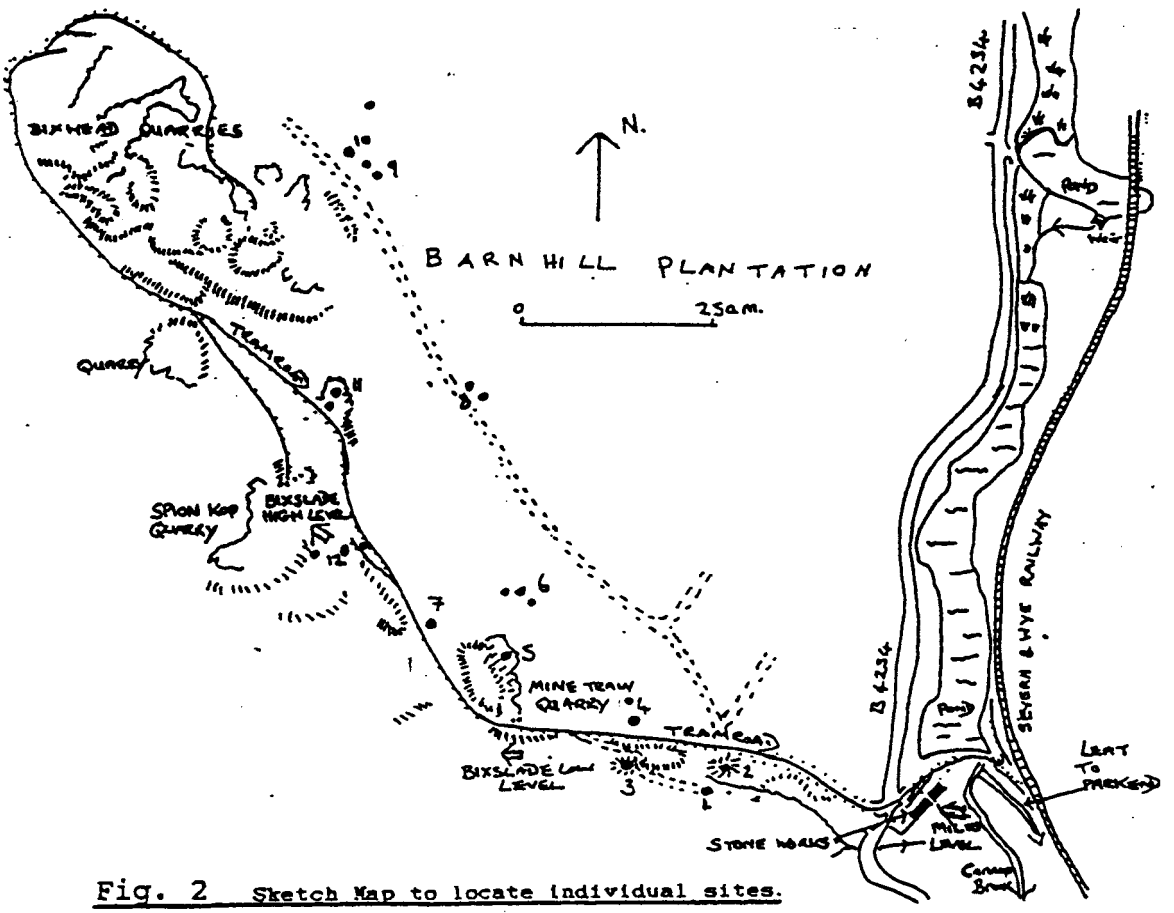


Fig. 2 Sketch Map to locate individual sites.

Pits and Levels

1 Present day free mine to Y
2 Collapsed shaft on Miles Level
3 Union Pit to Co
4 Baldwins Level to Y
5 Birch Hill Iron Mine
6 Gwilliam's Level to Y
7 Bounds' Drift to Co
8 Hale & Wintle's Level to Y
9 Pits to Y
10 Parry's Iron-ore pit & level
11 Harvey's Drift to Co
12 Pits and modern drifts to Co

Y = Yorkley seam
Co= Coleford High Delf

The Society's Conservation Strategy.

Abandoned quarries, scowle holes and mineshafts have long been used for refuse disposal in the Forest of Dean. Since the 1870s countless sites have disappeared and only three large Pennant quarries now survive. These are at Bixhead, Fetter Hill and at Ruspidge. At Howlers Hill near Broadwell a spectacular series of quarries has been systematically filled since the 1950s, and the last one, Oak Quarry, is nearly full.

For many years it has been widely known locally (and stated as certain fact by some) that Bixhead Quarries would become the next refuse tip. This dismal prospect was felt by many to be so inevitable that opposition was thought to be pointless. One notable exception was Diana Court of Coleford, who expressed the view that Bixhead was too valuable a site, both geologically and historically, to be obliterated by refuse. From the early 1980s she took an interest in the problem and was responsible for awakening a need for action.

In April 1987 a field excursion to Bixhead and Bixslade was organised by the Society and the various issues were examined and discussed. In consequence the Society took the view that the area should not be lost under refuse.

The first priority was to consult with others to ensure that the Society's view was a reasonable one and that it would carry support from other quarters. The County Archaeological Officer was shown the area and its many sites, and consultation was made with Dean Heritage Museum Trust, the Committee for Archaeology in Gloucestershire, field centres and other specialist interests. There was general agreement about the quality of the heritage and the need for its conservation. At the same time it was appreciated that refuse disposal is a most serious and problematical necessity - which even industrial historians help to cause. It was thought that action was required <u>now</u>, and not be delayed until the County Council might apply to itself for planning consent at Bixhead.

There appeared to be three parties which were capable of influencing the fate of the area. These were the County Council, as potential refuse site creators, the Forestry Commission, as the effective 'landowner' (the land is owned by the Ministry of Agriculture), and the Forest of Dean Stone Firms Ltd, as the holder of leases of the quarries. In the first instance it was decided to approach the County Council and the Forestry Commission with a well-argued case for conservation.

It was also known that letters to local authorities occasionally receive only cursory reply, and sometimes no reply at all. This had happened to individuals who had written to the County about Bixhead. Accordingly, contact was made by the Society with the elected County Councillor who chaired the relevant County committee. The Society's representations were sent to the County Surveyor's Department and a copy was also sent to this chairman, who had knowledge about it. At this stage we were told that no proposals had been formulated for Bixhead although it was described as one of a number of possible sites under investigation. The Society was invited to meet with GCC to discuss matters. From another source we learnt that a sizeable sum had already been budgetted by GCC for work at Bixhead.

The Society considered that the attitude of the Forestry Commission to Bixhead would be a critical factor, and that the Commission

was frequently in the difficult position of trying to accommodate parties with opposite interests. A well-argued case was again needed which drew attention to the wide implications of conservation for Bixhead and its value as an educational and recreational resource. Copies of the representations were also sent to H M Verderers on account of their interest in the vert (or green) of the Forest. Subsequently the Verderers took an active (and most welcome) interest in the issue. In due course the Forestry Commission proposed a site meeting with local historians of their choice and representatives from the Society, if required.

In the meantime a personal enquiry was to be made to Forest of Dean Stone Firms Ltd to ascertain their attitude, but this became very clear in late September before our representative had reached them. The Company had been surprised and alarmed by the appearance of County Council surveyors busily at work in their quarries. No permission for this work had been sought nor any explanation given. The company asked them to leave and refused permission for the survey work to be completed. At the request of the County Surveyor the venue for the meeting between his staff and the Society was changed from Bixhead to Gloucester!

Ian Parsons, Ray Wilson and the present author represented the Society at this meeting. Across the table was Mr Norwood, the GCC refuse chief, and we were delighted to find the County Archaeologist also in attendance. Mr Norwood outlined the search for a new site and explained that Bixhead had some disadvantages, especially its life which was estimated to be about 6-7 years. He gave us the impression that it was far from an ideal refuse site but asked more than once if "co-existence" between industrial heritage and refuse was possible. We drew attention to the main features deserving conservation and presented him with a copy of our detailed report to read at his leisure. In it we mentioned the existence of the Greater Horseshoe bats living contentedly underground at Bixhead.

Later in the month the Forestry Commission's meeting took place. The Commission fielded a strong team, with Mr D Langford, District Forester for Dean and Three Counties, Mr M Thornycroft, their Land Agent, Mr A E Howell, the Deputy Gaveller, and Mr J Anderson, Head Forester in charge of amenity and recreation. The two local historians invited to attend by the Commission were Stan Coates and the present author. Dr C Hart, the Senior Verderer, attended in that role and had also kindly undertaken to represent the Society. The discussions were wide-ranging and the Commission told us that they had also independently consulted the County Archaeologist and the Nature Conservancy Council. The party then moved to Bixhead where the sun shone and the autumn tints glowed. A complete tour was made and the sites examined. Subsequently the Commission determined its attitude to the area. In late November the appropriate committee of the County Council undertook to seek an alternative site to Bixhead for refuse.

At the present time it appears that the threat has been averted and a most worthwile result has been obtained by the Society. The successful outcome to the campaign lies chiefly with the quality of the industrial landscape at Bixhead and the other features of the area, including the wildlife. In addition the presentation of a well-argued case at an early stage had the advantage of being heard before any deeply entrenched positions had been taken up. Another important factor was the combined effort of well-informed Society members and Officers who were unstinting in their support and in the work they undertook. The lack of any media coverage was also of value in this particular instance.

Looking to the future - what should be done? Do we sit back until another threat emerges and in the meantime accept the gradual deterioration of the industrial features such as the tramroad and various mine entrances? I think not. My own feeling is that the Society should propose active conservation work at the Union Pit, and on the portals of the Bixslade High and Low Levels; making them sound again and perhaps trying to find the stolen dated keystones or making and inserting replicas. In addition, positive management is required to maintain and improve still further the value of the surviving heritage for its own sake and for posterity. Bixhead and Bixslade are an important educational and tourist resource. Management should perhaps address such matters of interpretation, the encouragement of wildlife and also public safety.

THE INDUSTRIAL SITES

Quarries

Bixhead Quarries.

These scenic and extensive quarries, together with their tips, occupy an area of 0.3 sq Km. The most northerly quarry is Pullen's, so named from its previous owners who worked Blue Pennant from it during thie century. The quarry is a deep pit which formerly had an extensive pool at its base, the scene of a tragic drowning of two young children in the 1970s. The 1878 plan shows that Pullen's Quarry had not been begun at that date.

The next quarry lies to the east of Pullen's Quarry and the ascending curve by which the tramroad reached the quarry heads. Its main face is again to the north and at its base are underground workings from which Blue Pennant was won. Some infilling has taken place since the last working. Although now inactive, the quarry worked up to the 1960s and the lease is held by Forest of Dean Stone Firms Ltd. It has many features of interest, including a crane and several crane bases together with various buildings including a compressor house. Also of note are the lookout ledges from where boys directed the crane drivers, and the fencing made up from old saw blades, hauling ropes and tramplates.

Further east lies the present active quarry worked by Forest of Dean Stone Firms, who extract blocks for sawing and other material for walling stones. The method of working the stone blocks is by drilling and splitting with wedges. The quarry and its associated stoneworks at Cannop Ponds employ around 30 workers. To the south of all three quarries are extensive tips, some occupying former quarries, with some Napoleonic oak, beech and chestnut growing here and there amongst them.

The Award of Quarries (Sopwith, 1859) includes a map of Bixhead in which the quarry faces are very different from those shown on the 1878 plan. Furthermore, they are divided into no fewer than 13 ownerships of between 10 and 80 yds breadth. This Award, like the Award for Coal and Iron Mines before it, was based on what the Commissioners judged to be valid claims by free quarrymen, free miners, and on leases from them.

Messrs Yarworth of Coleford were awarded three breadths at Bixhead of 30, 80 and 40 yds respectively, apparently on the same quarry face but separated from each other by awards to other

parties. The small breadths of these stone gales and the multiplicity of ownerships may thrown some light on the development of the industry in former centuries. Do they reflect an origin from what were once small and individual quarries? In the years following the Award it is likely that amalgamations took place by sales and leases in order to develop the large quarry shown on the plan of 1878.

Spion Kop Quarry.

This is found at NGR SO 597104 south of both Bixhead and the tramway on the further flank of the slade. There was no award here in 1859 and the quarry does not appear on the 1878 plan. The name stems from the Zulu wars of the late 19th century. At the present time Spion Kop is hidden by trees, but is a large and impressive abandoned quarry. It can be reached by following the tramroad branch from near Bixslade High Level.

Mine Train Quarry.

This third major quarry in Bixslade lies on the north side of the tramroad at NGR SO 602102, about 0.5 Km below Bixhead Quarries. In 1859 its name was Bixslade Mine Quarries but whether this arises from the nearby Bixslade Low Level or the train of iron ore which is found in the quarry is uncertain. In 1859 six breadths are depicted but only three were numbered and awarded.

On account of the iron-ore which occupies joints within the stone, the latter has a fine red and red-brown colouration on joint faces. In 1899 David and Sand supplied stone from here for tooled ashlar work within the rooms of Cardiff Castle (Hart, 1971). Mine Train stone also appears to have been used in the Speech House, both in the original and in the later parts. At the present time the quarry is intermittently active.

Stone works.

These stand east of the B 4234 road at the outfall of the slade at SO 099608. They were established around 1900 by the firm of E Turner for the purpose of sawing and dressing stone. Other stoneworks existed at Cannop and at Parkend. In 1910 Turner's works and quarries were taken over and worked by United Stone Firms up to 1926 when the latter company had financial problems. In 1939 the works were acquired by the Scott-Russell family who continue to run them as Forest of Dean Stone Firms Ltd. Pope et al. (1985) include several fine early photographs.

Cannop Ponds.

These were formed in 1825 by the Parkend Ironworks by placing a dam alongside the embankment which carried the Bixslade tramroad over the Cannop Brook. The ironworks were partially waterpower and used a 56 ft-diameter wheel. The leat is traceable on the east of the brook.

The Bixslade branch tramroad.

Extensive remains of the tramroad are visible in many places. They include long stretches of stone sleeper blocks with occasional small patches of cobbling intact. Wharves and subbranches are clearly visible. The 1878 plan shows much detail whilst Parr (1963), Hart (1971) and Pope et al. (1985) have published pictures of traffic on the line.

THE COLLIERIES

At first sight the many disused coal shafts and levels are apt to confuse the onlooker whilst the present-day size and condition of the openings gives little clue to their former importance and output. The area has, however, been systematically mined from around 1800 onwards and an appreciation of the geology greatly aids interpretation. Figure 3 shows the coal seams and their relation to the surface together with the main openings made to them. Figure 4 shows the area in plan view as surveyed by Sopwith in 1835 and includes some underground detail. Calculation suggests that about 5 million tons of coal were available and arranged in a highly workable manner.

In the Forest of Dean the minerals belonged to the free miners and were allotted to individuals by the working of their 'staked' claims. Such claims were called 'gales' and their boundaries were dictated by drainage. Thus a free miner driving a level from a given point claimed the gale of the mineral his level would drain. In practice, lateral boundaries sometimes had to be fixed by surface marks.

These facts, coupled with the scant information about early mining in Bixslade, give some clue to the chronology. For example, had Miles Level been the first level driven the whole of the coal up to The Ridge would have been drained and one large gale created. However, it is known that Mushet and Halford were developing Bixslade in 1809 as gale owners or lessees from James and Peter Teague. Furthermore, Bixslade High Level had a stone dated 1826 in its portal. Thus Bixslade Low Level was probably the scene of Mushet's and Halford's works of 1809 and the first manor development of the area, a thesis supported by the keystone date of 1810. Sopwith (1841) includes other useful information. Miles Level was leased to James and Robert Morrell of Oxford by Thomas Miles in 1815, whilst Union Pit was leased to the Morrells by George Powell in 1824. The the two adjacent gales came into a single ownership.

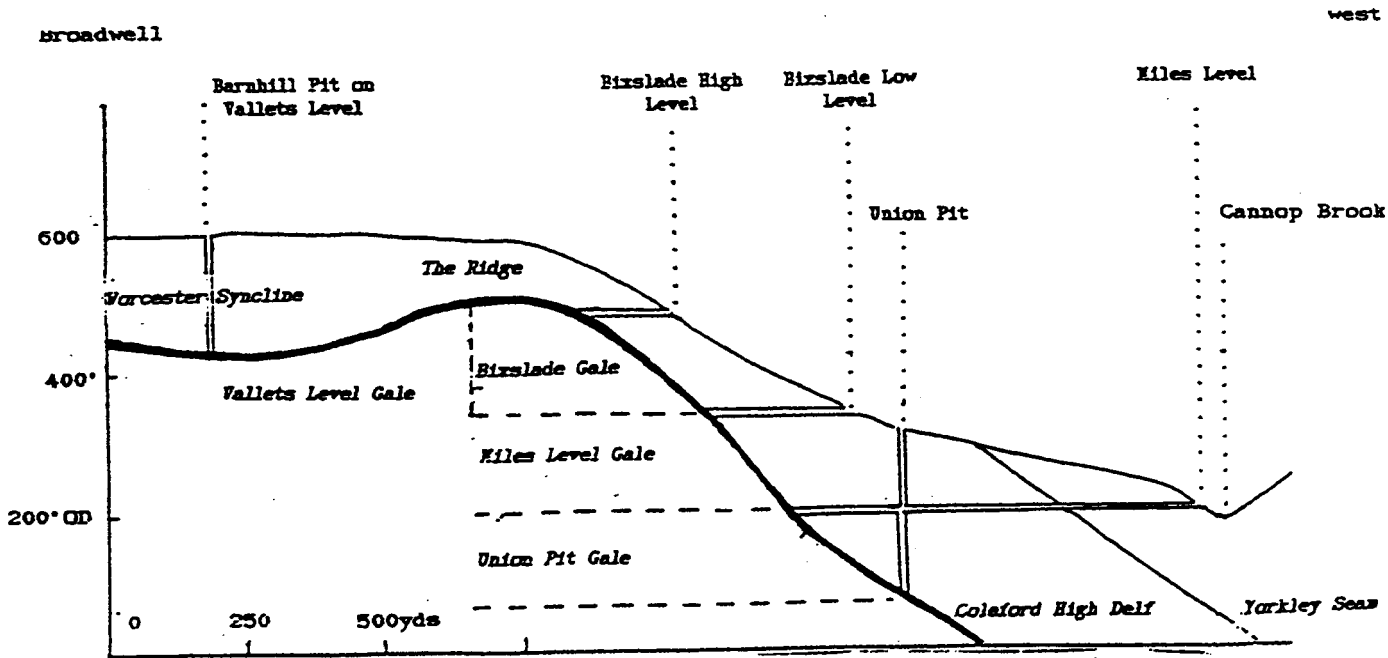
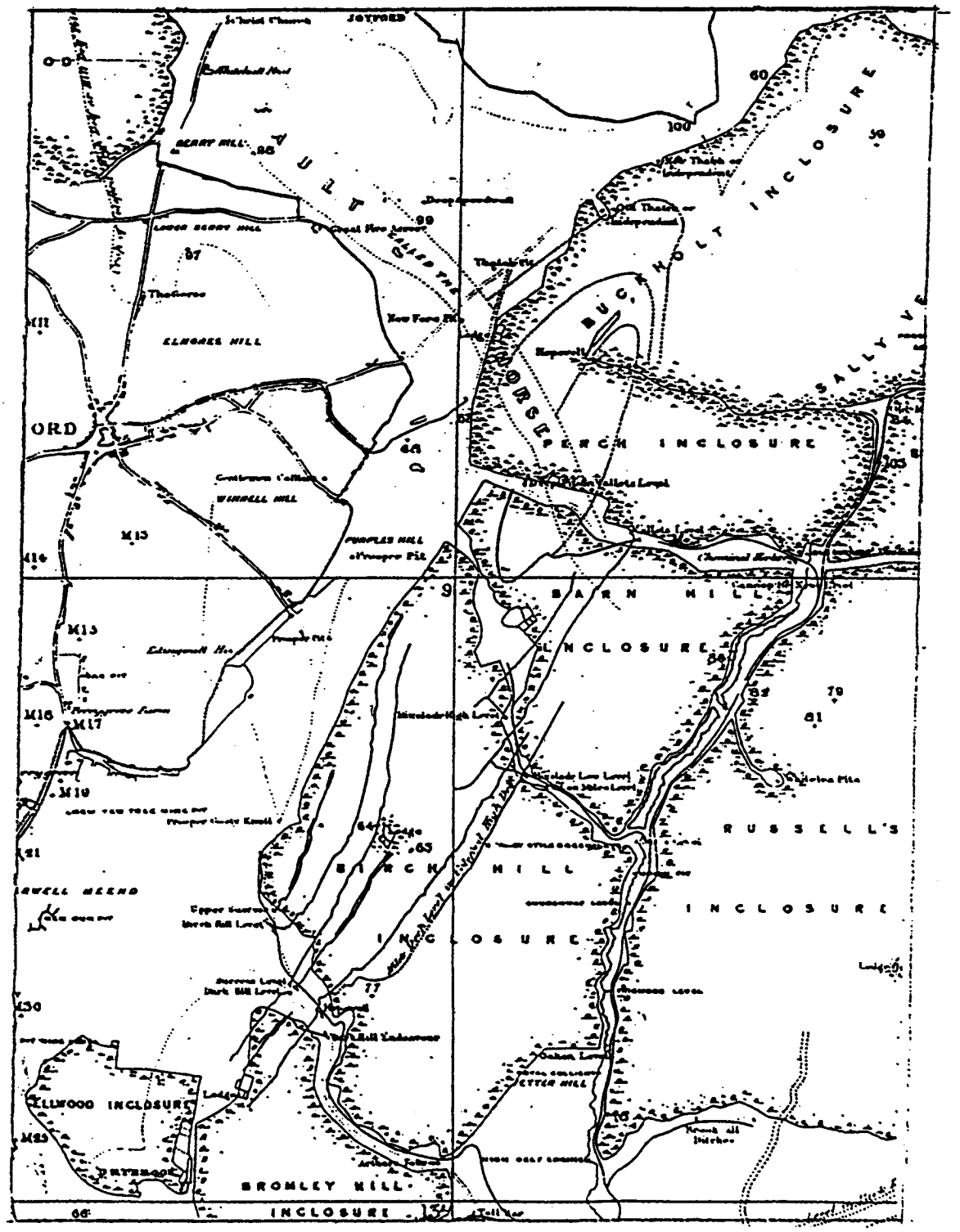


Fig. 3. Schematic section from Broadwell through Bixslade to the Cannop Brook, showing the working of the Coleford High Delf. The vertical scale is exaggerated.

Fig. 4. Detail from Sopwith's Index Plan, 1835.

The course of Miles Level from its portal to the coal is not shown. Sopwith's large scale plans of 1835 show more extensive workings beneath ground.



Miles Level.

The portal is extant at SO 60700995, and will be found between the Stoneworks and the Brook. Its altitude is 190 ft OD and its length about 750 yds cross measures. The level is open but full of water impounded to supply the stone saws. The cross section is much smaller than expected, possibly an economy factor imposed by the length to be driven. On the surface there is no sign of the dirt mound or any surface structures. 100 yds south is the collapsed portal of another level which heads towards Nagshead Plantation. This was depicted on Sopwith's plan of 1835, but its purpose is unknown.

The driving of a level of 750 yds length in the period 1810-20 was a major undertaking and one which would require considerable capital. Ventilation would be problematical and be aided by air shafts along the level. The collapsed cone of such a shaft is to be seen at SO 60431000. At a distance of about 250 yds from the portal, Miles Level intersected the Yorkley seam and production from it may have offest some of the development costs. The air shaft just mentioned may have been strategically sited for this purpose. Production from Miles Level probably ceased before 1840, the level being used for drainage and air for the combined operation with the Union Pit. Exploration by cavers during the drought of 1976 penetrated Miles Level to the Yorkley seam workings. Such an exploration today is dangerous and should not be attempted.

Union Pit.

This shaft was sunk from the floor of the slade to the Coleford High Delf at SO 60291000. Its dirt mounds extend down valley for over 100 yards although these may also include dirt from Bixslade Low Level. The shaft was sunk to a depth of 120 ft to Miles Level which it would use for mutual ventilation and also as an outflow for its pumped water. From Miles Level it was sunk a further 143 ft to reach the coal. From this point levels were driven in, or close to the coal for considerable distances north and south. To the south it extended over a distance of a mile beneath Nagshead Plantation to the Fetterhill Valley and was known as Miles Deep Level. A similar level driven from Miles Level lay in the coal at an altitude of about 120 ft above it and extended even further to reach beneath Ellwood Lodge.

To the north of the pit levels reached towards Howlers Slade where Cannop Engine Pit and Union Pit were sunk to similar horizons, although apparently as a separate gale, in 1841. Probably amalgamation took place in later years.

At Bixslade in 1841 the Union Pit belonged to the Morrells, worked with "a small high pressure steam engine on pit" and produced 8,400 tons annually (Hart, 1971). By 1902 the colliery belonged to the Parkend Deep Navigation Colliery Co who were in dispute with the Turners about the placing of their stoneworks above Miles Level (Pope et al, 1985).

On the 4th September 1902 an inburst of water from old workings of an adjacent gale swept through the Union Pit workings and submerged them. This disaster drowned four colliers whilst two others were trapped by water for 120 hours before rescue. Dean Heritage Museum has a contemporary photograph showing the rescuers and rescued at the pit head.

On the surface today is the shaft, infilled to within a few feet of the surface. The masonry ring is broken and unless conserved, eventual collapse will destroy it. Beneath the undergrowth are low masonry foundations of the pit head buildings. Excavation and consolidation here would retrieve an interesting site for posterity.

Bixslade Low Level.

The portal of the level is opposite the entrance to Mine Train Quarry at SO 60171005 and at an altitude of 370 ft OD. The dated keystone (1810) was stolen around 1976. The level has almost been obliterated by spoil from the quarry. The gale existed before 1809 and operations by Halford and David Mushet began that year. Their intention was to reach and work the Coleford High Delf and also to drive the level on cross measures to reach the Trenchard or Low Delf which Mushet expected to locate from his geological knowledge.

Bixslade Low Level was begun in September 1809, by manual labour using gunpowder. At one stage Derbyshire miners were introduced, but these were attacked by foresters. A distance of 230-250 yds, cross measures, was driven to the Coleford High Delf which was reached probably in 1810, some years before the tramroad arrived in the slade. By 1813 Mushet and Halford were in financial difficulties and endeavouring to sell the colliery. Some part of it may eventually have been sold as David Mushet was engaged in lawsuits over Bixslade in 1824. These early details have already been published (Standing, 1981 and 1987). In 1835 David Mushet was awarded the whole of the Bixslade gale.

On reaching the Coleford High Delf, levels were driven along the strike in or close to the coal. To the north the level reached 1500 yds by 1835 (with air shafts at NGR SO 60001027, 60081083 and 60091110) and ran beneath Howlers Slade where it connected to the surface by an air shaft. It may have merged with Mushet's Old Furnace Level driven from Howlers Slade; the 6 inch geological map shows it as continuous and proceeding north another 3 miles almost to Mirey Stock. There were other air shafts along its course. The Horse, an ancient washout of the seam, was crossed. To the south-west the level ran for about 400 yds, its extremity curving slightly around the end of The Ridge in order to keep a level course in the coal. In 1841, 9,600 tons of coal were produced annually, rather less than might be expected. Was development work in hand, or exhaustion approaching? The OS 25 inch map shows the level disused in 1878.

In the mid-1970s the Bounds brothers, freeminers of Ellwood, sank a drift from the side of the tramroad at NGR 60051020. This wound directly across the tramroad and motor traffic ascending the slade had to wait if the haulage was in motion. The Bound's Bixslade drift descended steeply for about 40 yds when it entered the old workings of the Bixslade Low Level. These were open and roomy and although greatly worked, sufficient coal remained in pillars to keep the drift active for several years. In places the coal was 10 ft thick, a phenomenon probably related to the washout called The Low. Those who can recall this venture may remember a tall, white-haired collier who ran the haulage and surface. This was Will Evans who started work with the Bounds family in their pits at the age of 13, and stayed with them until he retired at the age of 78, a total of 65 years of continuous work in Forest small mines.

Bixslade High Level.

The portal is on the west side of the tramroad, at NGR SO 59951030. Close by are the remains of at least three modern drifts to the coal of the Low Level and dating from the 1960s and '70s. There are also two air shafts on the Low Level at this point. The more western of the two is extant and until 1975 a primitive hand windlass surmounted it. The shaft nearest the tramroad was descended by cavers to a depth of 84 ft and unsound workings observed.

The keystone of the portal bore the date 1826, suggesting that Mushet made a start here after the lawsuits were resolved. The stone disappeared about 1976. Just within the level on the right is the firebox of a ventilation furnace and a chimney was extant in the 1950s. Water draining from the level is conducted by a well-made stone gutter.

The level was the shortest in the slade running cross measures for 125 yds to the Coleford High Delf. Levels were driven in the coal 900 yds north by 1835, thus draining a large area of coal up-dip to the crest of The Ridge. To the south the workings curved markedly around the end of The Ridge. In 1841 Mushet was producing 21,000 tons annually and was the third largest producer in Dean that year. By 1878 the level was disused.

Since then numerous reworkings have taken place by free miners including members of the Jones family, who worked via the level. In the early 1970s George Harvey of Coleford used the quarry at NGR SO 59951050 to provide a shorter drift into the old works, and ran a successful enterprise mining pillars for several years. The drift entrance, haulage platform and coal bank survive. Later still, Ray Ashley working single handed extracted small coal from the gob of the old works for a period of around 2 years.

Vallets Level.

Much of the Coleford High Delf under Bixhead and Broadwell was won by Vallets Level which was driven from Howlers Slade on the north side of The Ridge. In this way access via coal (and thus profitable) was made to that portion of the Bixslade coal seams beyond The Ridge. In theory, these might have been won from Bixslade by driving the Low Level cross measures on through The Ridge to reach the coal on its further side. Mushet's plans in 1809 to win Trenchard from the Low Level may have been the first stage in such a development.

The only pit at Bixhead on Vallets Level is Barnhill Pit, at NGR SO 592110. Little survives except low dirt mounds.

Collieries of the Yorkley Coal.

The thinner Yorkley coal was never as profitable as the Coleford High Delf and seems to have been little worked at Bixslade, apart from Miles Level, until the present century. The Yorkley outcrops in the base of the slade at NGR SO 60351003, about 50 yds below Union Pit. From there it sweeps obliquely up the valley sides to the north-west and south-west. A line of collapsed drift entrances and shallow pits can be traced. One pit opened in 1985 in the valley floor at NGR SO 60350998 and is still at work. Here the coal seam is between 2 and 3 ft thick, but is overlain by a soft clod roof up to 4 ft thick. It is frequently impossible to support this clod after removing the coal, and thus its working is arduous.

On the north side of the tramroad at NGR SO 60351004 Baldwin's Level worked the Yorkley along the strike to the north around 1926 and the area was reworked by Gilbert Kear around 1970. To the north-west of this and above Mine Train Quarry, Gwilliams' Level worked in similar manner around 1916 and appears to have connected with Hale and Wintel's Level at NGR SO 602102. This in turn worked northwards during 1942-44, probably winning coal of low quality which would have been unsaleable in 1916. Further west the Yorkley outlier in Barnhill Plantation also attracted attention between 1940 and 1960. South of the tramroad, outcrop workings are traceable through Nagshead Plantation.

Iron-ore Pits.

There are two obvious sites. The first is at Mine Train Quarry where holes are to be seen in the quarry face. Here wide joint spaces contained iron-ore which was mined by classical stopes (Court and Standing, 1975).

Close to Bixhead Quarry at NGR SO 599608, west of the forest ride are the remains of Parry's Slope and Pit, close by outcrop working to the Yorkley Coal. The bright red spoil helps to distinguish the two. It operated between 1925 and 1929. A sizeable heap of ore and another of red ochre can be seen.

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Abbreviations used in the text.

GSIA - Gloucestershire Society for Industrial Archaeology.
GTNC - Gloucestershire Trust for Nature Conservation.
NCC - Nature Conservancy Council.
RFDCC - Royal Forest of Dean Caving Club.

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