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APOLOGY

We very much regret the great delay in the appearance of this issue of the Bulletin. This is due to difficulties in getting it produced at a reasonable price. Because of this the next issue, completing the four for which subscribers have paid, will be the last bulletin to be produced by the Industrial Archaeology panel of CBA 9.

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OXFORD

COMMENT

From D.Watts, Truro :-

Nationally, there must be many windmills which are better and could be repaired at less cost than that at Lacey Green (Bulletin 15, January 1971, page 9). If the millwork is a good example of its date and type, could this not be preserved separately at a museum without wasting time and money in restoring the structure?

From Mr P.I.King, Chief Archivist, Northamptonshire Record Office :-

Mr Dix's article on Hardingstone Ironstone Quarries (Bulletin 14, October 1970) is very interesting. I cannot, however agree -page 9, paragraph 6, that the Dean and Chapter quarries were these quarries. I don't believe the Dean and Chapter ever owned any property in Northampton and their estates were entirely separate from those of:-

- (a) the diocese or Bishop of Peterborough
- and (b) parish church property such as the glebe.

I think that the Dean and Chapter quarries, Northampton must refer to those they had at Irthlingborough or Woodford. The Dean and Chapter's records are here, but as a matter of interest, their estates were managed in the 1860's by the Ecclesiastical Commissioners.

From George Freeston, Blisworth:-

Regarding Richard O'Rourke's useful article on Northamptonshire Brickyards in Bulletin 13 (July 1970) during the current period of demolition of many 19th century buildings, I have made every effort of searching for named used bricks. The following bricks have been found during the past six years in and around Blisworth :-

- (a) An early 19th century brick marked by impress G.SAVAGE
- (b) Six "six-sided" cream coloured bricks with a deep oval "frog". The vaulted roof of the Blisworth Station subway was constructed with this type of brick, forming a most attractive pattern. These bricks are locally attributed to a design by Robert Stephenson.
- (c) Two late 16th century bricks with the oval frog impressed BLISWORTH BRICK CO. The Blisworth Brick and Tile Co had a fine square brick chimney with the wording "Blisworth Brick and Tile Co" built into the side facing the railway
- (d) From a ploughed up tunnel shaft mound on Blisworth Hill have come numerous early bricks of varying sizes . . . squares, wedge etc presumably from the tunnel building.

From James Barnes report of May 6th 1802 :-
"Three brick kilns at Blisworth and one at Stoke Bruerne belonging to the Canal Company . . .
Three brick kilns at Stoke Bruerne the property of Jos Ludlam.
Clay Mills are also mentioned in this report, together with a steam engine for the grinding of mortar (sic). Bricks were priced at 25/6 per thousand. Note that on June 29th 1804 Jos Ludlam was confined to the goal at Northampton as a bankrupt.

From the Editor, regarding Roger Wansley's remarks about tape-recording under COMMENT in Bulletin 15 (January 1971) the following are known to have done some work in this field :-

- George Freeston, Blisworth -- recording experiences of old people at Blisworth
- John Evans, Northampton -- recording people who knew the Northampton-Peterborough Railway
- Godfrey Stanner, Northampton -- recording workers at the former Islip Iron Company.

A BRIEF SURVEY OF BRICKWORK SITES IN WEST BERKSHIRE

by Fred Roberts

Listing the Sites

Excluding watermills, the brick and tile industry probably provides the greatest number of obsolete industrial sites in West Berkshire. In the present context, "West Berkshire" may be taken to cover the area west of the Reading Borough boundary and south of the Vale of the White Horse. The map references of the sites are listed on page 5, with the appropriate titles of the works where known. The list of sites was compiled from an inspection of the First Edition OS Sheets in the British Museum plus a survey of later editions made available by local council offices. All of the sites have been visited and all examined where access could be obtained. It is interesting to note that in some cases, sites marked on the First Edition sheets disappeared from later editions and the reverse occurred in other cases. There were certain places where no 'works' was specifically indicated, but the use of titles such as "Kiln Farm" or "Clay Pit Lane" appeared which implied that bricks, tiles or pottery were manufactured locally at some time in history; such sites have not been included in the list on page 5 in the absence of any positive evidence of a brickyard or works. Nevertheless, it has not been uncommon in history for local farms to work clay pits, prepare and fire bricks in stacks, or crude kilns for a few generations and then let the practice cease. In a similar fashion, some farmers have worked lime pits and operated a lime-kiln. (In Northern England, the latter practice was very prevalent at one time when areas of moorland were to be limed and taken into cultivation - 'intake land'). If a comprehensive list of all places where bricks or tiles had been fired in a given county were ever to be attempted this would prove to be a daunting task, because it would have to include the countless number of places where bricks were made on-site during the building of small groups of cottages or even individual farm-houses or single dwellings! In short, the list given here cannot be comprehensive but it does show the main centres where brick and tile works exploited the Reading Beds and London Clay in West Berkshire over the last 100 - 150 years.

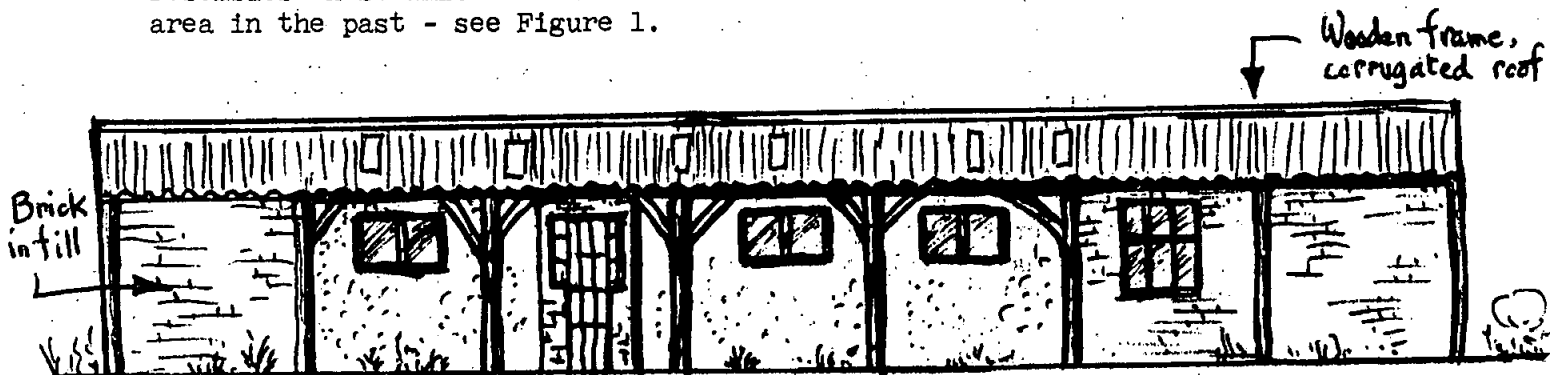
It is possible to place the twenty sites listed into two groups: A, those where no traces of the original workings or buildings remain and B, those where inspection of the sites in 1969 - 70 revealed remains, however scanty, of former clay-based industry. The sites have been allocated numbers from 1 to 20 inclusive, moving across the map approximately from west to east.

Group A

Of this group of thirteen sites, the majority of them were clearly marked as "brick and tile works" on the 1877 Survey maps. A typical layout would generally show buildings surrounded by clay pits, often a pond (water supply or flooded working), a well, and sometimes a chalk pit. The site layout frequently included a series of long, narrow buildings, perhaps 12 feet by 100 feet (4 x 30 m); these could well have been tile making and drying sheds. The kiln or kilns were indicated by a small circle, square or rectangle, depending upon type. Recent visits have revealed in general, that these country brickworks sites are now marked by irregularities in the ground, the old clay pits sometimes a stagnant pond. The sites are generally completely covered with trees and undergrowth; numbers 1, 6, 7, 12, and 14 are typical. The occupants of a house immediately adjacent to site 1 produced a couple of samples of brick, recovered from the garden, which they claim are Roman in origin. . . . Site 5 now has a young plantation; some broken bricks were found in the undergrowth. Site 10 is wasteland, covered with grass and patches of sand. A local baker gave the author a fine specimen of oven brick, taken from a stock which he had purchased from site 12 brickworks when this was a fully active site about 15 years ago: now a copse of small trees and dense undergrowth surround a stagnant pond. The occupants of the country bungalow now on site 18 said they had never heard of a brick kiln operating on their land and added that they had never found any traces of such activity on their plot. Urban sites such as 8, 9, 16 are now covered by modern housing estates. Site 17 is used as a refuse tip by a local authority but the clay seams can, however, be identified.

Group B

Seven sites still show evidence, albeit scanty in certain cases, of having been used in the past for brick and/or tile manufacture. Of these, four sites are used for other purposes: site 2 is occupied by farm buildings some of which could just have been used for brick or tile manufacture but adjacent is a row of brick-built dwellings, now fallen into disrepair, that might conceivably have been built for workers on the original site which was very extensive according to the 1877 map. Site 20 now carries a small plastic factory and here the staff social club is clearly a very old building which in design resembles those which the author has seen in use for tile manufacture or storage in the area in the past - see Figure 1.



WORKS SOCIAL CLUB - UPPER BASILDON. (Site 20)

Figure 1

Site 11 is used by a heavy haulage maintenance firm. Here, traces of underground flues and the base of a chimney stack can be identified. One of the stores buildings could well have been an office or store during brickyard days. Similarly site 13 is used as an agricultural engineering depot and one chimney stack which supplied draft to a kiln has not yet been demolished. The clay pit and sand pit areas were very extensive here and are clearly in evidence. The main office and general stores are housed in what seem to have been tile-making and drying sheds. Constructed soundly of brick, each building has a short stack at the end. Two derelict, somewhat older buildings 50ft x 12ft, more rural in character and with thatched roofs, are also located on site 13. They may well have been built and used during brick-manufacturing days as they are shown on the 1912 OS map.



DERELICT SHED - HERMITAGE KILNS SITE (Site 13)

Figure 2

Although this site does not appear on the 1877 OS map, local opinion is that bricks were made here when the railway opened in 1882.

This leaves three sites, all of which are derelict and not used, and provide interesting field evidence of brick and tile making activities and about which some further information has been obtained. These are :-

Site 4 Wickham Kilns

Site 19 Frilsham Brick and Tile Works

Site 15 Pinewood Estate Brick and Tile Co. (Hermitage)

The last of these proved so extensive in character and so much remained on site to record, that a detailed study has been carried out to be reported in a separate paper.

Site 4, Wickham Kilns. This extensive site was shown clearly on the 1877 and 1912 OS editions. A sketch plan of the area is provided at figure 3 since the site may be considered a classical example of the small rural West Berkshire brickworks operating in the 19th and early 20th century.

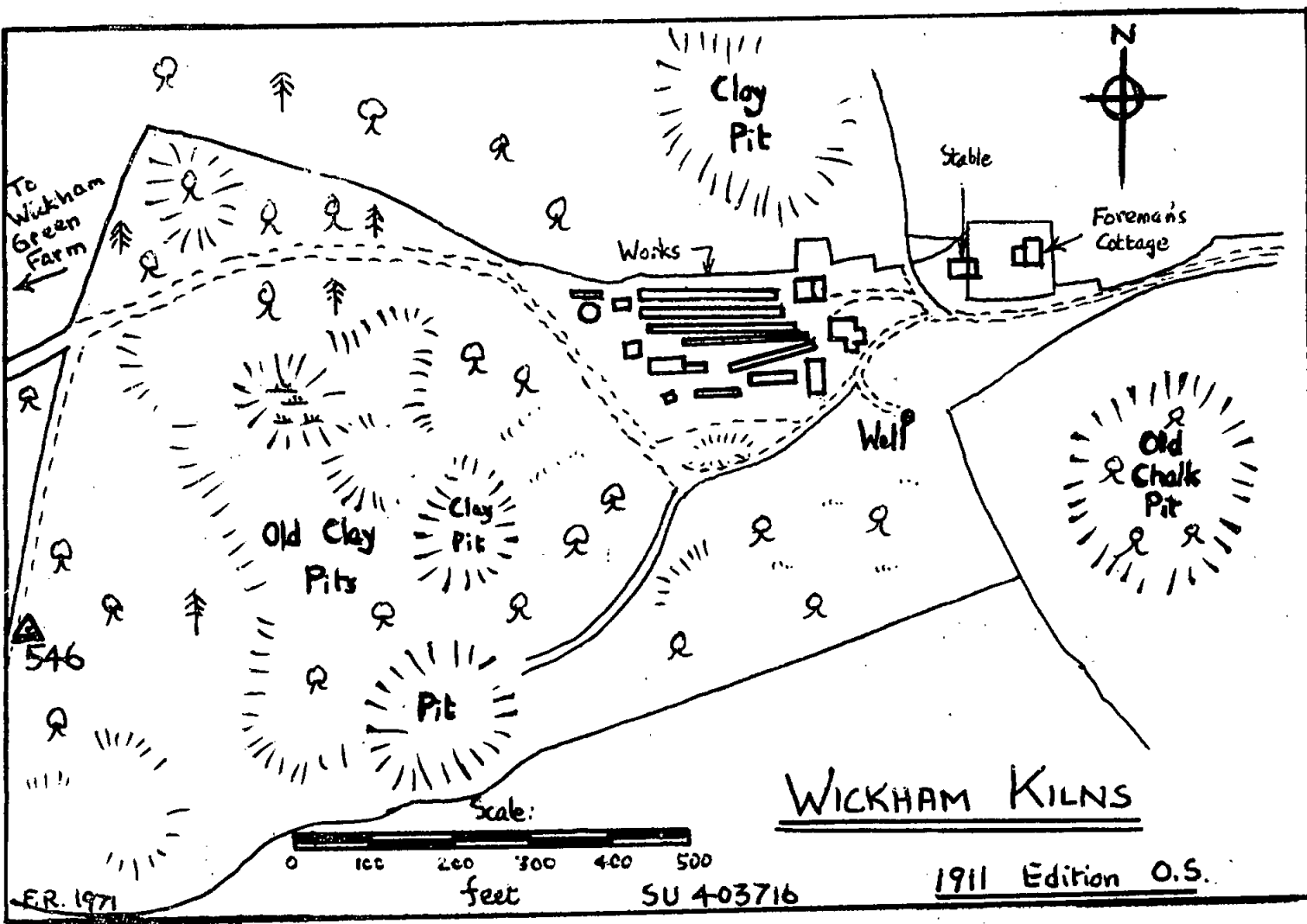
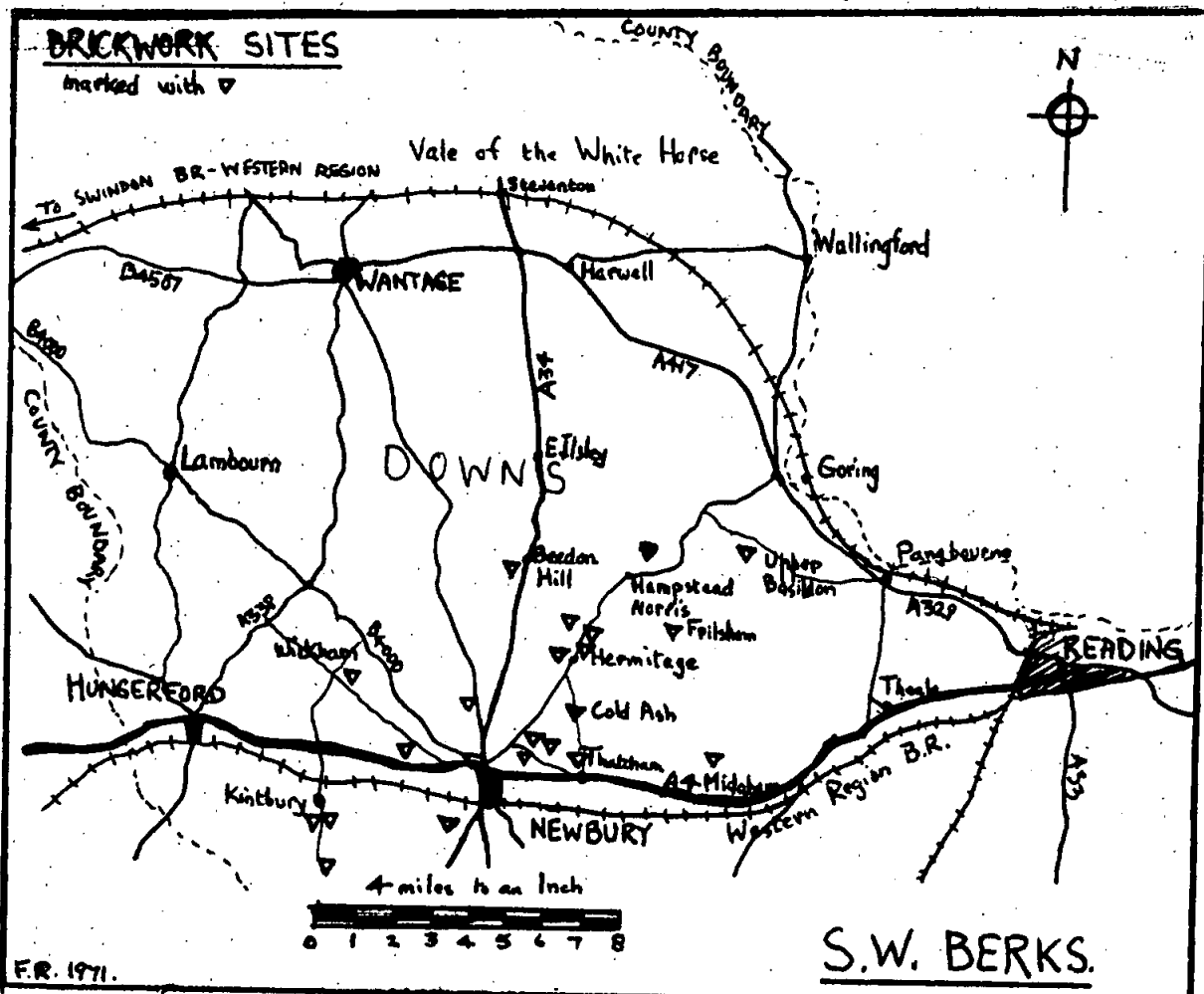


Figure 3

Some information was obtained from the late foreman of Site 15, who lived in the foreman's cottage at Wickham Kilns whilst a boy. He stated that the works, located on an isolated part of the Welford Estate in the Lambourn Valley, was owned by one Major Hubbold during the period roughly 1900 - 1914. During this time he remembers seeing the horse-driven pug mill in action. A visit to the site in 1970 proved interesting. The chalk pit and clay pits were very much in evidence. The actual works area was found to be extensively covered with undergrowth, but the foundations of the very long buildings (about 150 ft) shown on the above sketch-plan, were discovered in places. Also the ruins of a brick kiln were found just to the east of the long buildings; the only evidence for this kiln was a single, small, arched fire-hole, and also a few bricks with a heavily glazed face due to constant exposure to high temperatures. The original foreman's cottage is in use as a week-end residence and the garage near the cottage was originally the stable for the horse(s) employed at the site.

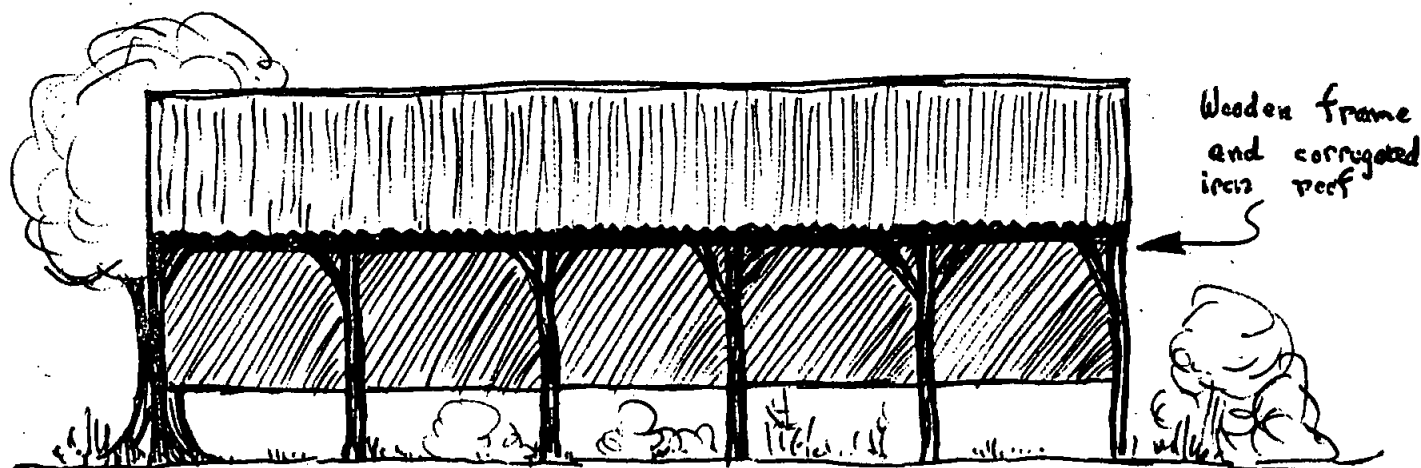
LIST OF BRICKWORK SITES IN WEST BERKSHIRE

Grid Ref.	Site Title	Notes
1. SU 386661	Kintbury (West Site)	Shown on 1878 Survey. No trace remains
2. SU 387662	Kintbury (East Site)	Shown on 1878 Survey. Some remains
3. SU 390643	Warren Kiln, Inkpen	Shown on 1877 Survey. No trace remains
4. SU 403717	Wickham Kilns	Shown on 1877 and 1911 Survey. Some remains
5. SU 432682	Stockcross B and Tile Works	Shown on 1877 Survey. No trace remains
6. SU 445650	Foxgrove (Caken Copse) Site	Shown on 1877 Survey. No trace remains
7. SU 465696	Donnington B and Tile Works	Shown on 1877 Survey. No trace remains
8. SU 486681	(Shaw Kilns B and T Works (W)	Shown on 1933 Survey. No trace remains
9. ditto	(Clayhill Brickyard (E)	" " " " "
10. SU 488773	Beedon Brick and Tile Works	Shown on 1877 Survey. No trace remains
11. SU 491722	Curridge Brickworks	Shown on 1933 Survey. Some remains
12. SU 502718	Longlane Brickyard (Red Shuter Hill)	On 1912 and 1933 Surveys. No trace remains
13. SU 510731	Hermitage Brickworks	Shown on 1912 Survey. Some remains
14. SU 501737	Kiln Farm B and T Works	On 1877 Survey. No trace remains
15. SU 512737	Pinewood Estate B and T (Hermitage)	First appears on 1912 Survey, extensively developed on 1933 Ed.
16. SU 516678	Thatcham Brickworks (Park La.)	On 1912 Edition, no trace remains
17. SU 539773	Hampstead Norris B and T Works	On 1877 Survey, no trace remains
18. SU 549677	Midgham Brick Kiln	Shown on 1877 Survey. No trace remains
19. SU 552727	Frilsham Kilns	Shown on 1877 Survey. Some remains
20. SU 586764	Upper Basildon Brick Yard	Extensive brickworks on 1877 Survey. Some remains



Site 19, Frilsham Brick and Tile Works. This site is owned by the keeper of the adjacent inn. It is said to have belonged to his family for 'several generations' but essentially ceased operations in 1939 although one firing was carried out in 1945. It was a much smaller works than Wickham. It had a horse-operated pug mill and also a pottery kiln. In 1970 most of the buildings were found to contain large piles of rubble owing to the collapse of walls and fall-in of roofs and for this reason the pot kiln could not be identified. However, the remains of a Scotch kiln were not completely covered with undergrowth: this was 18 feet by 20 feet and the three flues at the south end were clearly discernible from outside. The stoking area was covered with a corrugated roof supported by wooden posts. The old brick shed is still intact and the front elevation is shown in figure 4.

(No proper survey was made of this site as the owner said he was busy but would not leave the author to make an unaccompanied inspection - and did not welcome a return visit)



OLD BRICK STORE - FRILSHAM KILNS. (Site 19)

Figure 4

Concluding Note

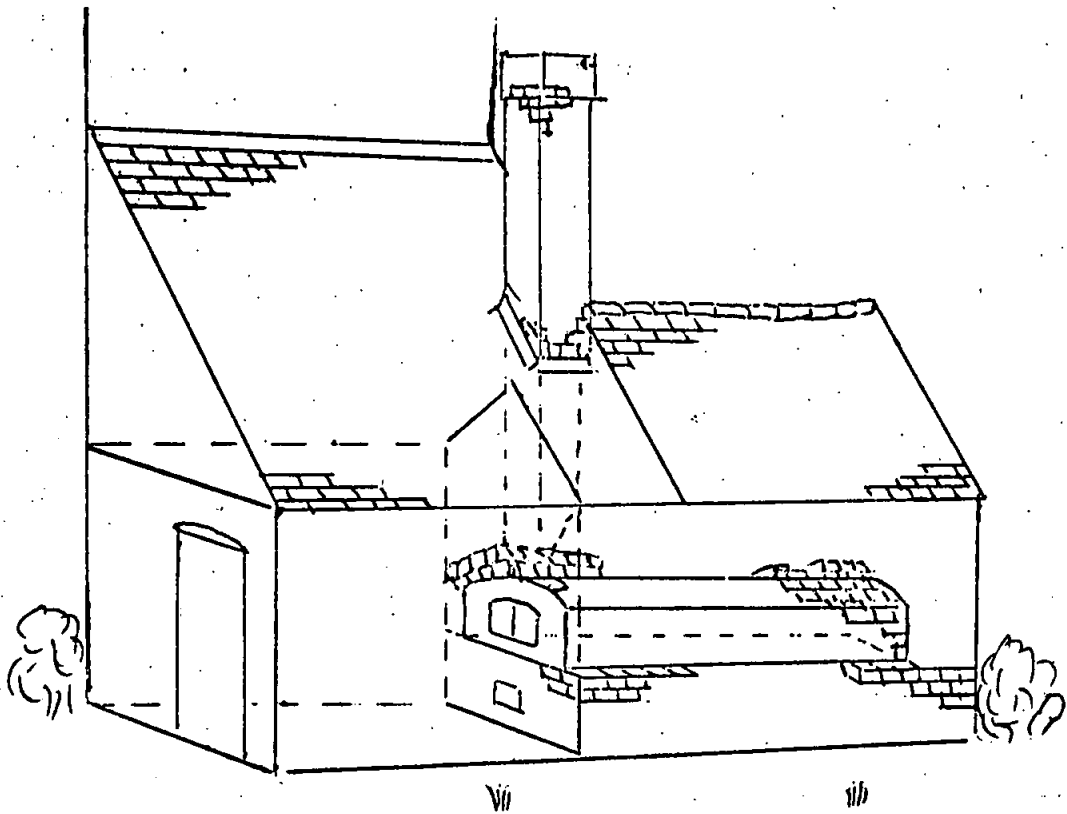
All brick and tile-making operations in the general area of south west Berkshire have now ceased. Although extensive deposits of clay (and sand) still remain, the relatively small scale of operation by the twenty works examined, plus the fact that the bricks and tiles were usually hand-made, made them uneconomic in competition with the large, capital-intensive plants in the Home Counties producing machine-made bricks and firing them in continuous kilns on a large scale.

PADSWORTH COMMON BAKERY - A NOTE

by Derek N. Herbert

The decline in domestic baking and corresponding establishment of the baker's shop in the early nineteenth century was most marked in the poorer non-industrial areas of the South of England. In Berkshire in 1831 there was one bakery for every 295 inhabitants, one of the highest ratios in the country (1). Although some small bakers (Small that is, compared with the milling-baking combines) still exist most of them use modern baking equipment and the older bake house is now very rare.

One such at Padworth Common, Berkshire (SU 626 650) has recently (October 1970) stopped baking after 200 years (sic) of existence on the present site. A record of this example of one of the oldest and simplest industrial processes is clearly of interest.



PADSWORTH COMMON BAKERY

The bake-house is an out-building attached to the main dwellinghouse and shop, part of a group of buildings which includes a stable and small granary. Brick built with a plain-tiled roof it measures some 22 ft long x 10 ft wide x 7 ft to the eaves. The oven proper is built into the solid brickwork at one end of the bakehouse and measures internally 10 ft long x 8 ft 6 in wide x 18 in high rising by means of a low arch to 2 ft in the centre. This type of oven is usually known as a "faggot oven", that is to say, the oven is heated by burning faggots (bundles of copsewood) directly inside the oven until the required temperature is reached. Smoke and fumes are removed by a chimney flue situated just behind the oven door lintel, air being admitted by the simple expedient of leaving the door ajar.

After the fuel has been consumed the ashes are raked out, the bread tins of proven dough are loaded into the oven by the long handled peel or bread shovel and the oven door closed. The large thermal capacity of the brickwork is sufficient to bake a charge of loaves without further heating. This size of oven would normally bake up to 200 2 lb loaves at a time.

Considerable skill is needed to heat the oven correctly as it will be appreciated that the back of the oven must be cooler than the front in order that the loaves at the back which spend the greatest time in the oven are not overcooked. There is no method of temperature measurement other than the experience of the baker who traditionally would expose the back of his hand to the oven opening. This type of oven had been almost entirely superseded by coal (and later gas and oil) ovens at the end of the 19th century. In these of course, as in modern ovens, the heating is indirect and continuous. The survival of the Padworth oven is probably largely due to the ready availability of fuel from the local hazel broom "industry" - a minor example of industrial interdependence. Fuel costs are low. At the rate of 5p per faggot it costs in the order of 30 - 35p to bake 200 loaves, a rate which probably compares favourably with more modern fuels.

It is ironic that economics did not cause the closure of the bakery but the retirement of the incumbent for 50 years, Mr. Hopgood. Indeed, reaction against the ubiquitous steam loaf meant that demand far outstripped supply. However, the hours are long and the work arduous so that another traditional rural skill seems fated to disappear.

Reference: (1) Clapham J.H. "An Economic History of Modern Britain" Volume 1, page 158

FAWLER INDUSTRIAL SITE, OXFORDSHIRE

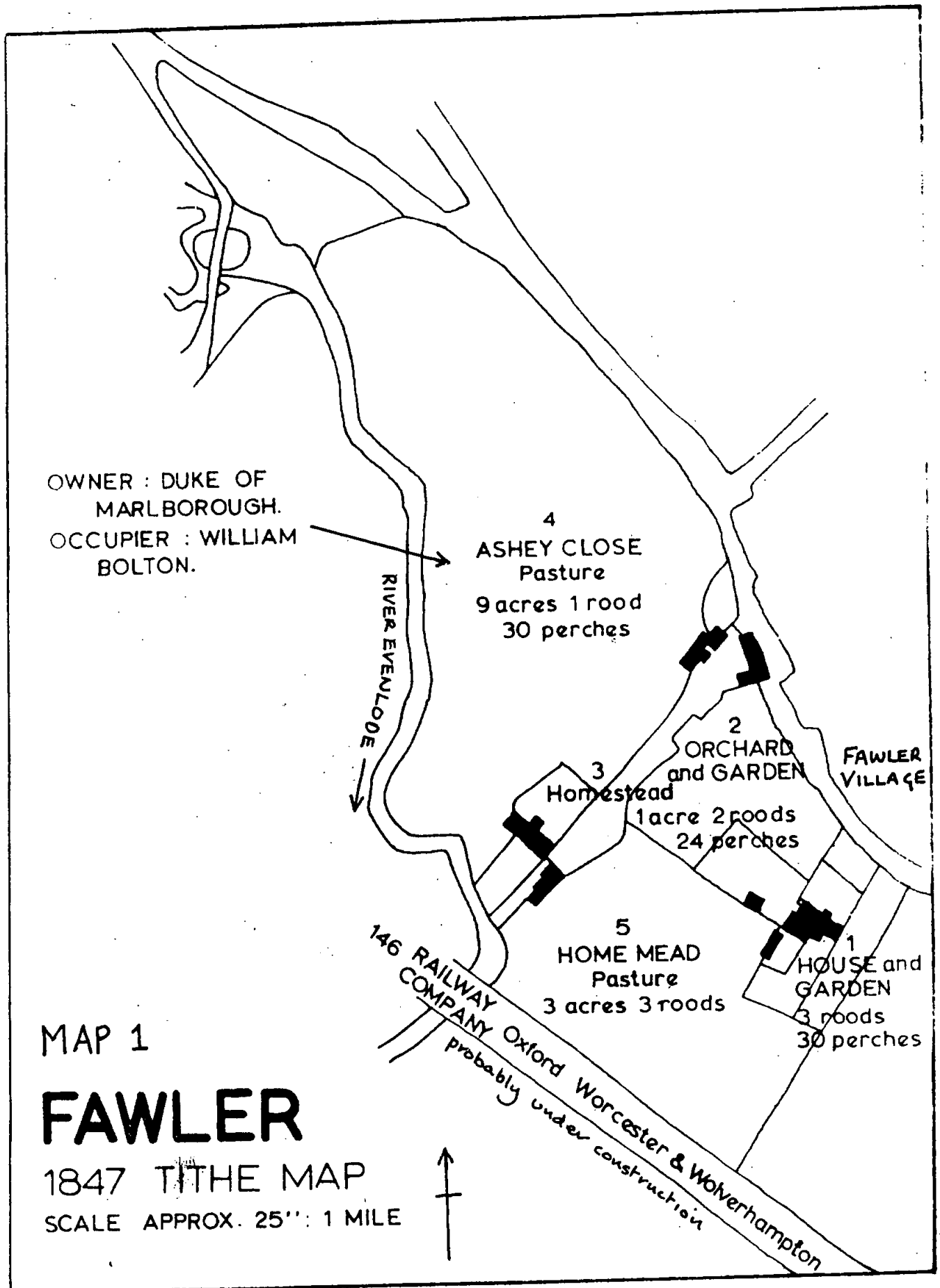
by Mike Aston

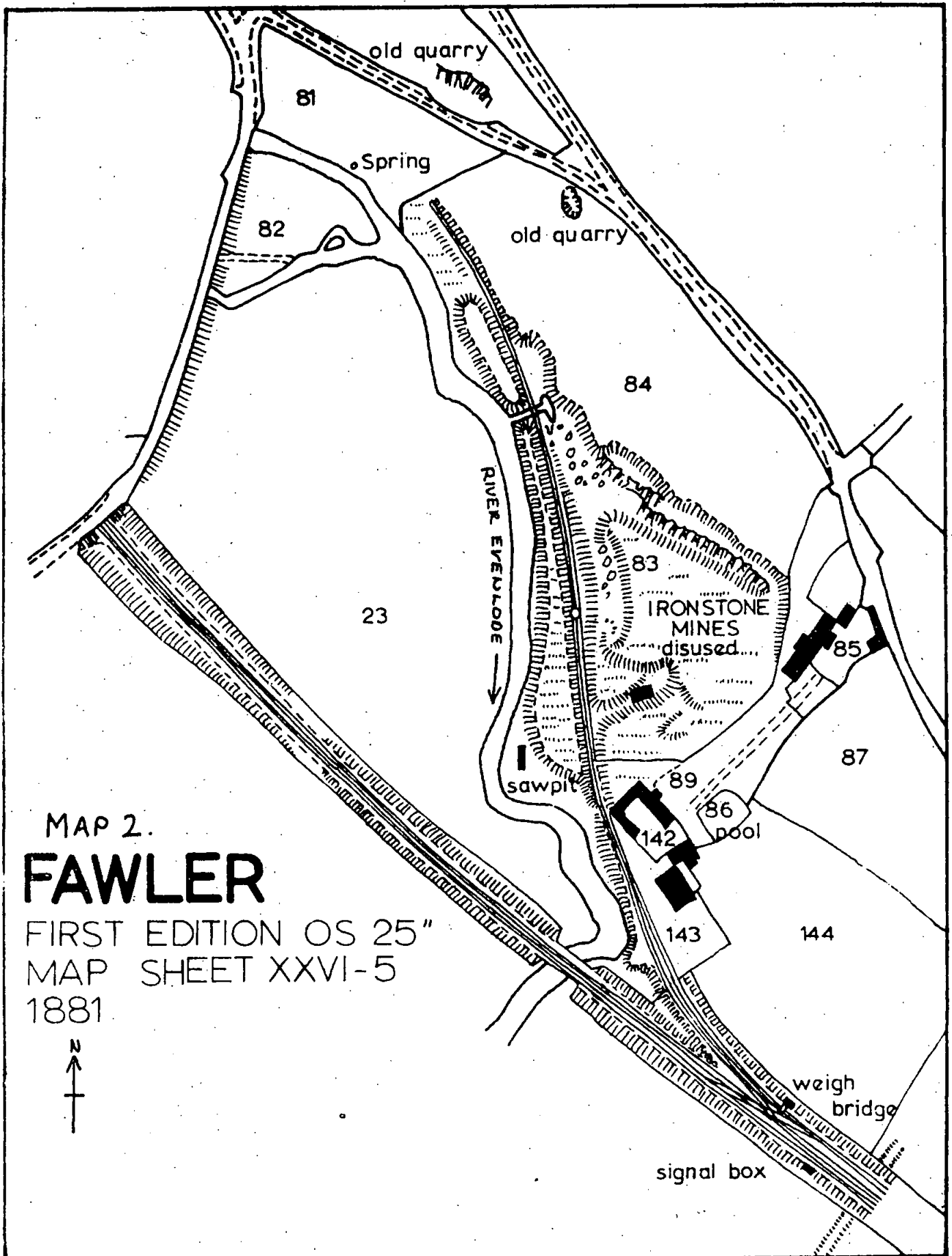
The aim of this short article is to show how, with the use of field evidence, early large scale maps and a few snippets of documentary evidence, a picture can be built up of a series of industries on one site. Here the landscape is the important factor and is used to retrieve most of the information. The site to be considered lies at SP 369 172 on the east side of the River Evenlode flowing south eastwards.

The first reference to this site is in Berks, Bucks and Oxon Arch. Jnl Vol 4 (1898) page 17 where it is recorded that "About 60 years ago (i.e. circa 1830) the grubbing up of a tree in Ashey Close brought to light a quantity of Roman coins, mostly silver, together with some broken pottery. Most of the coins were dispersed but the then Duke of Marlborough got a quantity". From this and the evidence of the tithe map of Fawler (part of Charlbury then) we can say that working of stone or iron ore on the site had not begun by 1847. Map 1 (See page 9, opposite) shows the pasture field of Ashey Close and also a number of buildings most of which survive today. In particular the house marked 'Homestead' should be noticed since this can be traced as a ruin today and without this cartographic evidence it could easily be mistaken for a later industrial building associated with the quarries. At this date, 1847, the railway company, the Oxford, Worcester and Wolverhampton already owned a strip of land and it is likely that the line was being built (as broad gauge) at this date. The line was not opened until 1853 and it was probably this event which gave the potential to this site.

In 1859 E.Hull of the Geological Survey drew attention to the possibilities of the marlstone here as an iron ore and called it Blenheim Ore (Arkeil - 'The Geology of Oxford' 1947 page 19, referring to E.Hull "Geology of Woodstock" M.G.S. 1859 page 10). It was probably at or shortly after this date that quarrying began, ironstone being extracted by opencast methods (unpublished notes - Victoria County History, Bodleian Library, Oxford)

It has been difficult to establish who was carrying out this iron ore quarrying but the most frequently mentioned name is Bolton and Partners who are known to be running an iron ore mining and brick-making business in the 1880's which had folded up by 1895. It is difficult to reconcile this with the 1881 first edition OS 25" map (Map 2, see page 10) which labels the mines as disused and shows little of the brickmaking industry except the pool - '86'. However, the map does give a superb view of the site at this date.





A branch line has been laid off the main line near a signal box and then along the side of the river near the quarries. In places this line has two tracks and in others only one. There is a turntable shown and a weighbridge where the line joins the main line. The course of this railway can still be traced today even though the lines, signal box weighbridge and turntable have all disappeared. The swa pit shown nearby can also be traced as a rectangular waterfilled hollow under the trees.

Also difficult to reconcile with the cartographic evidence for 1881 is the reference in Arkell, page 19, that there were two pits, on each side of the Charlbury - Stonefield road. He says that there was a tunnel linking these quarries under the road and that underground galleries led off on each side. Working ceased apparently in 1885 and he quotes his source Fred Oliver of Fawler who was born in 1874 at Finstock. However, on the 1881 and 1884 maps no quarry is shown on the other side of the road - indeed, a further quarry here is not shown until 1900. There is however local tradition of a tunnel with rails in it to run trucks on and it is even said that the tools were left in it when working ceased. If this is so, it will probably never be possible to examine this tunnel since the possible west end has been blocked by building debris laid down for a barn foundation and the east quarry is (in 1971) about to be filled in. It is said that a steam engine in the east quarry pulled the trucks up through the tunnel. The last mention of Bolton and Partners Limited, ironworkers and brickmakers) occurs in 1887 (Kellys) and by 1891 the mines are said to be closed.

The 1884 first edition OS 6" map is very similar to the 1881 map and no new activities on the site can be detected. However, by 1900 several new developments have occurred. Map 3 (Page 12) - the second edition OS 6" map - shows that around the old disused ironstone mines on the north side, the edge of the quarry face has been taken back. Here there are extensive deposits of Chipping Norton limestone, a flaggy stone often burnt for lime. It is significant that built into the front of the cliff here there is a square lime kiln with a circular hole in the top. This clever use of the local topography meant that the users of this kiln could fill it from the quarry above by taking stone across the level to the top and emptying the burnt lime at the bottom on the level of the railway track. It is not certain if the lines were still laid when this kiln was in use since they are shown as removed on the 1900 plan. This map has the only representation of a quarry on the east side of the road and as it is not labelled old quarry possibly it was in use at this date.

Between 1884 and 1900 there must have been a flourishing brick industry at Fawler using the local clay but again it is difficult to correlate this cartographic evidence with the fact that from the 1880's Bolton and Partners are described as brickmakers here (Kellys). However, a large area was dug for clay and the pits and water-filled hollows survive today, partly over the site of a large house shown on the 1847 Tithe Map. In the undergrowth brick drying sheds and possible brick kiln sites can still be detected on the south edge of the site.

Thus there have been three separate extractive activities on this site and with the use of the field and cartographic evidence a rough framework of the development of this small part of the Oxfordshire landscape can be worked out. No doubt the site would benefit from further documentary research.

ENGINES AT GEORGE BARKER & CO. LTD., COUNTESS ROAD, NORTHAMPTON

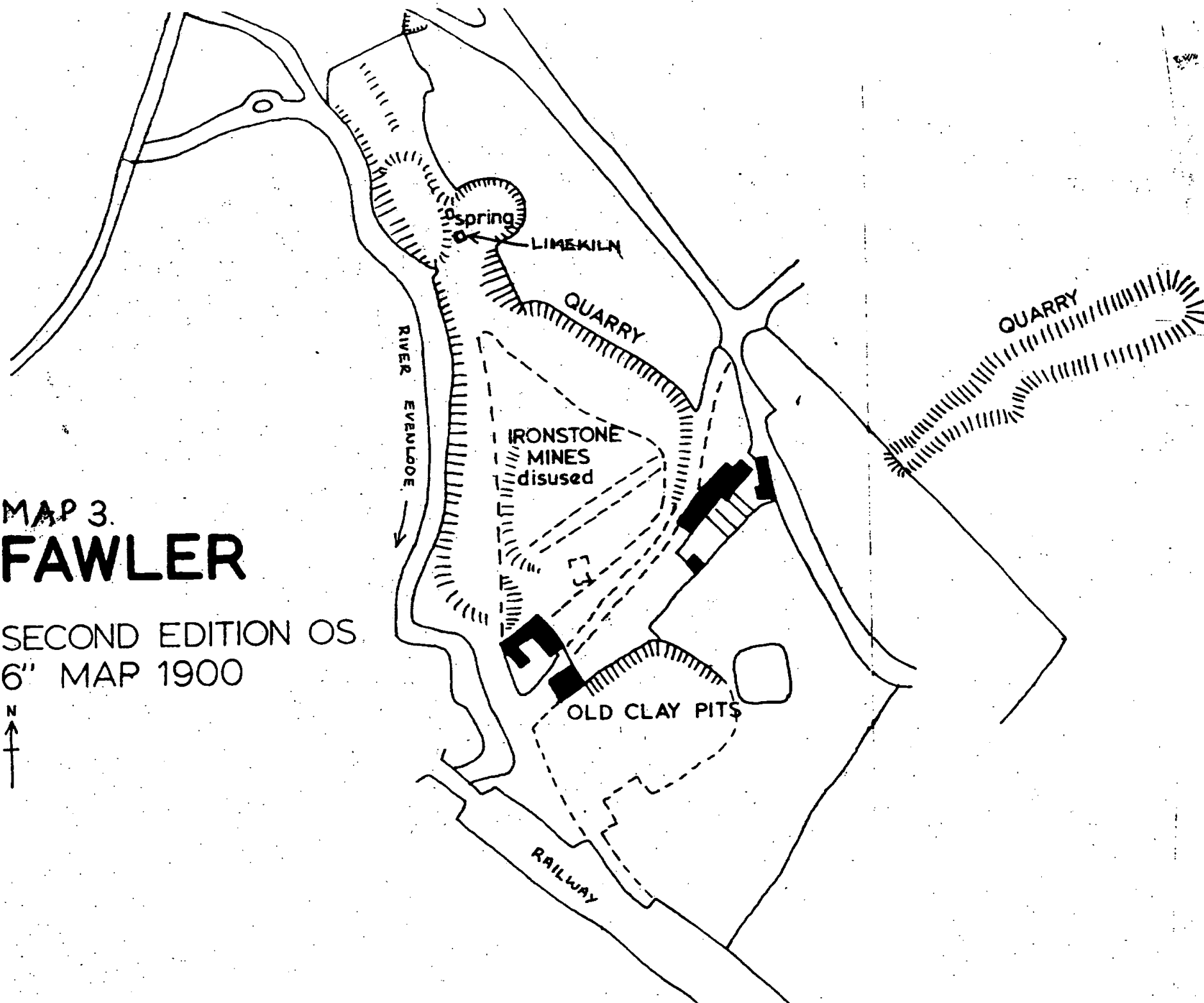
(SP 743 613)

Some notes of a visit by Richard O'Rourke
and Geoffrey Starmer to the engine room
at these Leather Works, at the end of March.

At the present time there are three steam engines, all of the enclosed vertical cylinder type built by Belliss and Morcom. The oldest was a triple expansion 400 HP engine, No. 1699 built about 1900. This engine was installed at Barker's in the late 1920's having previously worked at the Birmingham Carriage and Wagon Company's works. The engine has a shaft type governor operating the steam in-let valve to the high pressure

MAP 3.
FAWLER

SECOND EDITION OS
6" MAP 1900



cylinder and also, when the speed drops below a certain value, allowing high pressure steam to be delivered to both the intermediate and the high pressure cylinder. There are three valve rods, one for the inlet and outlet valves to each cylinder. The engine is direct-coupled to a 6-pole dynamo, built by The India Rubber, Gutta Percha and Telegraph Works Ltd, Silvertown, London. This Type K machine, No. 967 is rated at 225 v dc, 1000 A when driven at 380 rev/min. This engine was not in service and had not been in regular use since the 220 BHP engine was installed.

The 220 BHP engine, No. 8776, was bought new in 1934 and is a compound engine with two valve rods set at equal, but opposite angles to the vertical, between the two cylinders. A shaft governor controls the steam inlet to the high pressure cylinder and automatic expansion gear is fitted. The pistons run dry in the cylinder so that the exhaust steam, used for processing, is not contaminated with lubricating oil. This engine is direct-coupled to a Laurence Scott (of Norwich) dynamo generating 220 v dc, 682A at 500 rev/min and was in use at the time of the visit.

The third engine, No. 4310, was a C-type (i.e. single valve rod operating the valves for both cylinders) compound of 60 kW (About 80 horse power). This was direct-coupled to a GEC 4-pole dynamo, giving 200v dc 300A at 460 rev/min. The origin of this engine is unknown. Both this engine, which was not in use, and the 220 HP engine stood on the 13 ft deep concrete foundations of the earlier twin-cylinder Ruston gas engine (See below).

Steam for the engines is supplied by two 'Economic' boilers at 150 lb/in^2 , the engines exhausting at $5 \text{ to } 7\frac{1}{2} \text{ lb/in}^2$ to provide process steam. Water for the boilers is obtained from the Dallington Brook running under the boiler house.

The works were originally powered by Ruston gas engines of which there were four: a twin-cylinder engine referred to above and driving two line-shafts for the "wet-shop"; a single-cylinder engine in what is now the boiler house and the other two single cylinder engines situated elsewhere in the works. All of these engines drove the various machines by line shafting. The exhaust gases from the twin-cylinder engine were fed to a heat exchanger which generated the process steam required in the works.

As new machines became necessary, it was decided to re-equip with electrically-driven machines in all but the "wet-shop" where conditions were considered unsuitable for the electric motors available at that time. The 400 HP engine was obtained, relatively cheaply to provide power whilst the gas engines were removed and replaced with the specially ordered 220 HP engine. The latter subsequently supplied, almost continuously, all the power required in the works until 1950: the line-shafts to the "wet-shop" were driven by an electric motor housed in the engine room.

Shortly before 1950, it had become increasingly difficult to buy new machines with dc motors, especially when operating at only 200v so that very bulky motors were required. The decision was made to install machines with their own ac motors and take power for these from the Electricity Board with the intention of the works coupling an alternator to the steam engine and generating their own ac when sufficient machines with ac motors had been installed. Since the firm require process steam, there should be economies in raising this at a higher pressure and using the steam engine as a 'reducing valve' to lower the steam to the required 'process' pressure and at the same time generating electricity. At the present time, according to Mr. D.N.Ward, Engineer at the works, only about 25 - 30 % of the motors are ac, the remainder still requiring dc.

Until c. 1969, the works used two of Blake's Hydrams, with 9" spill valves, to lift spring water for use in tanning. With the decline in demand for high quality tanning and the damage caused by children every week-end to the Hydrams, these have been abandoned and water is pumped from Dallington Brook and allowed to stand for a considerable time in settling tanks before use.

NORTHAMPTON ELECTRICITY SUPPLY UP TO 1920

Geoffrey Richards, fortunately of the East Midlands Electricity Board, has been investigating the early history of the undertaking and searching for physical evidence of this period. In February he reported his findings, to date, to the "Archaeology of Old Crafts and Industries" course held at the University Centre, Northampton and the following notes are based on his talk.

The Northampton Electric Light and Power Company (NELPCo) was formed on 5 April 1889 with the local brewery proprietors amongst the first subscribers. The company's offices were at 2 St Giles Square, Northampton and these remained the registered offices throughout the independent life of the company. For many years there used to be a very large electric light outside as an advertisement.

Two weeks after the registration of the company, it was estimated that £16000 would be required to light 7000 lamps. In a few weeks the anticipated demand had grown to 14000 lamps fixed with 7500 lit simultaneously requiring a capital of £19000. This included for three accumulator stations of which one was at South Bridge to provide for the Lion, Phoenix and Phipps' breweries. In preparing these estimates, Colonel R E Crompton took no account of possible revenue from motive power, i.e. electric motors. The shares prospectus invited applications for £50,000 but only £10,000 was raised so in September 1889 Crompton prepared a revised estimate for only 5200 lamps and only one mile of mains cable as compared with 3 miles in the earlier scheme. The estimate was reduced to £9000 and in December the company ordered £5000 worth of equipment (engines, dynamos etc but not mains cable) from the Crompton Company.

On 20 March 1890 the Board of Trade granted the company a licence for 7 years. This allowed them to open up the streets to lay cables as provided in the 1832 Electricity Supply Act which stipulated that a company could be bought out by the local corporation after 21 years. This was later amended by the 1888 Electricity Supply Act which extended the tenure of the companies to 42 years. Soon after getting their initial Board of Trade licence, NELPCo applied for a provisional order for the full 42 years licence.

By October 1890 the engines had been delivered and installed in a newly-built engine room in Angel Lane. This building still stands (SP 754 603). The first two engines were by Scott & Hodgson at Guide Bridge. They were vertical compound engines with wood-lagged cylinders and ran at 200 revolutions per minute. Each drove Crompton bi-polar dynamos by cotton ropes from the grooved flywheel.

The mains were installed according to Crompton's system, which had large exposed copper bars supported on insulators from the floor of a rectangular conduit under, and covered by, the pavement. Although no more of this pattern was installed after 1903, about 600 yards still remains in use in East Park parade, by the Racecourse. "These may be the oldest mains still in use in the United Kingdom and maybe in the world". After heavy rain, water sometimes seeps into the conduit and when it reaches the conducting bars a vast amount of heat is generated and steam comes from the pavement - and dogs and other barefooted creatures dance with electric shocks!

On 11 March 1891 Northampton enjoyed its first public supply of electricity, one of the first consumers being Kendall's shoe shop in the Drapery. From this small beginning grew an undertaking which covered 1000 square miles by 1930. However, in the early years the revenue was barely sufficient to cover running costs. Growth was gradual but by 1896 there were 5 engine-dynamo sets at Angel Lane. The first dividend, 2%, was paid in 1897 which was the year the company introduced a maximum demand tariff. Wright meters were installed on consumers' premises to record this maximum demand and it is believed that one of these is preserved in the small museum at Angel Lane.

By 1902 there was £72000 capital in the company. There were seven engine-dynamo sets the last two being Willans high speed engines direct coupled to the dynamos. The company started to hire out electric motors for industrial use during the day-time to even out the load of supplying lights at night-time. Also in 1902, the Northampton Corporation made its one and only bid to buy the company. It offered £100,000 but the NELPCo directors would not sell for less than £140,000. The company offered to supply electricity for the town's trams but although this was cheaper than the corporation could do, the offer was refused. (In 1920 the Corporation's generating station broke down and NELPCo were asked to supply and took over from that time.)

In 1903 the company had 19 men (including office staff) on the payroll which totalled £23 per week.

By 1910 all of the original engines had been replaced. There were now:-

300 kW Parsons Turbine

600 kW Bellis and Morcom high speed steam engine set

5 other engine-sets, all by Willans

There were 25 miles of mains and pre-paid (Penny-in-the-slot etc) meters were in operation which used a roll of copper which, on payment, extended into an electrolyte so that after the due amount of electricity had passed the copper was dissolved and the current flow ceased.

In 1913 and 1914 two 1000 kW turbo-alternators were installed to supply a ring main to be installed in 1915 and 1916. The company realised that the premises at Angel Lane would soon be inadequate: there was lack of space, lack of condensing water for larger turbines expected in the future and, despite the proximity of the Midland Railway's St John Street station, lack of rail access for the extra coal which would be needed. In 1915 a site adjacent to Nunn Mills, on the River Nene (SP 762 598) was bought for the "Riverside Works" but this name never came into common use, instead the site became known as Hardingstone Junction (after the rail junction of the lines from Northampton to Bedford and Wellingborough)

Hardingstone Junction first went on load in 1919 and all of the company's output was generated there. Three 6 kV cables were laid to Angel Lane from where electricity was distributed and rotary converters installed to change the alternating current to direct current required by the original consumers. The two latest turbines were transferred to Hardingstone Junction from Angel Lane but the other 6 engines were kept there in case of failure at the main generating station.

WANTED

Information from schools who are undertaking some work of industrial archaeological nature. This is for a study for the Schools Council Project Technology which will eventually be published by Heinemann Educational. For school able to contribute to this work, there are available some draft notes on "Uses of Industrial Archaeology in Schools". Please contact:-

Education Unit, Lanchester Polytechnic, Eastlands, Rugby

REPORTS OF INDUSTRIAL ARCHAEOLOGY IN THE INDIVIDUAL COUNTIES OF CBA GROUP 9

BEDFORDSHIRE

Leighton Buzzard Narrow Gauge Railway Society

The Society leases two miles of the Leighton Buzzard Light Railway which was opened in 1919 to carry sand from various quarries north of Leighton Buzzard to Grovesbury Sidings on the LNWR Dunstable branch. The society operates a public passenger service on Sunday afternoons (Spring to late autumn) and will also operate on Saturday afternoons during the summer months.

This little line is well worth a visit. By permission of Joseph Arnold & Sons Ltd, one of the companies working sand in the area, it is possible to use their carpark, just off the B486 Billington Road (SP 928 241) on a week-end afternoon.

At the back of the car park are disused 2' gauge lines formerly running to the LNWR sidings. Following these in a north westerly direction, one comes to stop blocks across the rails. On the other side, the rails are shiny with use and amidst trees adjacent to the edge of Page's Park, the Society has a small station. Beyond this are sidings leading to a locomotive shed. On a recent visit, inside the shed was CHALONER, an unusual locomotive with vertical boiler and vertical cylinders bolted to the boiler. The locomotive was built by De Winton & Co, ironfounders of Caernarvon, in 1877 and worked at the Pen-yr-Orsedd Slate Quarry, Nantlle, until 1952. It was bought by Mr A. R. Fisher of Kings Langley in 1960 and loaned to the IBNGRS since 1968.

The locomotive in steam to operate the afternoon's trains was PIXIE, an 0-4-0 saddle tank of the "Wren" class built in 1922 by the Stoke-on-Trent firm of Kerr, Stuart & Co. Ltd. This used to work the Devon County Council's Wilmanstone Quarry near Tavistock and was purchased from them in 1957. The loco has been on loan to the IBNGRS since the end of 1968.

The first train of the afternoon consisted of one enclosed bogie coach and one open bogie coach with a 4-wheeled flat wagon at each end. Both coaches were full as the train started and climbed the incline towards the Stanbridge Road. On the right were good views across and into a fairly deep sand quarry, on the left the view of Page's Park soon gave way to the backgardens of a housing estate. The train came almost to a stand before the Stanbridge Road as a flagman left the train and took up his position in the road to stop traffic as the train rumbled across.

The next part of the journey was between industrial premises which are perhaps too modern to interest many industrial archaeologists, particularly as the former rail connections appear to have been taken up. At last the train seemed to be emerging into the country but on rounding a bend it slowed and stopped at Leeson Loop, close to the A4012 Dunstable Road. The locomotive PIXIE was uncoupled from the train and many of the passengers detrained to take advantage of this opportunity for photographs - although some looked longingly across the A4012 to where the narrow gauge rails run to Stonchenge Brickworks and on to Double Arches Quarries, 3 1/2 miles from Grovesbury Sidings. After running round the train, PIXIE coupled on to the other end and began the mile long journey back to Page's Park.

Publications

"Industrial Railways of Bedfordshire: Sundon Cement Works" by Sydney A Laleux. Industrial Railway Record, No 36 April 1971, pages 31 - 36.

The Sundon Works of the Associated Portland Cement Manufacturers Ltd is situated a few miles north of Luton, beside the former Midland Railway main line (TL035 275).

The article is a record of the 3' 0" gauge railway bringing chalk about 1/2 mile from neighbouring quarries to the works, with a description of equipment and operating methods at the time of the author's visit in 1965. The article would have been more useful if even superficial research had been made of the history of the works and its production - no dates are given for the start of production neither is information given of the present output.

NORTHAMPTONSHIRE

Cinemas in Northampton

With the change in public tastes in entertainment, the number of cinemas in the town has declined. At one time there were at least 15 cinemas:-

Cinema de Luxe	Campbell Street	Demolished
Coliseum	Kingsthorpe Hollow	Now used as shops. Many of the original external cinema decorations still visible.
Electric Pavilion	Gold Street	Site of Boots shop?
Exchange	Market Square	Later called Gaumont, now Odeon. Still in use.
Gemini	Washington Street	Now used as shops.
Majestic	Gold Street	Site now occupied by Ball's shop but inside can still be found traces of cinema interior.
Picture Palace	Kettering Road, near junction with Abington Avenue	No longer used as cinema.
Plaza	Wellingborough Road	Converted into supermarket & front altered considerably.
Royal	Grove Road	Now sold. Mainly used for bingo but films occasionally shown.
Ritz	Welford Road, Kingsthorpe	Converted into shops etc.
Roxy	St James	Used as factory.
St John's Street	Abington Square	Now ABC. Still in use.
Savoy	Newland	Used exclusively for bingo.
Temperance Hall	Far Cotton	Used by packaging firm.

Nassington Ironstone Quarries

These quarries were situated near the northern tip of the county and their standard gauge rail system connected with the former LNWR Market Harborough - Yarwell Junction (and hence to Peterborough) line about 1/2 mile west of the site of Nassington station. They were opened as recently as 1939 by the Noy or Benzon Mining Co Ltd but unlike many older established quarries, remained faithful to steam locomotion until they closed on 31 December 1970.

Peter Staughton of Northampton reported that the last load of iron ore was hauled out of the pit by the loco JACKS GREEN at 3:45pm, the other loco RING HAW coming out 5 minutes later.

In the last years of working, ore was taken from a quarry on the south side of the old LNWR line. The latter had been closed from the west (i.e. the Market Harborough direction) up to Nassington Ironstone Sidings on 3 June 1968 and the track had subsequently been used for an extension from the quarry system. British Rail took the ironstone traffic from the sidings to Peterborough to join the main-line system. The last BR trip was scheduled for 2 January 1971 to clear the yard and the loco JACKS GREEN was due to depart on the previous day for preservation by the Peterborough Locomotive Society. The buildings associated with the quarry have been sold and the land so that they may remain as a typical example of a quarry in the area.