

HEREFORDSHIRE ARCHAEOLOGICAL NEWS



HAN 30 June 1975

WOOLHOPE CLUB
ARCHAEOLOGICAL RESEARCH SECTION

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No. 30 June 1975

EDITORIAL

I am sure we shall all regret the fact that Miss R Hickling, one of our most enthusiastic and knowledgeable members, is leaving the area for pastures new at Redditch. We shall miss her company on field meetings but wish her most sincerely every success in her new post.

The Hereford City Archaeological Committee field workers under the direction of Ron Shoesmith have been excavating at Bewell House, Hereford, and notes are included in this News.

Detailed metallurgical research on the Anglo Saxon Spearhead found at Lugg Mills Hereford carried out under the auspices of Henry Wiggin and Co Ltd, Hereford by A J Brightmore has resulted in an excellent report, which is the subject of a contribution by R Pye. We are indebted to Messrs Henry Wiggin and Co Ltd, and Mr Brightmore for permission to use parts of the report, and also for providing the copies of plates and sketch of the spearhead. I am very pleased to hear that Mr Brightmore has now applied for membership of the Club and we wish him a warm welcome.

Members will please note the slip enclosed for those who intend to inspect the Hereford City Charters and Silver on October 23rd and this should be completed and returned to me. A booklet "The Royal Charters of the City of Hereford" by Miss E M Jancey, the well known Archivist of Hereford and Worcester County Council, is highly commended and is available from the Town Hall, Hereford, Enquiry Office during normal working hours (price 30p). For those unable to obtain one beforehand, some will be available on sale at the meeting.

Rising costs have meant that the Committee have had to increase the subscription from 40p to 50p. Members please note that this will come into effect from 1st January, 1976, and if it is paid with the main club subscription by Bankers Order or otherwise perhaps they would be good enough to effect the necessary adjustment.

Thanks are due to those members who have contributed articles and items are always welcomed. I make no apology for pestering members to hand over some of the material which is stored in their heads or notebooks since it gives such pleasure to others to read. I must thank Mr R Kay, the Assistant Editor, in particular for his valuable assistance which has been a tremendous help.

NOTE: AGM Thursday, December 4th, Green Dragon, Hereford - 7.30 pm
C E Attfield, Editor

OFFICERS OF THE GROUP

Chairman: Mr P Cooper,
Secretary: Miss M Thomas
Treasurer: Miss R Hickling
Field Secretary: Mr L Skelton

Committee Members: Mrs S Warren

Mr G Parker

Co-opted Members: Editor:
Mr C E Atfield

Assistant Editor:
Mr R E Kay

PROGRAMME AUTUMN 1975

Sunday 20 th July	Offa's Dyke, Redbrook	Leader Peter Cooper Meet 11 am Garage, Redbrook 2 pm Garage, Redbrook GR 537100
August	No Meeting	
Sunday 21 st September	Buckholt Camp	Leader R Kay Meet 11 am Welsh Newton Church 2 pm Royal Oak, Ogbaston GR510145
Thursday 23 rd October	Hereford City Charters & Silver	Organiser C E Atfield Invitation by the Mayor of Hereford, Councillor M K Prendergast, to inspect City Charters and Silver. Talk on Charters by Miss E M Jancey, Archivist, Hereford and Worcester County Council. Meet Town Hall 8 pm
Sunday 16 th November	Stone Quarries relating to Hereford City Walls	Leader L Skelton Meet 11 am Grafton Inn 2 pm Grafton Inn GR 502362 (approx 1 mile from Hereford on A49 Hereford- Ross)
Thursday 14 th December	Annual General Meeting	A programme of slides and short talks including one on "The Metallurgical examination of the Anglo-Saxon Spearhead" by A J Brightmore. Meet Kemble Room, Green Dragon, Broad Street 7.30 pm

NOTE:

1. If any further information is required about this programme or if in doubt in the case of bad weather, please ring Mary Thomas at Pontrilas 205, or Leader.
2. Guests are welcome at all field meetings.
3. Please bring a picnic lunch.

HORSE GIN AT WITHINGTON, WORMBRIDGE, HEREFORDSHIRE GR 428300

This interesting piece of agricultural machinery was examined by the Research Group on two occasions, 1st September 1974 and 16th February 1975.

Withington Cottages, now derelict, lie half a mile south of Wormbridge Church and may be reached by leaving the A465 road at the sign post marked Bagwylydiart. Permission to view the site should be sought from Mr B Hughes of Howton Grove, Wormbridge. The gin is not visible from the road and access is by way of a gate to the left of a large barn on the roadside.

The machinery, and the building which housed it, are in a ruined state and considerable deterioration has occurred over the past few years. In the interests of clarity the accompanying sketch involves some projected reconstruction. The chief operation powered by the gin was certainly threshing but, according to local information, the machinery inside the barn was removed before the First World War and it is impossible to tell whether chaff cutting, turnip chopping etc were also carried out here. It would seem reasonable to suggest that the works date from the early 19th century and fell into disuse with the introduction of steam powered threshing which, in this area, was towards the turn of the century.

The massive stone barn was adapted to house the operations by the insertion of a loft. Half of the floor of the loft is constructed of intricately wattled birch and hazel, which is supported by thick, slightly arched beams, measuring 14 x 12 inches, placed at intervals of a few feet and spanning the width of the building. The barn stands on sloping ground and access to the loft is by way of a solid ramp on the northwestern side. The upper walls are timber and weatherboard and the tiled roof is in excellent condition. The ground floor is fitted with mangers and the brickwork suggests that this is also part of the 19th century conversion. As the equipment probably served the local farming community, it would be in use for most of the autumn and winter months. It is therefore likely that the five horses, which spent their daylight hours following each other's tails round the gin, were stabled at night in the lower part of the bam.

The building which houses the gin is built onto the north east wall of the bam. As the ground plan (fig 1) shows, it has a semi-circular apron front. The semi-conical roof was of stone tiles and the roof timbers were supported by five well constructed brick pillars with smooth, rounded edges. These stand on a low stone wall of which little now remains. One pillar is, in fact, missing and has been re-used inside the bam as part of a repair to the mangers. The hefty beam, which takes the weight of the machinery and the roof, rests on two tapering, stone-built pillars. The floor is of compacted red clay topped with well worn cobbles, few of which remain. The rectangular, ridged roof of the inner part of this building is modern.

The machinery (fig II)

The vertical iron shaft of the gin rotated upon a wooden block into which is set an iron socket. At a height of 2'8" a cast iron plate is slotted to take the five wooden poles to which the horses were yoked. Above this, 7' from ground level, revolved the main driving wheel measuring 8' in diameter. This wheel turned a horizontal shaft and, through three gear systems, produced considerable power and speed. (I am told that this could be at the ratio of 1 to 500). Two drive shafts enter the bam at a height of 7'6" above ground level. These can be examined from the loft, where there is a small wooden door for maintenance access

to the gear and braking systems. The mechanical details need to be cleaned up and photographed. This part of my sketch is, of necessity, very much simplified.

The site is the property of the Whitfield Estate. Lady Mary Clive tells me that money is not available for rescue of the equipment and building in its present position, even if this were practicable. She is, however, concerned: that a valuable piece of industrial archaeology is falling into decay and would be pleased to discuss the possibilities of moving the machinery to a museum if this is desirable. Her son, Mr George Clive, may be consulted when he returns from abroad at the end of May.

MJT

SITE INSPECTION SCHEME

Many members will be aware that, some years ago, we, as a group, undertook to 'keep an eye' on the scheduled and unscheduled monuments in the county.

The scheme involved the distribution of lists and maps to those who were willing to help. Originally each member was asked to cover the area of one, or sometimes two, 2½ inch maps. This meant that he/she undertook to visit the monuments in that area at least once a year and report any damage or serious deterioration.

As members left the group or left the county their areas of responsibility were handed on to others or just allowed to lapse and the whole scheme gradually died a natural death.

At a recent committee meeting it was decided that we should attempt to re-institute this very worthwhile task by re-allocating and up-dating the lists and inviting new members to participate. Obviously, the more people who are involved the smaller each area will be and it is hoped that everyone will agree to help so that all monuments in the county can be covered.

The following members were originally responsible for areas and the committee would be grateful if they could let the Secretary know if they are NOT prepared to be involved in the re-allocation.

G Calderbank
R Hickling
M Thomas

L Skelton
M B Hale
R Pye

E M King-King
F Noble
R Shoemith

There are fifty-eight other members on our list. If just half of these were prepared to help we could keep the areas down to one 2½ inch map each and this would involve each person in, perhaps, one Sunday afternoon out per year. We shall, of course, attempt to allocate you a map in or near your home area.

Please will you get in touch with the Secretary (phone Pontrilas 205) if you are willing to help. A return slip is enclosed if you prefer. Please - do it now - so that the work of re-distribution can begin as soon as possible.

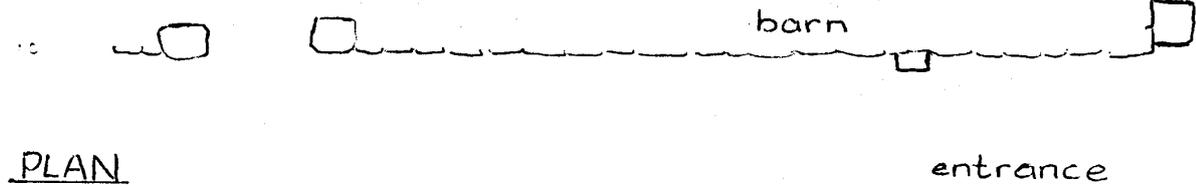
Mary Thomas, Secretary

HORSE GIN

WORMBRIDGE

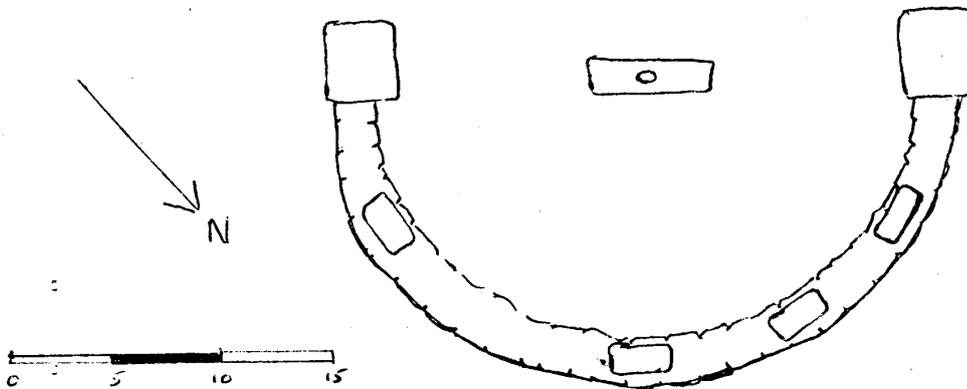
GR. 428300

FIG I



PLAN

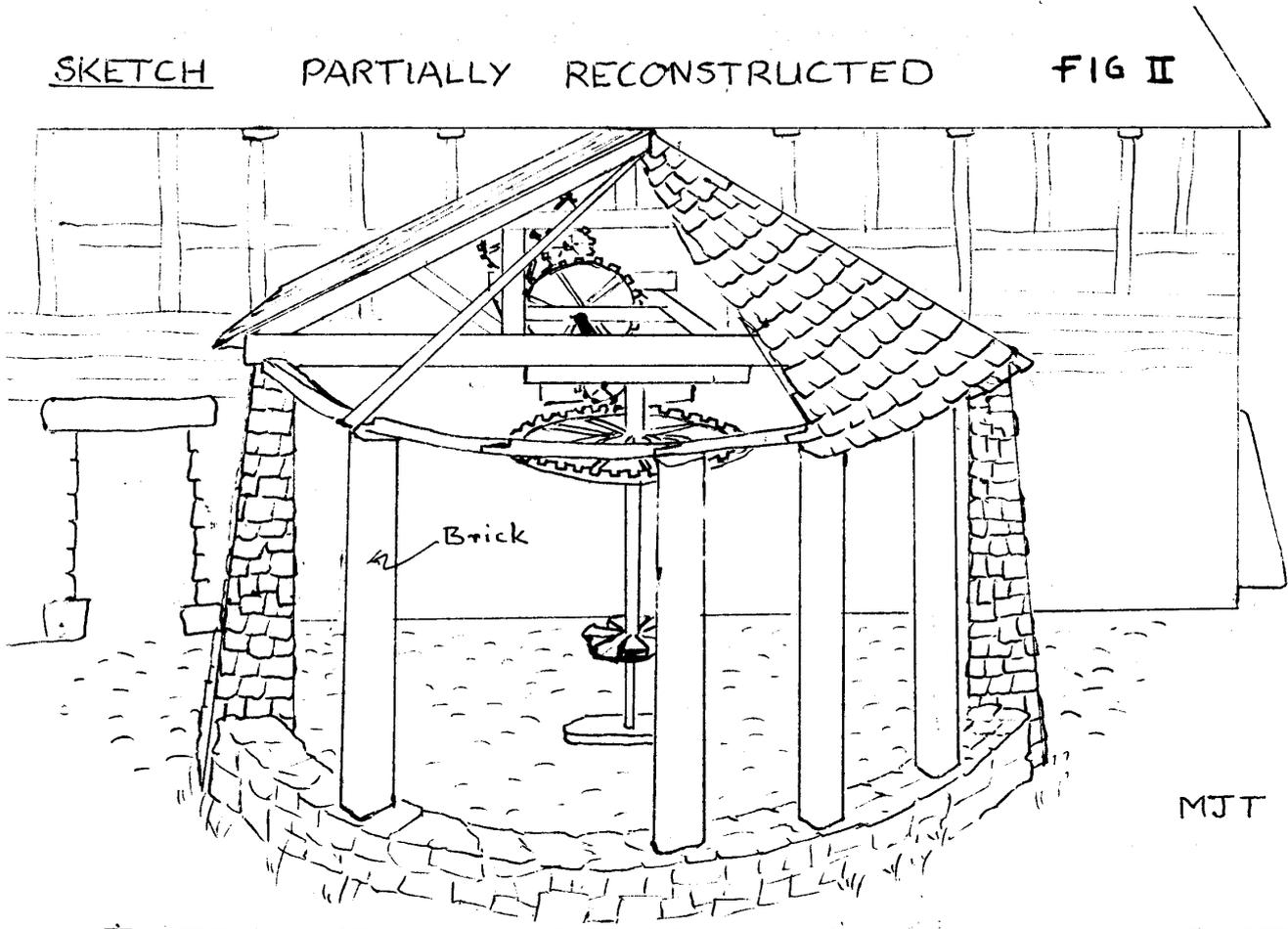
entrance



SKETCH

PARTIALLY RECONSTRUCTED

FIG II



BRONZE AGE – NOTES BY ROGER PYE AND CHRISTOPHER DUNNE

Radnorshire - COLVA - Dreavor Farm SO 18305284

A hitherto unrecorded barrow, of ovaloid shape, 12m x 10m and 1.30m high, it is situated on the northern slopes of Black Hill. The maximum axis runs north-south, (across the slope). There is a slight depression at its eastern end, at the base.

W R Pye, Westfields, Lyonshall, Kington, Herefordshire

Radnorshire - Llandeilo Graban - Perthi SO 12204515

A hitherto unrecorded barrow, much ploughed down, some .3m only in height, and 11m in diameter, is situated on a spur of land projecting into a field. There is no visible ditch.

**C J Dunne
W R Pye**

Radnorshire – Llandeilo Graban – Blaen Henllan SO 10454560

A previously unrecorded barrow is situated on a natural rise in the field, it having a diameter of 9m and a height of 1.20m. Large stone slabs 10cms thick and up to 1m long protrude through the turf around the barrow edge and some, being in a vertical position, must represent a kerb of fairly massive proportions. No ditch is visible.

W R Pye

Herefordshire – Yatton – Leinthall Earls 1" OS 129 LUDLOW NER 437669

A previously unpublished mound, presumably a round barrow immediately below a track leading from common ground, and 50 yards from it. Built on a fairly steep slope, it is ovaloid 12 x 9 paces with a height of 3½ ft. It has a slight 2-yard-wide ditch around it. Both ditch and barrow are damaged by a recent shallow scoop into its western side.

Its build-up contains some broken shale.

NB It is unconnected with charcoal pits, some 100 yards down a steep slope.

W R Pye

NEOLITHIC – NOTES BY ROGER PYE

Herefordshire - Garway 1" OS 142 Hereford NER 45362220

In May 1974 R Flynn, The Bungalow, Church Farm, Garway, found a large fragment of a polished stone axe. It was of adziform type and had been broken in antiquity, this section comprising about 1/3 of the cutting end of the axe. This was trimmed at a later date to make a more readily-handled artifact. The surface is polished on both sides, one approx 30%, the other 50%.

It has a length of 74mm, width of 65mm and a thickness of 25mm with a weight of approximately 135 gms.

In Petrological examination it has been assigned the No. He/57c and of it Professor Shotton writes:- "The rock is a quartzose ash, which has, I think, been partly re-crystallised by heat. It is quite different from any other I know and I cannot localise it, it is quite probably one of the Welsh Ordovician ashes."

The axe is in the hands of the finder.

W R Pye

**Herefordshire – Staunton-on-Wye
SO 34654605**

Following the discovery of numerous surface finds during woodland operations a few years ago, a 2m x 2m exploratory trench was excavated, although some distance from the flint concentration, which had yielded a leaf-shaped arrowhead, large fragments of polished stone axes, and many small burnt and patinated flint flakes.

A shallow, apparently natural hollow yielded occupation debris, which included ten small flint flakes, most of which were patinated, and a small abraded sherd of fine 'Western Neolithic' pottery.

It is confidently anticipated that future excavation will give further, more substantial evidence of Neolithic occupation.

W R Pye

ARCHAEOLOGY IN THE CITY OF HEREFORD 1974-5

Notes by R Shoesmith and Eric Smith

Development plans for the northern part of the walled city will need a major archaeological effort over the next few years if unique evidence from the Saxon and Medieval periods is not to be lost forever.

Early in 1974, a report was prepared for the West Midlands Rescue Archaeology Committee which suggested that some 15 acres within the Medieval city walls - one sixth of the total area enclosed - could soon be undergoing development. The report, which has been printed, is available from the City Archaeological Offices at Bewell House. Entitled 'The City of Hereford, Archaeology and Development', the report was launched by the then Mayor of Hereford, Councillor James Baldwin, who also initiated an appeal for funds. It includes a section on the historical background of the City which is followed by a resume of previous archaeological research. Full details of the possible future development within the city walls is considered, and it is suggested that an archaeological unit should be set up to solve the problems of the next few years.

The first result of this report was the formation of the City of Hereford Archaeology Committee with Philip Rahtz as chairman. The Committee will initiate and carry out a programme of archaeological investigations in the City and has employed Ron Shoesmith as their Director of Excavations.

Finance for the 1974-5 year was made available by the Department of the Environment, who have also made a grant for the 1975-6 financial year. Funds have been aided by a grant of £1,000 from the City Council. The Committee have been offered the free use of Bewell House as headquarters and as hostel accommodation for their digging team by Pagebar Investments Ltd, the developers of one of the major sites in the City. These generous offers will help to ensure that Hereford will stay at the forefront of archaeological research in the West Midlands.

The Committee includes representatives of the Woolhope Club, the Civic Trust, the Department of the Environment and various City and County Committees as well as several West Midland archaeologists.

Programme of Work

The excavation team has been engaged during the last few months on a large scale trial excavation in the northern part of the National Car Park area in Bewell Street. This will continue for a few more weeks and will be followed by small trial excavation in the grounds of Drybridge House where it is hoped to find traces of the continuation of Rowe Ditch. It is then hoped to clear the remainder of the Cantilupe Street site in advance of consolidation works which will expose a section of the Saxon defences to the public.

The remainder of 1975 will be taken up with post-excavation work, and it is intended to publish the results of the last 10 years' excavations in Hereford during 1976. This will include the excavations carried out during the construction of the City Walls ring road and the following excavations on the Saxon Defences and in the Castle Green area.

RECENT SITES IN HEREFORD

Berrington Street

The final phase of excavations in this area was carried out late in 1973, and the final report is now being written.

A report on some of the animal bones from the Saxon, Medieval and post-Medieval levels has recently been received from Barbara Noddle. The report deals with 5073 fragments from mammalian species and provides some very useful information which has been analysed statistically. The report is, of course, very detailed, but some points are of a more general interest. In all periods cattle bones form at least 50% of the total whilst sheep increases with the passage of time from 15% in the Saxon period to 23% in the post-Medieval. Pig increases in the Medieval period but falls thereafter. Other bones form less than 10% of the whole and include horse, goat and various species of deer. This indicates that hunted species formed a very low proportion of the meat consumed in Hereford throughout its history, as indicated by this particular site.

Castle Green

Further details are now available following this excavation which took place during Easter and early Summer 1973.

Charcoal from under two burials was sent to Harwell for radio-carbon dating and the results give dates of AD 990 +/- 70 and AD 920 +/- 80. We can thus be reasonably confident that the burial ground was in use before the castle was built. Further radio-carbon dates are being obtained which should establish the period during which the graveyard was in use and the date of its earliest burial.

The earlier burials on the site were reasonably elaborate, over 50% being in coffins of which only the nails remain. Later burials had no indication of coffins, and nearly all the latest burials on the site were small children or infants.

City Arms, Broad Street

Reconstruction of this building to provide a new branch for Barclay's Bank provided an opportunity to examine this important area at the northern end of Broad Street. The ground had been extensively disturbed during the post-Medieval, but it was possible to examine the Saxon ditch fill in two small trenches cut by the workmen for underpinning. A timber framework had been constructed in the ditch during a late period in its life, and this included some wattle work fencing. Samples of the timbers and soil have been sent to the Department of the Environment laboratory for examination which should give the date and possibly indicate the use of the structure.

Bishops Meadow

A main drainage trench was dug by machine some 50 metres south of and parallel to Rowe Ditch to provide drainage from the new swimming pool. The trench cut through river silt which gradually merged into the natural silt of the area. No archaeological features were seen during the work.

National Car Park Site Adjoining Bewell House, Bewell Street

A trial excavation in the northern part of the National Car Park in Bewell Street is nearing completion. The site lies just within the gravel rampart which encircled the town during the 11th and 12th centuries. One important purpose of the excavation is to confirm the dating of the construction of this rampart from the archaeological evidence.

The tail of the rampart was found to be slightly cut away to enable two furnace like structures to be constructed. These contained, what could be clay moulds, but their purpose is still uncertain and expert opinion is being sought. They are both built in regular pits and

each is surrounded by a timber building. The clay floor of one of these workshops survives virtually undamaged, and the evidence so far points to the destruction of the building, possibly by fire, some time early in the 14th century. The furnaces, together with those found in the 1968 Ring Road excavations close by, confirm that the north-west corner of the walled city was the industrial area in the 13th and 14th centuries.

Excavation is still concentrated on these structures and on the surrounding soil levels which cover any earlier occupation.

The later periods on the site consist mainly of garden deposits, presumably behind properties fronting onto Bewell Street. A number of large rubbish and cess pits were dug from time to time within these garden areas. When Bewell House was built in 1730, the site became part of a landscaped garden which was re-designed about 1860 when the Hereford Brewery needed more space.

Wigmore Abbey

A small area, lying across the western cloister was excavated in advance of a building extension at Wigmore Abbey. Undisturbed remains of the cloister and cellarer's range were discovered. These were covered by a deep deposit of rubble, presumably dating from the dissolution of the Abbey. Beneath this rubble the main wall of the cloister stood in places to a height of one metre, being solidly constructed of roughly dressed uncoarsed facing stones with a rubble, clay and mortar core.

The cloister wall itself had three successive floor surfaces, the uppermost of stone flags, the lower two of dirty soil - these may have been tiled however, as a quantity of fine glazed floor tiles were found.

In the cellarer's range behind the cloister wall a narrow stone wall was found, dividing two rooms. This wall survived to its full height of one metre, being plastered on both faces and probably holding a timber superstructure. One of the rooms contained a succession of possibly five clay floor levels.

Dating of these remains was slight, the first cloister wall probably belongs to the first building of the Abbey in the late 12th century and the narrower rooms division to a later re-building, possibly of the late 14th.

Finds of a Medieval date were few, principally a quantity of glazed clay floor tiles, many of excellent quality.

MARSTOW COURT FARM

Parish of Marstow, Herefordshire GR 553192 BM 113.44

Marstow Court Farm is situated on the extreme southern boundary of the parish. It occupies a not very level terrace at the foot of the western slopes of the narrow valley of the River Garron. Immediately to the north, the ground continues to rise steadily to an OD of 300'. The present farmhouse and some subsidiary buildings lie to the west of the Old Forge-Brelston Green lane, near its junction with the A4137. The main range of the farm buildings are sited on the opposite side of the lane, on the crest of a low bank, which slopes down to the flood meadows of the Garron. Adjoining the farmyard and between it and the Dutch hay barns on the south is a two storied building, the subject of the following notes:-

The building is rectangular, approximately 35' x 24' in external measurement and lying on an exact E to W axis. At the E gable end there is a roofless lean-to annex, and N of the E end of the N wall are indications of a now demolished single storey range. The main rectangular block would seem to be a relic of a small 15th C house of some architectural pretensions. Its walls have been carefully built of roughly squared and coarsed sandstone rubble and exhibit many features of interest. At ground floor level these walls average 25in in thickness, excepting that of the E gable which is 30in. The ground floor, presumably originally one large room, has been divided by an unpierced cross partition wall of inferior masonry, probably of early 19th C date, into two almost equal portions,

The W room is entered by a doorway, probably not older than the 19th C, hacked through the W gable wall near the NW angle. The N. wall of this room has three window openings of varying dates. That to the W is of one single glazed rectangular light, 34½in H x 25½in W ext., with a single plain 4in. chamfered frame of hard grey silicaceous sandstone. It is deeply splayed internally to a width of 48½in, with a level sill and flat oak rere-lintel. The opening is probably of early 17th C date. (This window frame form is common for the period 1400-1650 and is not distinctive of any particular part of this wide period. However, the wooden rere-lintel would suggest a date towards the latter end of it.) Close adjoining to the E, but sited at a lower level is an almost square opening, 35in high x 33in wide ext. widening to 37in int. Unmoulded oak external lintel with rubble jambs. This opening now closed by clapper boarding on a wood frame, was probably cut through the wall early in the 19th C. Immediately to the E is a very fine blocked up window of two pointed and chamfered lights, set in a rectangular frame with a deep hollow chamfer. The window frame of friable red sand-stone measures 69 ½in H x 46 ½in W within outer edge of chamfers (all chamfered window and door frames have been measured in a similar manner. Each light is 20in wide and the rise of the pointed head is 10in. The window seems to be of late 15th C form. High up and projecting from the internal face of the W wall is a rough stone corbel which helps to support one of the floor joists above. This room is now used as a potato and coal store and contains no other features of structural interest except a joint or bond in the N internal face of the wall, which may mark the site of a blocked opening. There are traces of lime plaster adhering to the walls.

The E room is, at present, entered from the farmyard by a rough hewn doorway with a flat oak lintel, hacked through the N wall of the building, probably in the 19th C when the cross wall was apparently inserted. At the E end of the N wall there is externally a curious thickening in the masonry, which extends from the ground upwards nearly to the level of the wall plate. It is too shallow to disguise a stairway, and does not appear to be a fireplace projection. Adjacent to it are projecting stones and irregularities in the masonry which suggest the bond of a demolished northern range or wing. This seems to have been succeeded by a vanished annex of recent construction, the past presence of which is indicated by a gabled roof line on the external wall face, above the present doorway. Above the aforementioned projection, the character of the masonry changes and contains many thin slabs of stone, probably indicating a rebuilding at this point. Externally at the base of this projection there is a blocked chamfered doorway frame with a four centered head 73in high x 49 ½in wide, rise to head 9". This is set at a considerably lower level than the present doorway giving access from the made-up farmyard. The two levels are separated by the base of the outer wall of the demolished one storey range. The remains of this wall of sandstone masonry, of 18th C date, shews two featureless blocked openings and it is surmounted by a low red brick wall of recent date. In the E wall of the E room there is a rectangular window of two chamfered square headed lights in a stone frame, similar in detail and date to that at the W end of the N wall of the W room. It measures 39in wide, splaying internally to 53½in. Externally below its sill there is a projecting offset in the gable wall. North of this window a large rectangular recess 42in wide and 12½in deep appears to be a blocked window or doorway of 18th C date. The external face of the wall is here not very accessible, being obscured by a heap of broken tiles and a growth of nettles. Other features of interest in this room, now used as a cattle byre, are the bonds or joints in the three outer walls probably indicating blocked openings. Externally in the E wall there are inserted oak beams or lintels and patched masonry which seems to indicate a whole series of alterations in this area.

East of the main block and in line with its N wall there is a small single storey lean-to building of early 19th C date. The E and N walls, 17in thick, are of coursed laminated sandstone rubble with dressed quoins and are devoid of any openings. There is no extant S wall, which was presumably of wood. The building is roofless and access to it may have been gained from the E room of the main block by the closed doorway previously mentioned.

The upper storey is reached by an external stairway of solid masonry of indeterminate but probably recent date. It is built around the SW angle of the building in two straight flights of seven and ten steps. This would hardly seem to have been an original arrangement, but the quoins at this angle of the building project outwards in a curious manner to form what appears to be the E jamb of a now vanished doorway. This exhibits a deep hollow moulding or chamfer. It may merely indicate the patching of the angle of the building with worked stones from elsewhere, but an examination would seem to rule against this. Externally the division between the ground and first floors is marked by a 4in offset in the W gable wall. The upper storey is now one large room, used as a granary or seed store. The internal walls are cement plastered to about half their height. The present entrance in the S wall at the head of the external stairway is a rectangular doorway with a flat oak lintel and oak frame, probably of late 19th or early 20th C date. The wall is here 24in thick and E of this doorway there is internally a rectangular recess 36in W x 12in deep and 35in above floor level. This seems to represent a blocked window of uncertain date. In the E gable wall there is an internal offset at wall plate level and below it are two windows. That to the S is of one rectangular light and probably of 17th C date, has chamfered masonry jambs with an oak sill and lintel. It is 29½in high x 33½in wide, splaying internally to 54 in and with sill 50½in above floor level. The gable wall is here 28½in thick. N of this window is a decayed and completely blocked window with a wooden frame of two rectangular lights, probably of 18th C date. Above the offset, high in the gable wall, there is a small single light with chamfered stone jambs, stone sill and wooden lintel - probably 17th C. In the N wall is a well preserved oak framed window of two rectangular lights, with chamfered jambs and stop chamfered mullion, probably early 18th C. It has a wide internal splay opening to 35in high x 71in wide with sill 41in above floor. There are indications of blocking at the E end of both N and S walls.

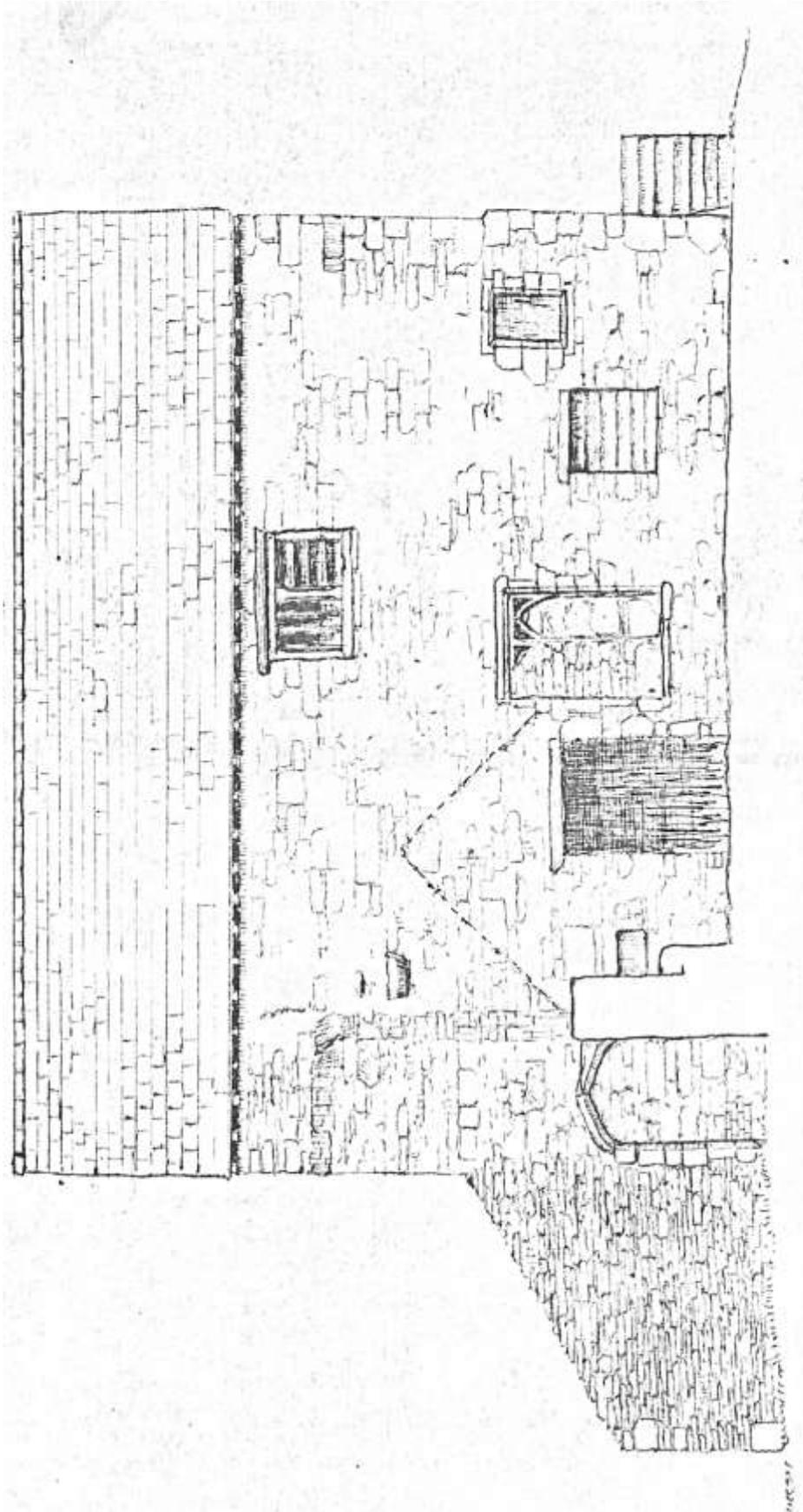
The floor is of oak planking resting on substantial oak joists approximately 9in square, which extend across the full width of the building and whose ends are embedded in the side walls. The eastern part of the floor is lower by one step of 4in from the remainder, and may mark the site of a bygone partition. In the E ground floor room, one of the floor joists is supported by a squared oak pillar, probably of recent insertion.

The roof of N Wales slate with ridge tiles supersedes one of red tiles. These are now piled against the E and S external walls. The roof is in three bays and the main trusses are of a modified queen post type. The E truss tie beam is only 5in thick, the W is 9in thick and the central truss tie beam approximately 12in square. The principals and tie beams are stop chamfered on their under surfaces. That of the central tie beam shews slotting of two different dimensions, presumably for ceiling rafters and a partition. The purlins and roof rafters are not old. The trusses are certainly old timber but in their present form seem to be reused material, probably re-erected in the 18th C.

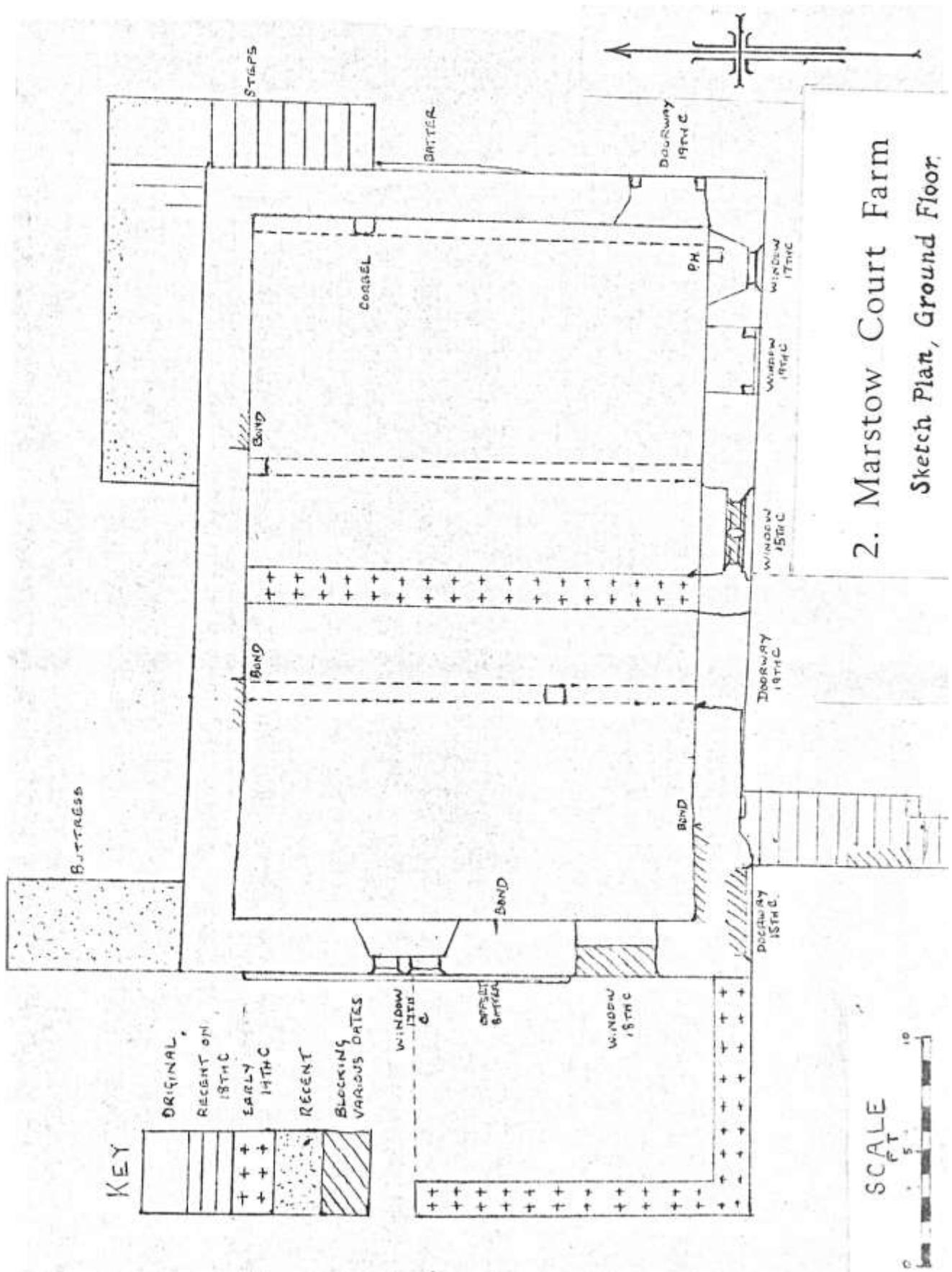
The S wall near its E end shews a considerable turning outwards towards the angle. This has been strengthened by a massive sloping buttress of recent construction. A strange feature about the building is the lack of an identifiable fireplace.

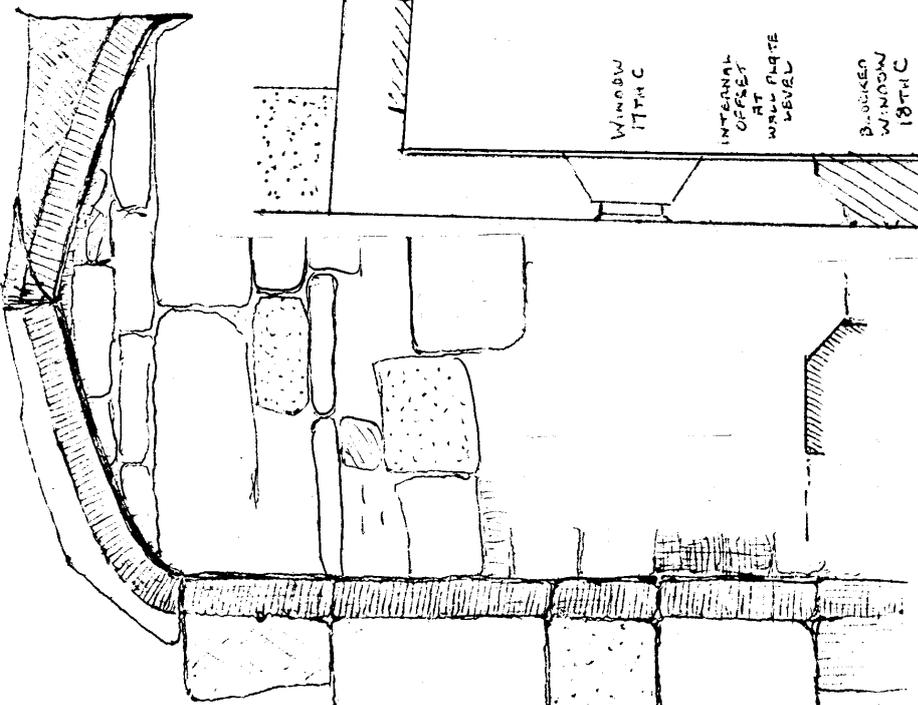
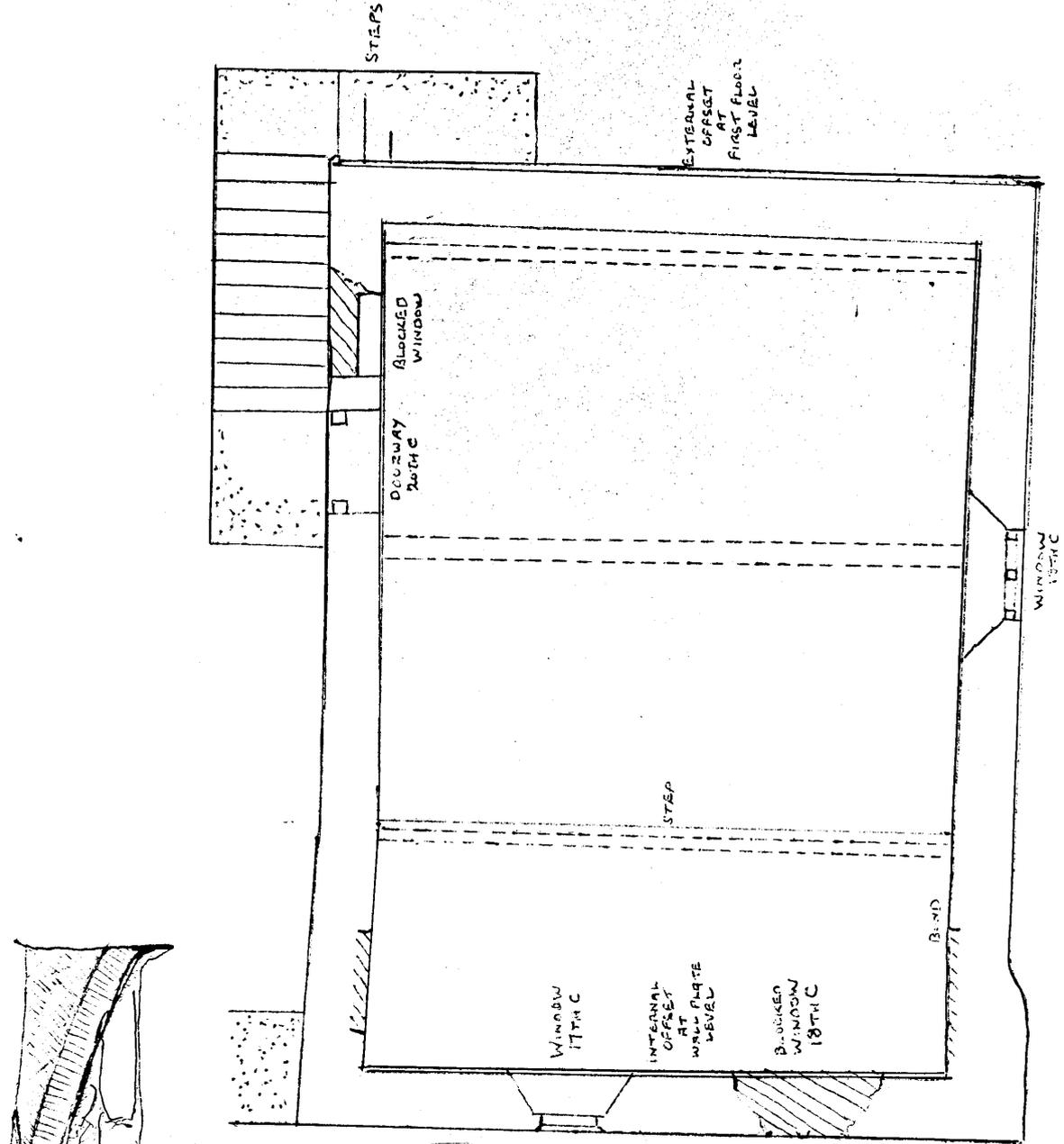
The farm buildings to the N contain old work mostly of the 17th and 18th C whilst in the basement of the present farmhouse there is a doorway of red sandstone with a chamfered two centered obtusely pointed head of 14th C form but probably a Victorian copy. Lying loose are portions of chamfered mullions and built into the garage wall there is a small pointed chamfered light of 15th C form carved out of a single stone. A detached building in the field nearby appears to be of early 18th C date. At the foot of the slope to the E of the farm and on the flood meadows of the River Garron is the enclosure and site of St Martin's Church, demolished in 1855. None of the material in the building described in the above paragraphs would appear to have come from this source.

R E Kay

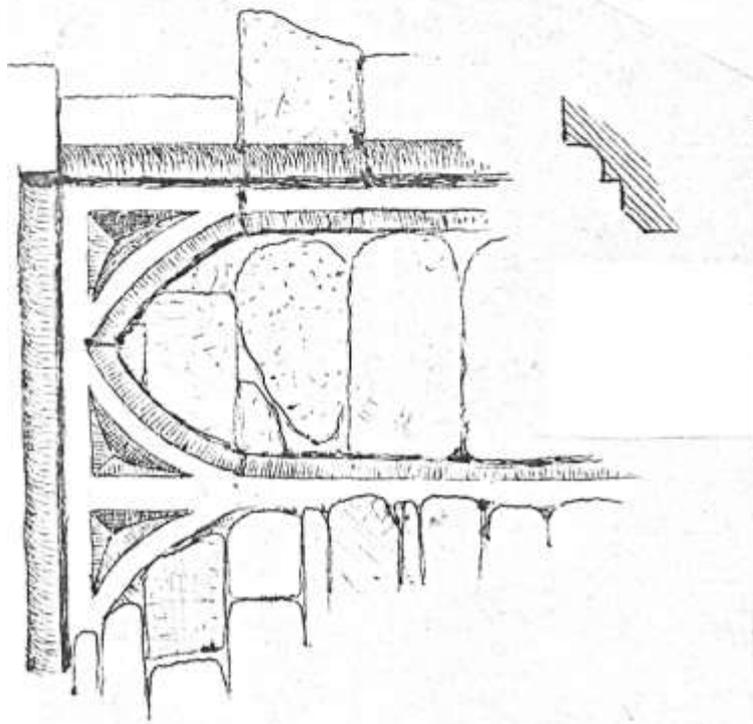


1. Marstow Court Farm, South Aspect.

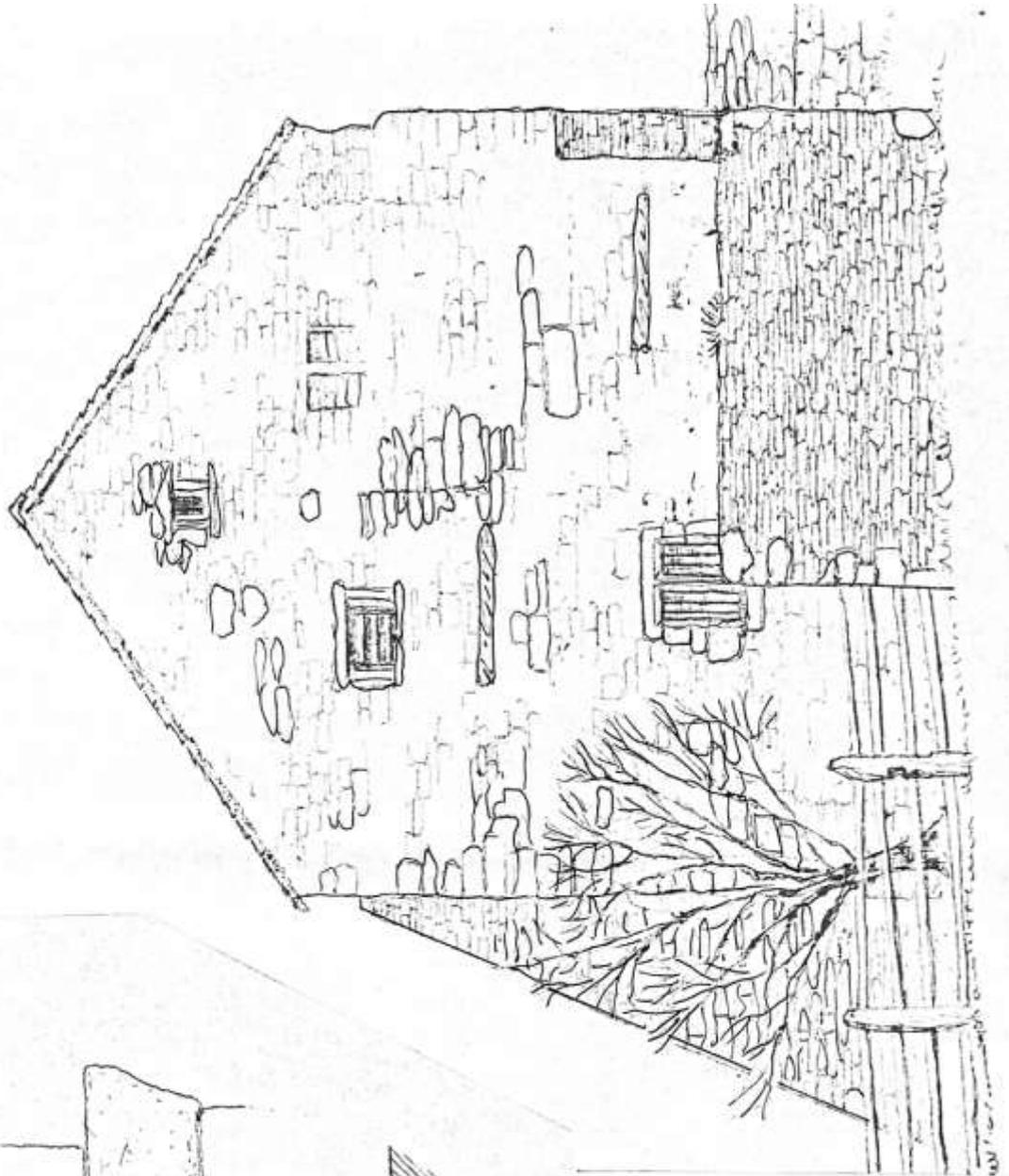




Detail - Doorhead 1" = 1'
 3. Marstow Court
 Farm
 Sketch Plan, 1st Floor



Detail - Window 1"=1'.



4. Marstow Court Farm
West Aspect

A SAXON SPEARHEAD FROM THE RIVER LUGG AT LUGG MILLS, HEREFORD

By W R Pye

In writing this article I would like to express my thanks to the author of the Metallurgical Report, A J Brightmore and to his Company, Messrs Henry Wiggin and Co Limited, of Hereford, whose expertise and generosity provided such an excellent report, for permission to reproduce material from it and to H Gayter, whose good offices were instrumental in its inception.

Thanks are also due to Professor A G Smith, Head of the Department of Botany, University College, Cardiff, for the report on the wood from the spear shaft. To Miss C Bloxham, Miss C F Chitty, C J Dunn, Dr W Manning, F Noble, A J Parkinson and Dr M J Swanton, for discussion and advice regarding it. Also to the Curator (N Dove) and staff of Hereford City Museum (where the full metallurgical report is to be seen) for making the spearhead available to me.

Discovery and Location

During the summer of 1973, the Herefordshire County Council commenced a bridge widening scheme at Lugg Mills, near Hereford. In the late summer, following some dredging, divers were called in to inspect the submerged river banks etc, for scouring. During this process one of the divers cut his hand on a metal object and upon investigation a second diver brought up a Saxon spearhead. This was taken to the Hereford City Museum, where the importance of the find was recognised, and it was thus presented to the Museum by the Herefordshire County Council, as Accession No 9936.

The site of the find at Lugg Mills is seen on the OS 1" Map No 142 Hereford at NGR 53134178. This is immediately on the lower side of the Lugg Mills (widened) Bridge, under the right banks of the river (Parkinson and Pye 1972).

Description

The spear has a total length of 357mm. This length is made up of three sections: (a) The blade which has a total length of 204 mm. (b) A plain, undecorated shank, from the base of the blade to the balustered first wire-winding, being some 30mm in length. (c) The socket, a decorated section, having ten wire windings up to the distal end of the spear, making up the socket, with a length of 123mm.

The coloration of the blade is grey-green towards the tip, with black patches around the damaged central portion of the blade, becoming black and red-brown on the shaft and socket with the wire windings showing up black with a golden surface colouration in places.

(A) The Blade has a shoulder width of 53mm and maximum sectional thickness of 9mm, 168mm from its tip. From this point to the base of the blade is some 36mm. Within this, corrosion emanating from a slight bend (from 128-170mm from its tip) has badly damaged the blade, and a small fragment 6 x 4mm is actually missing. However, this has revealed the structural build-up of the blade by pattern welding techniques,

From the base of the blade and on either side of it, some corrosion lines stretch forward to its shoulder, where a width of 10mm is attained. From this point forward the lines turn towards the tip of the spear, keeping approximately parallel with the edges of the blade, coming together from either side 103mm from the point, but continuing until it is reached.

In the central portion of the blade and surrounded by the parallel lines described, are more corrosion lines. In this case they are chevron-shaped and in two rows, the central spine of the spear being their dividing line. A peculiarity of this is that on the one side of the spear the chevrons face forward, on the other backwards.

(B) The Shank section of the spear is included in the sweep from the shoulder of the blade to the balustered first wire-winding – a distance of 70mm which may be represented by an incut of 5mm from this line to the base of the blade and 35mm from its shoulder.

The diameter of this section immediately before the first winding is 12mm and from this point to the tip of the spear is a uniform taper.

(C) The Socket. This section is decorated by ten wire windings. Given below are the distance of these windings from the tip of the spear, and bracketed are the actual widths of these windings. 234mm (3.5); 255mm (2.0); 267mm (2.5); 280mm (2); 292mm (2.0); 304mm (2.5); 317mm (2.0); 328mm (3.0); 338mm (2.0); 346mm (2).

(D) In places it appears that the wire in these windings has been plaited. These, of course, are only on the metal and have presumably burst on the open part of a split socket, which is round-ended and is 98mm in length from the butt of the spear. The width of the split is 2.5mm at its narrowest point, the width at the distal end being distorted through the socket being forced open to approximately 20mm when its wooden shaft was broken.

At 333 and 348mm from the tip of the spear, and 6mm from the edge of the split and on either side of it, are nail holes, i.e. a total of 4 holes of 2.54mm diameter. Within the socket was part of the wooden shaft, with a length of 82mm and a dry weight of 3.1gms. The butt end of this wood showed a break which coincided with the damage to the socket.

Report on the Wooden Shaft by Professor A G Smith, Head of Department of Botany, University College, Cardiff:-

"The wood is of ash (*Fraxinus Excelsior*) ... It appears, however, not to be the centre of a single stem but at the narrower end to have been cut from approximately the tenth to twentieth year's growth. The tree was apparently very slowly grown and must have been living in rather marginal conditions."

Metallurgical Report - condensed from Messrs Henry Wiggins' Technical Department Report TR 2318

Metallurgical Examination of Anglo-Saxon Spearhead by A J Brightmore (figs 1a, 1b and 1c)

The spear (Fig 1) was non-destructively examined by means of superficial microscopical examination, X-ray radiography, X-ray analysis of surface scale and electron beam micro-analysis.

Visually, the interesting feature was the presence of chevron shaped grooves on either side of the wedge shaped area bounded by two lines faintly visible in Fig 1b, and believed to mark the junctions of blade and shank.

The socket has been made from metal about 1.3mm thick at most. Its external surface bore the peripheral wire windings (of scale), partly embedded in which were clusters of tiny globules, most of which had a dull, leaden appearance, but some were of a lustrous brass-yellow colour. They vary in diameter from about 0.13 – 0.51mm and were non-magnetic.

Radiographic Examination X-ray radiographs were made by Gamma Rays Ltd of Halesowen. These showed that the blade had been constructed from three pieces - the shank of Tang A, joining it to the socket, the V-shaped inner piece B.2 (see figs 1a, 1b and 1c) enclosing part of the tang or shank and terminating at the fissure, and the outer piece C, partly surrounding B. Two narrow zones D1 and D2 ran from the fissure towards the blade edges at its shoulder and were concluded to be the lines of welds. The tang appeared to be integral with the socket, but this was disproved by subsequent metallographic examination.

The inner piece B showed a complex pattern of impurity similar in appearance and location to the surface pattern (fig 2). The outer piece C contained large isolated patches of impurity in a background of slighter streaks of impurity orientated along the blade.

Metallographic Examination Three regions were selected for examination as shown in fig 2 - the inner and outer pieces, and the tang. The side of the spearhead examined was as fig 1b. In addition a transverse microsection was prepared from the rear end of the socket. Finally a few of the leaden coloured globules from the surface of the socket and two of the brass-yellow ones were sectioned metallographically.

Area A – tang (shank). The metal base was remarkably clean, consisting of substantially carbon-free iron with a grain size of about 5 on the ASTM scale. It appeared that the metal had been cooled from above about 900°C and had not been substantially cold-worked.

Area B – situated about 6.3mm from the blade edge, where the scale was smooth, and was chosen to avoid damaging the pattern. It included part of a faint groove visible in fig 1b near the left hand edge of the blade shoulder. The groove is evidently the trace of the weld line D1. The weld junction is shown. It is sound here but contains some inclusions of oxide. The metal above it is part of the outer piece of the blade and consists of ferrite and a barely resolvable phase considered to be troostite (a lower temperature transformation than pearlite). The carbon content was estimated at about 0.2%. The zone contained many globular inclusions of slag.

Below the weld is part of the inner section of the blade, and the estimated carbon content progressively increased from less than about 0.05% (Zone 2) to about 0.3%. Small streaks of slag were present. The metal of this area appeared to have been cooled rather quickly from a high temperature, but insufficiently fast to transform to martensite.

Area C – the outer end of the blade; this showed more variation in carbon content than Area B, and consisted of regions with an estimated 0.4 -0.5% of carbon alternating with regions of ferrite. Streaks of slag were also present.

None of the foregoing regions showed any evidence of cold working.

Socket The polished cross section of the wall of the socket had a uniform microstructure of grains of finely-lamellar pearlite enclosed by a network of ferrite and containing intragranular ferrite in a semi-Widmanstätten pattern. The carbon content was estimated at 0.5-0.6%. The iron carbide lamellar of some of the pearlite grains had broken down to spheroidal particles and carbides were present at some grain boundaries – this indicated that the metal had been re-heated briefly to a temperature somewhat less than the eutectoid temperature of 700 degrees C. There was no evidence of cold working.

Microindentation hardness tests gave a reading of 187-206 DPN – normal for such a structure.

Globules from the surface of the socket The sectioned globules varied in diameter from about 0.13-0.63mm. Microscopically, both dull-surfaced and brass-yellow globules were apparently metallic and of identical pale yellow coloration. Both types contained inclusions resembling silicates, frequently needle-shaped and arranged in a radiating pattern, suggesting the solidification of molten droplets; the dull coated had surface oxidation, whilst the yellow had none.

As etching revealed no structure, it was suspected that the globules were not metallic, but a mineral.

Electron beam Microanalysis This was carried out on the globules.

The masses of oxide type material in which the globules were embedded were predominantly iron oxide. Silicon, aluminium and calcium were present in varying

proportions, together with traces of tin, zinc, magnesium and phosphorous. Copper was not detected.

Both types of globule consisted of a copper-rich copper/iron sulphate. It was concluded, therefore, that they were chalcopyrite ($\text{Cu}_2\text{S Fe}_2\text{S}_3$), containing 30-35% copper.

Tested against known iron pyrites in microindentation hardness tests, the globules of copper pyrites had a hardness of 330-350 DPN. These results are in qualitative agreement with the Moh's (scratch) hardness values of 3.5-4 quoted by Rutley (1919).

X-Ray Analysis of Surface Scale Two small fragments of scale from the surface of the blade and socket respectively were subjected to X-ray diffraction analysis by the Debye-Scherrer powder method, using filtered CoK and radiation.

That from the blade consisted almost entirely of ferrous carbonate or siderite (Fe_2CO_3) with traces of chalcopyrite and of the alpha-quartz form of silica.

That from the socket was largely siderite and also contained a variable quantity of chalcopyrite and a trace of alpha-quartz.

Oxides of iron such as Fe_2O_3 , Fe_3O_4 , etc, were not detected.

Discussion on the Metallurgical Report The restriction on the scope of this examination precluded chemical or spectrographic analysis, but the microstructural variations indicate a variation in carbon content from less than 0.05% to 0.6%. According to analytical data quoted by Tylecote (1962) for iron objects of the Roman Iron Age and the ensuing "Dark Age", the probable contents of the impurities are: manganese up to 0.05%, silicon up to 0.1%, sulphur up to 0.03% and phosphorus up to 0.4%.

The spearhead had been built up from four separate pieces; the socket, made up of thin strip, into which the wooden shaft was fixed; a tang (or shank) forming the spine of the blade and joining it to the socket, and the blade, which itself consists of two pieces. The four pieces were joined by "smith-welding" i.e. pressure welding in the solid state by hammering at high temperature, ideally at least for $1,000^\circ\text{C}$. This temperature could readily be achieved in a bellows-blown charcoal fire.

The radiographs show that the inner piece of the blade has been made by the so-called "pattern-welding" technique, the term coined by Maryon (1948), who also described the process in detail (Maryon 1960 and Tylecote 1962).

The technique was widely used in Western Europe in the Anglo Saxon and Viking periods for the production of spear and sword blades.

The pattern, which was visible on the surface of the blades, was not primarily for ornament, but was a by-product of the mode of manufacture, the object of which was to provide a blade with a better combination of hardness and ductility than the one-piece iron or low carbon steel blades previously used.

The pattern was caused by the flattening of the spiralled pieces during forging and would be visible in the surfaces of the finished blade by difference in reflectivity and atmospheric corrosion-resistance of the low and high carbon regions.

The presence of a weld between the two parts of the blade has been confirmed microscopically at the examined area of the inner piece of the blade. The overlying scale at this area did not show the characteristic "pattern", which suggests that this particular region of the blade had not been made from twisted elements; it may be part of one of the pieces that were usually welded onto the edges of the assembly to form the cutting edges.

However, from previous metallurgical examination of pattern-welded sword on spearheads, Schurmann and Schroer 1959 e.g. 5 and 6, A E P Collins and H H Beeny, there can be no doubt that a similarly heterogeneous structure is present below the scale pattern of fig 2, with the regions of varying carbon content forming a complicated pattern like that in the overlying scale, which has corroded preferentially. Variations in the slag content also can influence susceptibility to corrosion.

The outer part of the blade has a heterogeneous surface microstructure and the radiograph shows the faint longitudinal streaks and isolated larger areas of impurity. This part of the blade may have been made by simply 'piling' lengths of this, lightly carburized strips, welding them together and forging the whole to shape. The presence of a streak of martensite shows that this part of the blade has been quenched in water from a high temperature in an attempt to produce higher hardness. It is likely that the whole blade was heated and quenched, but for some reason, probably too low a hardening temperature, the critical cooling velocity was generally not achieved, so that virtually all the hardenable regions transformed to a higher-temperature product, probably troostite.

The socket at the location examined (furthest from the blade) has a very uniform structure of ferrite and pearlite of quite high carbon content. The partial decomposition of the pearlite was probably caused by heat flowing from the blade end of the socket when this end was locally heated for welding it to the tang. The general Widmanstätten-type microstructure of the socket is consistent with cooling from a very high temperature (over 1,000°C) after a previous hot-working operation – presumably when it was forged from a thicker section.

It is interesting that the blade has been made from two pieces, and since the purpose of the pattern welding was to provide a stronger and tougher blade, it would be logical to make the whole blade in this way, whereas its outer section has not been pattern-welded. This could suggest that the spearhead was originally a fully pattern-welded one – that broke and was re-built by replacing its broken end by a piece of plain or 'piled' material. Another possibility is that it was made from the hilt end of a broken pattern welded sword. Oakeshott (9) mentions a famous spear "Grasida" which began in the 8th Century as a sword, was remade as a spear and was still in use in the 13th Century.

The severe corrosion at the apex of the V-shaped weld between the two parts of the blade is probably the result of original unsoundness in the weld at this point. The appearance suggests that during its period of service the blade suffered a sharp blow that deeply notched its edge and ruptured the end of the weld. This damage is thought to have initiated "crevice-corrosion" during its subsequent burial. The same blow could have caused the observed distortion of the socket.

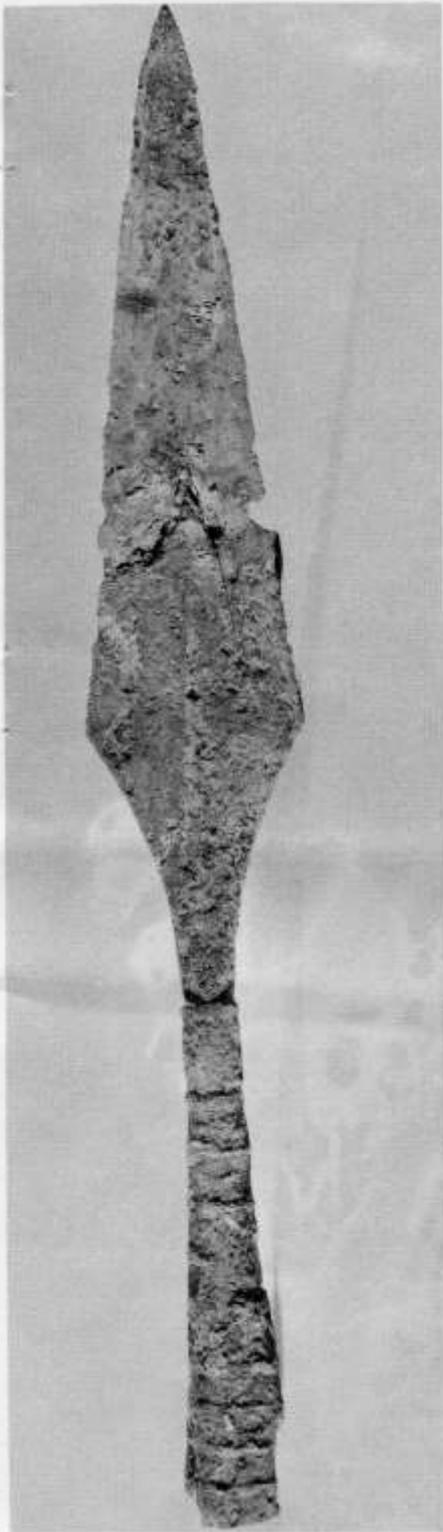
The chalcopyrite globules on the socket are an interesting feature. It is clear they were deliberately applied for decorative purposes, and it may be assumed that they then had their natural yellow colour, most of them becoming oxidised during burial of the spearhead. Hence they may have been used in the belief that they were gold. The globules have obviously been formed by fusion from the molten condition, but it is uncertain whether they were applied in solid form to the socket, presumably in some kind of paste carrier, or whether they were formed in situ by some thermochemical process. Two possibilities are envisaged:

1. The globules were a by-product of the melting of copper ores containing chalcopyrite, traces of which escaped reduction, and fused. Under the reducing conditions they remained clean, and detectable, and their gold-like colour would make them a saleable product.

2. They were formed in situ by applying to the socket a paste containing ground chalcopyrite and heating under suitably reducing conditions. These could probably be provided by incorporating charcoal in the paste. However, the melting point of chalcopyrite is probably at least 1,000°C, and the structure of the socket (at its rearward end) suggests that the temperature to which it was last heated did not exceed about 700°C.

However produced, this method of ornamentation of spearhead sockets could have been fairly common in Saxon and Viking times, but remained unnoticed because the sockets of most spearhead finds are in relatively poor condition, by reason of their thin walls.

In this respect this spearhead is exceptional for its remarkably good state of preservation. "There many a warrior lay destroyed with spears ..." Anglo Saxon epic poem, "Brunanburh".



(a)

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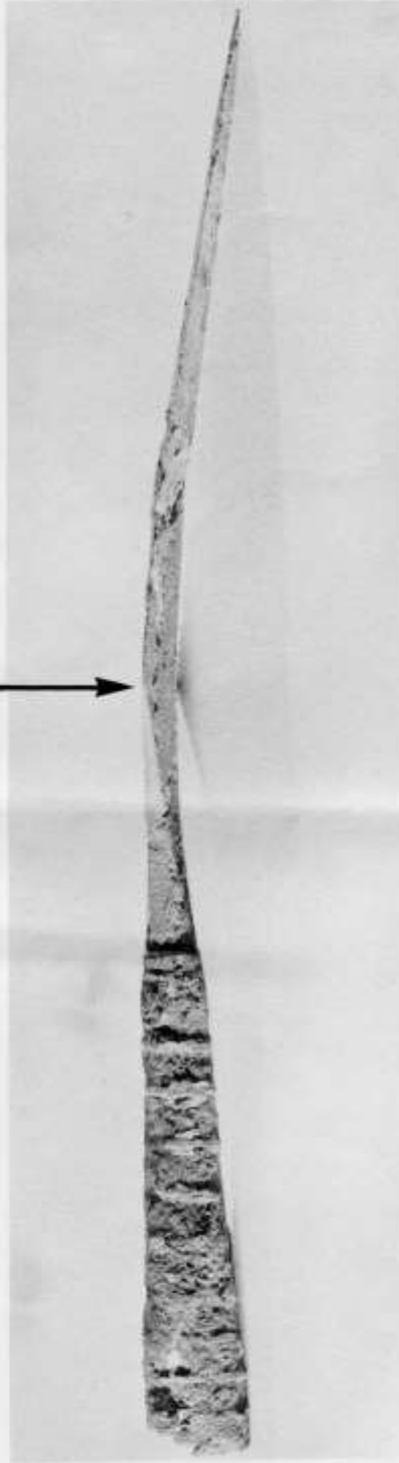


(b)

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Fig.1 x 2/3: general views of the spearhead

Side of spearhead shown in Fig. 1b



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Fig. 1c x 2/3

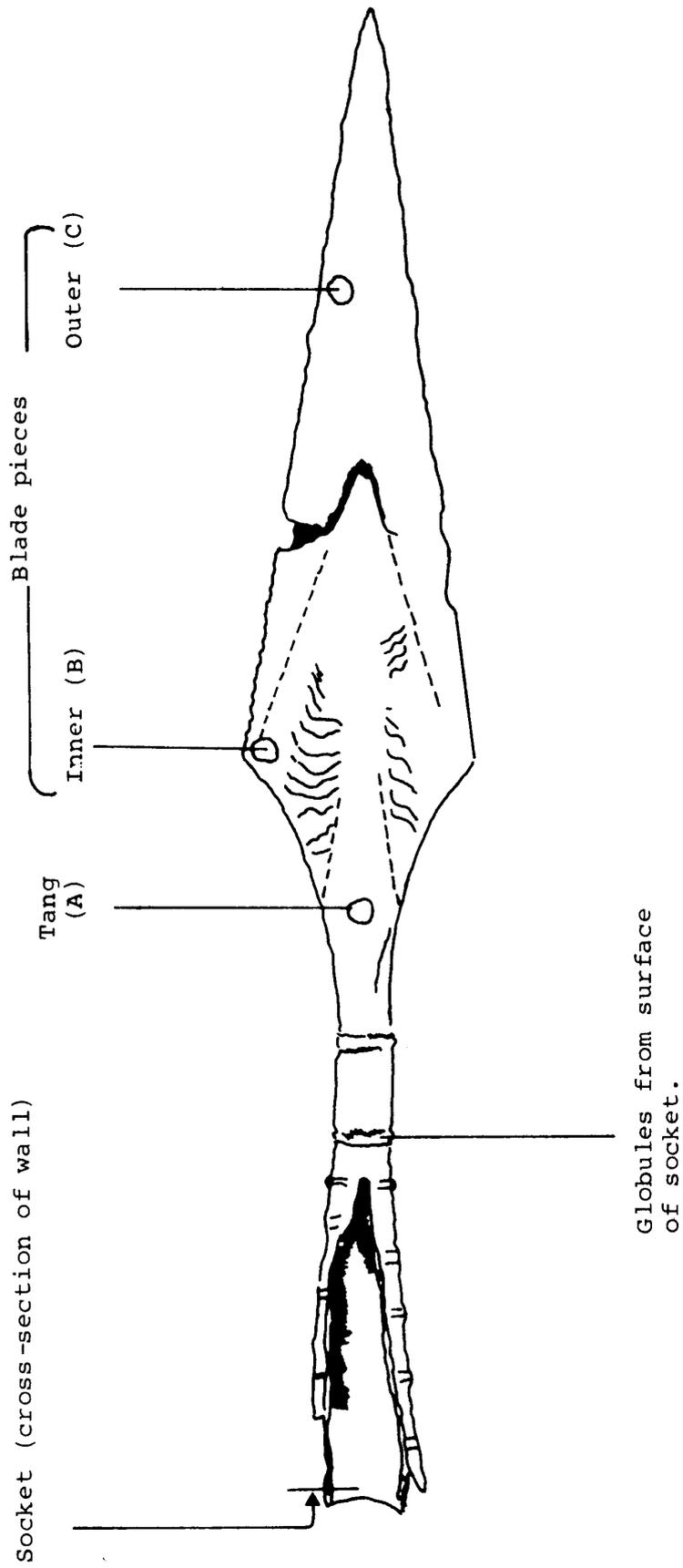


FIG. 2.
Regions examined metallographically.

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HALL COURT FARM, MUCH MARCLE, HEREFORD (SO 645353)

Interim Note

A sub-circular moated site threatened by ploughing. A section through the moat (2.5m deep and 9m wide) showed it to have been deepened (by cleaning-out operations?) during the early part of its life. Primary silts were clean, whereas later silting contained much vegetable matter (small branches, leaves, walnut shells etc). No domestic rubbish was found in these levels, and no date can be given for their deposition. The sequence continued with destruction debris from the enclosed buildings and late Medieval and XVI pottery.

An area (20.2m x 13.6m) of the moated platform was examined, revealing a complex of late Medieval structures, most of which had been demolished around 1600. The stone foundations courses, sometimes irregular in form and discontinuous due to robbing, probably supported timber-framed structures to which small scale alterations or repairs using brick had been made. The area examined was not large enough to show any one structural element completely in plan.

One building, or wing, in approximately the centre of the moated area appeared to have been a superior type of structure. Extensive robbing of the foundations and decorated tile floor had taken place. There was a quantity of roofing tile and window glass among the destruction debris. To the south lay an apparently separate building with a clay floor and a large pitched stone hearth centrally placed. A substantial external drain flanked its east wall. Although decayed, this building had evidently been repaired and maintained in use during, or even after, the destruction of the other structures. An apparently smaller building lay adjacent to, and to the west of, the first two, close to the conjectured position of the entrance to the site. Only a small part of this structure was uncovered; its nature and function could

not be determined. Further excavation on a wider scale is necessary if a full interpretation of these and earlier phases of occupation is to be made.

No documentary evidence for the site has been found, although work on this is continuing.

A number of acknowledgements are due, particularly to Mr and Mrs R D Marcon owners of the Hall Court estate, both for permission to excavate, and for their help and forbearance throughout. Mr Phillip Powell of Hall End Farm helped greatly in the matter of accommodation, and I should like to thank him also. Mr C J Bond, my former colleague, carried out a survey of the earthworks and soil-marks around the site. Last but by no means least, my thanks to all who took part in the excavation, particularly to Eric Smith, Cliff Denham, Val Thomas, Mike Knight, John Clark and Harold Mytum, who carried much of the burden of supervision and recording.

A M Hunt
County of Hereford & Worcester
Archaeology Department
January 1975