

TRANSACTIONS
OF THE
WOOLHOPE
NATURALISTS' FIELD CLUB
HEREFORDSHIRE

"HOPE ON"



"HOPE EVER"

ESTABLISHED 1851
VOLUME XLIII 1981
PART III

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<i>Address of Hon. Secretary:</i>	<i>Address of Hon. Asst. Secretary:</i>	<i>Address of Hon. Editor:</i>
Mr. F. M. KENDRICK 40 Stanhope Street Hereford	Mrs. M. TONKIN Chy an Whyloryon Wigmore Leominster HR6 9UD	Mr. J. W. TONKIN Chy an Whyloryon Wigmore Leominster HR6 9UD

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Proceedings, 1981

SPRING MEETINGS

FIRST MEETING: 10 January: Mr. F. M. Kendrick, president, in the chair.

Mr. J. W. Tonkin, B.A., F.S.A., gave an illustrated talk on 'Historic Herefordshire Villages'. He dealt with the difference between Celtic and English settlement patterns and the type of village they produced, the Saxon open-field village along a street or around a village green and the western cluster of hamlets. He outlined the development from the Iron Age hill-top villages through the Roman times to the Saxon penetration up the river valleys as shown by place-names; the early boroughs with their triangular market-places; the growth of villages in the shelter of many of the county's castles and around the bishop's manor-houses, and how industries such as iron-working, gravel extraction, hops and cider had encouraged village development. Some villages had moved to escape flooding and estate villages had been built to the taste of the local landowner.

SECOND MEETING: 7 February: Mr. F. M. Kendrick, president, in the chair.

Mr. R. Shoesmith, director of the city of Hereford committee for archaeology, gave an illustrated talk on 'Conclusions on 15 Years of Excavations in Hereford City'. He referred to the small excavations by Heys and Norwood in 1958, Blueschool Street in 1965-6, Stanford in Bath Street 1966, Noble and volunteers in Victoria Street 1967 and the major excavation by Rahtz and Grey in 1968. These took place because of the ring-road development. The Saxon defences were exposed with late 7th or 8th-century grain-drying ovens and timber-framed buildings showing in the ramparts. Further small-scale excavations have been made on Castle Green, St. Guthlac's cemetery, Berrington-Victoria Streets areas in 1972, and more recently in Cantilupe Street, the National Car Park, the bishop's palace garden, and in King and Bridge Streets. It is now generally understood that the cathedral and St. Guthlac's area with Berrington and King Streets to the west existed in the 7th century with a population of 250-500. By the 11th century the town had extended to the north beyond Bewell Street whereas in the 8th and 9th centuries East Street/West Street was the boundary. The population had increased to 500-1,000 by the mid-12th century.

THIRD MEETING: 7 March: Mr. F. M. Kendrick, president, in the chair.

This was the open meeting held in St. Peter's Hall as the annual F. C. Morgan lecture. Mr. John Workman, O.B.E., M.A., consultant to the National Trust, gave an illustrated talk on 'The Management of Woodland Nature Reserves'. He explained that primary woodland was woodland which had never been cleared for

agriculture, that secondary woodland was woodland which had been replanted. A nature reserve should be an area of at least a square mile so that all needs could be accommodated. A true reserve is a living museum and they all differ.

SPRING ANNUAL MEETING: 28 March: Mr. F. M. Kendrick, president, in the chair.

The assistant-secretary reported that the club now had 798 members.

The president reviewed the year's activities and gave his address 'Thomas Andrew Knight—A Plant Scientist' which is printed on pp. 249-53.

Mrs. M. M. Voss was installed as president for 1981-2.

FIELD MEETINGS

FIRST MEETING: 25 April: HOARWITHY AND SELLACK AREA

Visits were made to Hoarwithy Church to see the brick church of 1843 which c. 1885 was encased and made to look like a south Italian Romanesque building with a Byzantine east end; King's Cagle Church dating from the 13th century with the Aramstone Chapel of c. 1400, and box pews in the nave; Sellack Church, dedicated to St. Tysilio and mainly 12th century with an east window, gallery and pulpit c. 1630; Foy Church mainly 13th century with an east window similar to the one at Sellack but dated 1673.

SECOND MEETING: 21 May: ST. WEONARDS AREA

At Furnace Farm the site of one of the south Herefordshire iron furnaces was visited. It was probably in use by the mid-17th century and supplied iron for the forges at Llancillo, Pontrilas and Peterchurch. It was rebuilt in 1720 by William Rea and ceased production in 1731. Its site can be identified as abutting on a low bank. A leat from the Garron Brook can be traced to near where the bellows water-wheel house stood. A later building on the site was used as a paper mill.

Members were welcomed by the Mynors family at Treago. The manorial barn was built in 1664. The house, square in plan with cylindrical towers dates from the late 15th century and after 1660 an ornamental plaster ceiling, oak panelling and an internal staircase were added. In the 18th century a smoking room in the Gothick taste was made in the top storey of the south-east tower. In 1840 and 1970-1 repairs and improvements were carried out. At St. Weonards Church, dedication unknown, and dating mainly from the 14th century, the Mynors Chapel and tower added in the 16th century were seen.

THIRD MEETING: 13 June: BRAMPTON BRYAN AND MORTIMER FOREST AREA

Mr. C. C. Harley after giving an account of its trees took members around the park pointing out the fine oaks, sweet chestnuts and conifers. One of the sweet chestnuts at 5 ft. from the ground measured 27 ft. 3 ins. In 1870 when the club visited the park the average girth of the sweet chestnuts was 15 ft. 2 ins., thus a growth of 12 ft. 1 in. in 111 years.

Practically the whole party walked from Aston Pitch to the Forestry Commission Centre on Whitcliffe. En route a number of geological exposures of the Silurian system were visited and the geological formations and fossils noted. Tracks of deer were also seen. Mr. John Speed, a deer warden, took members to see the deer pens in the forest and explained the various experiments which were being carried out by the University of Reading.

FOURTH MEETING: 11 July: FOREST OF DEAN AREA

At Flaxley Abbey, the owner, Mr. F. B. Watkins, gave an account of the site. This Cistercian abbey was founded c. 1148 and monastic remains were seen in the 12th-century rib-vaulted undercroft, the 14th-century abbot's guest hall in the west range. The Boevey family remodelled it in the late 17th century and Anthony Keck added the south wing in 1777-83 in the Adam style. The site of the old blast-furnace at Gun Mills was visited. At Clearwell Castle, Mr. B. Yeates, the owner, explained the restoration work since 1954 after the building had been gutted by fire in 1929, rebuilt by Col. Vereker and after his death in 1947 had fallen into decay. It had been built c. 1740 in the Gothick style for Thomas Wyndham with alterations in the 19th century by Caroline, Countess of Dunraven.

FIFTH MEETING: 20 August: WOLVERLEY AND HAGLEY HALL AREA

This meeting was a follow-up to Mr. Page's 1979 presidential address. At Wolverley the church of red brick built in 1772 with three galleries, the Sebright School founded in 1620 but largely dating from 1829 and the Knight house c. 1760 with seven bays in brick, were seen. Hagley Hall, built 1756-60, for the first Lord Lyttelton, and now the home of Lord and Lady Cobham was visited. It was designed by Sanderson Miller in the Palladian style and in 1926 was well restored after severe damage. The Tontine Inn opened in 1788 by the canal company at Stourport-on-Severn was seen.

SIXTH MEETING: 12 September: SHROPSHIRE AND POWIS AREA

The first visit was to Richards Castle Church designed by Norman Shaw, built 1891-2, costing £12,000 and given by Mrs. Johnston Foster and her two daughters in memory of her husband and eldest daughter. The next visit was to Adcote, now a school, in Little Ness parish. This was designed by Norman Shaw, built

1876-9, for Mrs. Rebecca Darby, and shows him at the height of his power as a country-house architect. Powis Castle with its magnificent grounds, vested in the National Trust before the death of the 4th Earl in 1952 was also visited. It has been the home of the Herbert family since 1587 and alterations have been made by William Winde in the late 17th century, Thomas F. Pritchard in 1772, Smirke in 1828 and G. F. Bodley in 1902.

SPECIAL MEETING: 2 July: KENFIG DUNES

This meeting was to the nature reserve at Kenfig dunes and pool in mid-Glamorgan. A great variety of flowering plants, numerous dragonflies, butterflies and moths were seen. The pool is a breeding place for frogs, toads and newts. Of special interest was the marsh helleborines and yellow birdsnest, a saprophyte growing on decaying vegetation. Orchids of different species were growing in profusion.

WINCHESTER VISIT: 5-12 August

Fifty-two members spent a week at King Alfred's College, Winchester and on the way there visits were made to the two churches of St. John and St. Mary's at Devizes, both containing Norman work, as well as the early Bronze Age stone circle at Avebury and Hurstbourne Tarrant Church.

On Thursday visits were made in Winchester to the Great Hall, the Cathedral and its library and the City Museum; to Jane Austen's house at Chawton; to Selborne to see the work of Gilbert White and the watercress beds near Meonstoke.

The Norman abbey at Romsey, Lyndhurst Church dating from 1860 with work of the pre-Raphaelites, Beaulieu with its house, church and motor museum, and Minstead Church, were all visited on Friday and a walk from Beaulieu village to Buckler's Hard was much enjoyed.

On Saturday visits were made to the Sandham Memorial Chapel at Burghclere to see the work of Stanley Spencer, 1927-32, depicting his personal impressions of World War I; to Stratfield Saye built c. 1630 and given to the Duke of Wellington after his victory at Waterloo in 1815; to Hartley Wespall Church to see the unusual 14th-century timber-framed exterior west wall; and to the Vyne, built in brick 1518-27 for Lord Sandys.

Sunday morning was free but after lunch members walked around the Hillier Arboretum and then visited Broadlands, the home of the late Earl Mountbatten, which in 1766-88 was changed into a Palladian mansion by Lancelot Brown and Henry Holland. Some members went to a musical evening at New Hall, Winchester College, and at 3 a.m. practically the whole party was out on the car park, the fire alarm having sounded.

Monday morning was spent in Winchester visiting the Hospital of the Holy Cross founded in 1136 and Winchester College founded in 1382 by William of Wykeham. Salisbury Cathedral and Mompesson House in the Close built in 1701 were visited in the afternoon.

On Tuesday a visit was made to Mottisfont Abbey which was founded in 1201 and after the Dissolution the nave was converted into a house by Lord Sandys. Further alterations were made c. 1740 and in 1938-9 Rex Whistler painted the ceilings and walls of the hall creating a saloon. A walk in the New Forest included a visit to the Rufus Stone and the day's tour ended with a visit to Braemore House, built in brick in 1583 and the adjoining Saxon church.

On the way home on Wednesday, the silk mill built in 1815 at Whitchurch, the early Bronze Age stone circle at Stonehenge and Westwood Manor dating from c. 1400 were visited. Tea was taken in the restored late-medieval priory barn at Bradford-on-Avon and the Saxon church there was visited.

Evening lectures were given by Mr. K. Rushforth, B.Sc. on the history of the Hillier Arboretum and Mr. K. Qualman, head of the Winchester Archaeological Unit, on the excavations which have taken place outside the Winchester city walls since 1970. On the Friday evening members attended a barbecue arranged by the Hampshire Field Club and Archaeology Society.

AUTUMN MEETINGS

FIRST MEETING: 3 October: Mrs. M. M. Voss, president, in the chair.

Mr. J. W. Tonkin, B.A., F.S.A., gave an illustrated talk on 'Herefordshire Religious Houses'. He explained the many different religious orders of monks, friars and nuns, with their foundation dates, from the Benedictines through to Austin Friars, and the Knights of St. John and the Knights Templars. He included the collegiate churches where a group of priests lived together and served a number of surrounding parishes. He described a typical site layout and the daily monastic life. The religious orders were dissolved at the Reformation. Most of the buildings and sites are in a ruinous and fragmentary state, but in some cases, e.g. Wigmore Abbey, the monk's refectory has been converted into a house and remodelled over the centuries.

SECOND MEETING: 24 October: Mrs. M. M. Voss, president, in the chair.

Mr. H. J. Powell, F.R.I.B.A., gave an illustrated talk on 'The Perpendicular Style of Architecture in Herefordshire' which is printed on pp. 298-306.

Some Notes on the Botanical Work of Thomas Andrew Knight of Downton

By F. M. KENDRICK

THOMAS Andrew Knight enjoys a considerable reputation both at home and abroad for his contributions to horticulture, but his work in the field of experimental botany does not seem to be so well known. The club *Transactions* of 1869 (p. 58) makes only a brief reference to his botanical work. This may be because plant science is basic rather than immediate to human affairs and does not as a rule enjoy a bold type of headline. It was with the hope that a little could be done to remedy this omission that some of the local records of the Knight family in the County Record Office were consulted.

Thomas Andrew was born on the 12 August 1759, the youngest son of Rev. T. Knight of Wormsley Grange, a property that had been purchased for his father by the trustees of Richard Payne Knight, the ironmaster. It seems that in his early years he received little formal education, but had obviously developed a leaning towards biological experimentation. It is on record that one experiment he conducted was to place a spider on a piece of wood floating in a bowl of water and observe that it was able to effect its escape by standing on its head and emitting a thread from its tail allowing the wind to carry this to some sticks which had been placed at the side of the bowl to which it adhered.

His father died when he was nine years of age and shortly after this he commenced his formal education at Ludlow Grammar School. He subsequently was transferred to a school at Chiswick, no doubt to prepare for his entry to Balliol College, Oxford.

At Balliol he seems to have had the normal classical education of the day, but he came under the influence of a Dr. Baillie, a noted physician of that time, and also became an intimate friend of Dr. William Hunter. This led to him developing an interest in Mineralogy, Chemistry, Botany and Agriculture.

In 1791 he married Frances Felton of Woodhall, near Shrewsbury and took up residence at Elton in Herefordshire. They had three daughters and Frances born in 1793, who later became Mrs. Stackhouse Acton, inherited his interest in and later shared in many of his experiments.

The late 18th and early 19th century was a period of great botanical activity mainly concerned with the collection, description and classification of plants. Sir James Edward Smith (1759-1828) had purchased the *Herbarium* of Linnaeus and with James Sowerby (1757-1822) published *English Botany*, a work of some 36 volumes on native plants. Sir Joseph Banks (1743-1820) was developing the botanic gardens at Kew whilst Robert Brown (1773-1858) was producing papers on the anatomy and morphology of plants and was also building up the herbarium at the British Museum.

Knight, though no doubt aware of much that was going on in the botanical field, was, because of his lack of early scientific training in these subjects, unable to contribute to this type of work. This is illustrated in a letter to Sir Joseph Banks dated 1799 concerning mildew where he concludes that it is a cryptogram with oval capsules and globular seeds, but his knowledge of that class was only sufficient to enable him to distinguish a fern from a frogstool.

His flair for experimentation was not to be suppressed and as Herefordshire was at that time noted for its orchards it was only natural that he turned his attention to fruit trees. The results of his early experiments were presented to the Royal Society in 1795, probably by Sir Joseph Banks, in a paper entitled 'Grafting and inheritance of disease in fruit trees' followed in 1797 by his treatise on 'The Culture of Apples and Pears'.

Knight's interests then began to turn towards plant physiology, that is he wanted to find out how plants drink, feed, breathe, move and reproduce. This was a branch of botany that had been neglected since the death of the Rev. Stephen Hales (1677-1761) and one of the problems which could not be solved by observation on its own, but could only be resolved by careful experimental methods based on the observations.

His interests in this field seem first to have been directed to the breeding of new varieties of apples and other fruits. Nehemiah Grew (1641-1712) had advanced the theory of sexuality in plants towards the end of the 17th century, but Knight appears to have been one of the first to practice artificial hybridization of plants. His note-book commenced in 1797 gives the following crosses:

Golden Harvey x Golden Pippin
 Golden Harvey x Marden
 Marden x Shire Andrews
 Golden Harvey x Shire Andrews
 Siberian Crab x Golden Pippin
 Marden x Golden Pippin

He also crossed vines at 'different periods of ripeness'. Seeds from the hybrids were saved and germinated, his note-book indicating that records must have been kept as to the rate of germination, for a footnote indicates that the Golden Harvey, Golden Pippin seeds all germinated at the same time. In 1801 there is an entry that the hybrid of a Siberian Crab crossed with an Orange Permain gave seeds whose germination was 3 very early, 10 early, 3 late and 1 very late. The young plants were apparently planted out in trial plots, a rough sketch in the note-book giving numbered dots and compass bearings, and followed through to the production of the first flowers and fruit. Horticulturally his most successful apples seem to have been the Downton Pippin, a cross of an Orange Permain and Golden Pippin, which was much esteemed by Sir Joseph Banks, and his Wormsley Grange Pippin reputed to have been one of the best cooking apples of the day.

By the year 1799 he had turned his attention to the problem of the movement of sap in plants. He was evidently conversant with the work that Hales had done, because he disputes the theory that it was entirely due to capillary attraction and also Hunter's theory that the movement was caused by the pressure of air on the sap vessels. Knight was evidently looking for some kind of pump like a heart and speculated that expansion and contraction of the medullary rays caused by heat acting on them was the force that impelled the sap through the plant. He also observed that the flow of sap was greater at night. Modern advances in plant science have disproved many of the early theories, but we are still not sure how the forces of root pressure, capillary attraction and transpiration cause sap to rise even to the top of tall trees. He formulated the theory that sap circulates within the plant from the roots to the leaves and then returns and also that transpiration takes place through the leaves and the pressure of the rising sap is responsible for the turgidity of the leaves. He had evidently discussed his theories with Sir Joseph Banks because in a letter of 1810 Banks anticipated he would have difficulties over this theory. His conclusions may have been drawn from experiments he made with hemp fibres and proved that sap rose through them with considerable force. Experiments with oak trees resulted in his stating that the sap in that plant rose through the white wood (xylem) and that there was a contra-flow of metabolic materials as he puts it 'within the inner bark between the wood and the bark'. He further remarked that the descending sap had the power of preserving vegetables. He went on to prove his theory by putting ring-barked cuttings in water and showed that they produced adventitious roots above the ring wound.

In 1804 he became a member of the Royal Horticultural Society; subsequently in 1811 he became its President, a position he held until his death. In the following year, 1805, he was elected a Fellow of the Royal Society, no doubt sponsored by Sir Joseph Banks, and in 1806 he was awarded the Copley Medal of that society.

The year 1806 was a memorable one because it was then he conceived what was perhaps his most famous experiment, that of substituting centrifugal force for

gravity to find its effect on the growth of plants. He attached boxes containing young plants to the circumference of wheels which were then rapidly rotated. He found that if the wheels were rotated at a sufficient speed then the roots grew towards the circumference, that is with the centrifugal force whilst the shoots grew towards the centre or against the acting force. He further observed that by adjusting the speeds at which the wheels rotated so that the two forces cancelled out each other then the stems took up an intermediate position. He therefore concluded that gravity acted as a stimulus on growing plants directing the root towards the earth's centre and the shoot away from it.

Correspondence with Banks in 1807 shows that he was conducting experiments on the growth of plants and the effect of different composts and water supplies on yields. At the same time he was experimenting on the use of Horse Chestnut bark for tanning, comparing the use of sprouting seeds against un-sprouted ones for fattening animals and recording the gravity of juice from different varieties of cider apples. Some chemical questions in connection with his experiments that he had raised with Sir Humphrey Davy apparently remained unanswered as Banks wrote to say that this was because Davy had been ill. It was about this time that Knight was seeking some black peas for crossing with others which he wished to improve. He must have been successful in his quest because in correspondence of 1811 Banks informed him that he had back crossed some of the plants from seed that Knight had given him and the progeny had produced 15 or 16 different kinds of seed from quite smooth to quite wrinkled. Had Banks given a little more detail of the numbers in each group then he and Knight may have anticipated some of the laws governing heredity later derived from Mendel's work.

He took over the Downton Estate from his brother in 1808 and, no doubt seeking more information on the running of estates, paid a visit to Holkham in the company of Banks, Davy and Giddey. During the next two years he continued his experiments, apparently repeating some of Hales' experiments on the pressure excited by rising sap, the variation of its flow and pressure at different times of the day and the transpiration and turgidity of leaves. He was also trying to find out why and how plant tendrils operate to seek and secure themselves to holdfasts. By 1816 his experiments had led him to the conclusion that life in plants is derived from the leaves and that the metabolic products of annual and biennial plants are stored in the form of a permanent reserve substance.

After 1816 correspondence with Banks, with whom Knight discussed most of his experiments and results, gets very scanty due no doubt to Banks' illness and his finding difficulty in replying. The last letter from Sir Joseph was in 1819, a year before his death, when he comments briefly on Knight's experiments of feeding sprouting acorns to hogs and some new system of making grafts.

No more local records can be found after the death of Banks, and it may be that Knight had to turn his attention more to the running of the Downton Estate and dealing with the protracted legislation thereon after the death of his brother in year 1824.

Knight died on 11 May 1838, and is buried in Wormsley churchyard. The want of an early scientific education had been a serious drawback in the field of plant physiology he had chosen to follow and perhaps had resulted in many futile experiments. But he was a keen experimenter and careful observer, and, though he may have lacked the concept of the sensitivity of protoplasm to various stimuli, he had through his ingenious experiments contrived to establish many of the main movement reactions of plant organs and to identify the stimuli which caused them. An original thinker he was perhaps a man in advance of his times.

I should like to express my thanks to the staffs of the County Record Office and the County Library for their kind help in producing the various records on the Knight family.

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- Downton Papers, nos. 437 and 583. Hereford Record Office.
Stackhouse Papers. Hereford County Library.

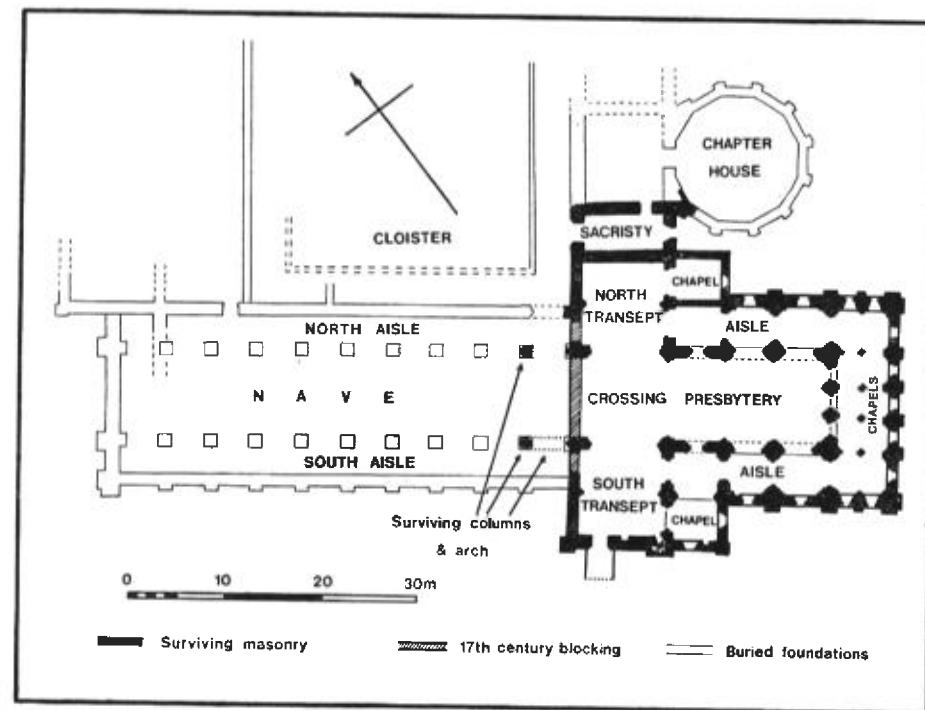


FIG. 1
Plan of Dore Abbey based on survey by R. W. Paul in 1905

Survey Work at Dore Abbey

By R. SHOESMITH

An archaeological survey of the surviving column and arch, which are the sole remaining parts of the southern arcade of the nave, was made during 1980 in advance of major repair works. The survey has provided some additional information concerning the original construction and design of both the nave and the south aisle.

INTRODUCTION

THE remains of Dore Abbey, now the parish church of St. Mary, comprise the crossing, transepts and chancel of a church which was originally some 80 m. (262 ft.) long. The whole of the nave, which was 47 m. (154 ft.) long, (as compared with the nave of Hereford Cathedral which is 38 m. (123 ft.) long) has been demolished with the exception of the east respond and first column of the north arcade and the east respond, first column and the arch between them of the south arcade. The monastic quarters suffered a similar fate to the nave and only the walls of the sacristy remain (FIG. 1).

The abbey, close to the right bank of the river Dore, was founded for Cistercian monks by Robert Fitz Harold of Ewyas Harold about 1147. It is suggested that the first buildings were of a temporary nature and that the construction was continuous during the latter part of the 12th century. The building is described in detail in the Royal Commission Inventories¹ and only the main constructional periods are shown below:²

c. 1170-1185: The two western bays of the presbytery.
The crossing.
The north and south transepts.
The chapels to the east of each transept.
Probably one bay of the nave and north and south aisles.

c. 1200 and later: Presbytery extended one bay eastward, the north and south walls of the former east bay being almost entirely rebuilt. Aisles and ambulatory added with arches inserted from the aisles to the former inner chapels of the transepts. Arches inserted in the north and south walls of the westernmost bay of the presbytery.
Nave and aisles completed and roofed.

- 1536: Abbey suppressed and the site and buildings granted to John Scudamore.
- 1633: John, Viscount Scudamore restored the eastern arm and transepts of the building for use as a parish church. He replaced the vaulting with the present wooden roof and ceilings and erected the present tower above the westernmost bay of the south aisle of the presbytery. He also filled in the western arches of the crossing and transepts re-using material collected from the destroyed parts of the abbey.
- 1895-1905: The building was restored under the direction of R. W. Paul who also carried out excavations.³ These have since been covered up.

Between the dissolution of the monastery in 1536 and the restoration of the remains of the church, there was an interval of a hundred years during which parts of the building apparently became ruinous. One of the incumbents, John Gyles, is recorded as reading prayers whilst standing under an arch to keep his book from the wet.⁴ It was during this period that the nave became derelict and it must be presumed that any surviving remains were finally demolished during the Scudamore restoration of 1633. The only parts which remained were the two columns of the arcade nearest to the crossing and the arches between them and the crossing. The fragments of the walls above the arches were cut on the rake and buttresses were built against the west sides of the two columns. The remains thus acted as flying buttresses against the west wall of the restored parish church and are so shown in a print dated 1791 (PL. XIII).

At a later date, but probably before the Paul restoration of 1895-1905, the northern arch was demolished and the first column on that side was left free-standing with a re-set ring of vault-ribs on top of the capital. The buttress and upper parts of the masonry surrounding the southern arch were probably repaired and the top of the wall was covered in stone during the Paul restoration. The column, arch and masonry all appear to be well conserved in a photograph dated 1898.⁵

During the 20th century the arch became overgrown with ivy and small trees and minor repairs were planned in 1979. However a substantial fall of masonry occurred from above the arch during the winter of 1979-80 and it was realised that major repair work was necessary. Scaffolding was erected and a detailed inspection was made in August 1980 and it was then appreciated that much of the masonry above the arch was bulging and unstable and that the roots of the shrubs were very deeply embedded in the wall. It was agreed that the City of Hereford

Archaeology Committee should provide detailed elevation drawings showing all individual stones and that the dangerous masonry should be taken down and rebuilt as necessary.

The work was funded by the D.O.E. through the Historic Buildings Council, with a contribution from the Parochial Church Council, and the reconstruction work was carried out by William Sappcote and Sons Ltd. I would like to express my appreciation to Mr. H. J. Powell, the Parochial Church Council architect; to Mr. B. J. Ashwell of ASTAM Design Partnership, the D.O.E. commissioned architect and to the contractors all of whom helped to make the survey as complete as possible. During the survey I was helped by my wife, Ruth, and by Messrs. P. Noden, C. Vowles, and J. Vowles. The final drawings were made by Miss C. Knowles and the report was typed by Mrs. H. Banks. I would particularly like to thank Mr. R. Halsey of the D.O.E. who kindly read the draft text and made several comments and suggestions, particularly with regard to the possible triforium. These have been included and have greatly improved this report.

DESCRIPTION

The present western wall of the church gives a good impression of the shape and width of the original nave and aisles (PL. XIV). However the full height is not apparent on the photograph for the surface of the graveyard, which covers the buried remains of the nave, is almost 2 m. above the original nave floor. The great vaulted roof of the nave would have followed the shape of the existing west arch with a pitched roof probably on the scale of those now on the transepts.⁶ As the west face is approached, the height can be better appreciated, as the accumulation of earth and rubble was removed down to the original floor level in a wide trench next to the building during the 1895-1905 restoration.

The part of this western wall which includes the eastern respond to the southern nave aisle and the blocked aisle arch was measured and drawn as part of the survey (FIG. 2). The 17th-century blocking to the arch contains several carved stones in its fill and the arch itself is two-centred with the outer order chamfered on the east and rounded on the west side. The moulded impost is continued along the inner wall face a short distance on either side of the arch. The broken surface and broken inner angle stones show where the south wall of the south aisle met the south transept and a length of the foundations of this wall is exposed for a distance of some 3 m. from the transept, amongst the gravestones.

The pitch of the aisle roof is indicated by a series of well-cut stones.⁷ It joins the top of the south wall of the aisle to a point part of the way up the original nave wall. The line of the nave wall is also shown by broken inner angle stones above the surviving arcade walling.

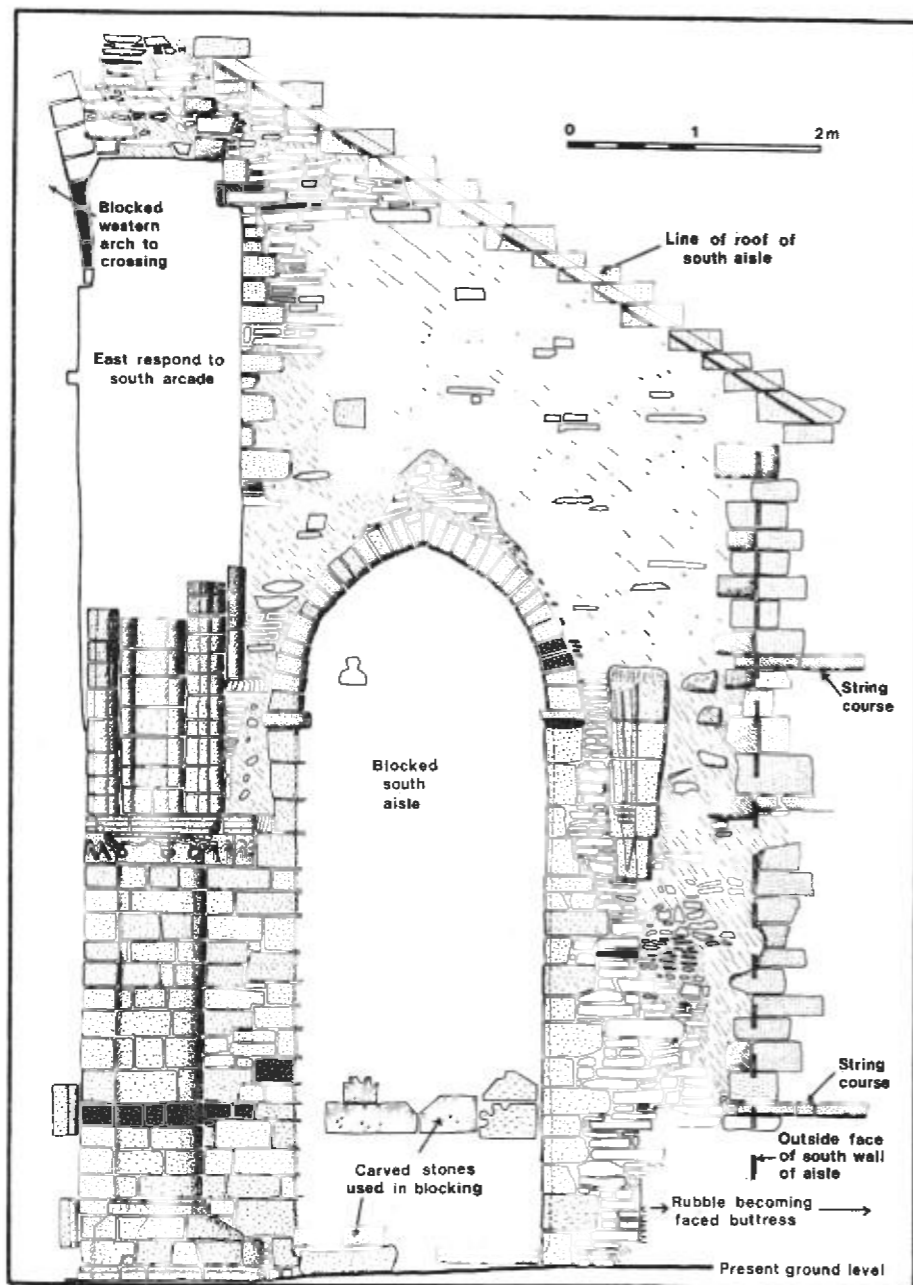


FIG. 2

Elevation drawing of part of west wall of parish church showing the remains of the south aisle

To the south of the blocked aisle arch is a mid-13th-century corbel capital surmounted by springing stones of the moulded diagonal and wall ribs of the aisle vaulting.

The east respond of the south arcade is semi-circular and well tied into the west wall between the nave and aisle arches. The capital is carved with water-leaf foliage with the leaves tied together in an unusual way.⁸ It has a corbel on the southern side for the aisle vaulting.

The north aisle arch is similar in shape and size to the one on the south although it is very slightly narrower. About 1 m. of the original north aisle wall remains standing including part of the east jamb of the doorway from the cloister. The corbel capital in the angle has scrolled foliage and a square moulded abacus. The east respond of the north arcade is similar to the one on the south arcade but the capital is carved with slender stalked criss-cross foliage. It has a corbel on the north side for the aisle vaulting.

Both sides of the remaining arch of the south arcade and the later buttress were measured and drawn as part of the survey (FIGS. 3 and 4). The areas without any stones shown on the face are those where the major collapse occurred. Two of the drip-mouldings had also fallen out of place and were tilted forward. Several parts of the face work appeared in imminent danger of collapse and had to be handled with great care.

The arch, which is rather distorted, is two-centred and of two moulded orders with a moulded label towards the nave and a larger one, which gives the impression of a drip-moulding, on the aisle side. This was presumably the wall rib for the aisle vaulting. Springers for the second arch are present within the fabric of the buttress. Although only fragments are visible, the mouldings appear to be of a different design from those of the first arch (FIG. 5).

The first column, partly obscured by the buttress, is almost circular with the capital carved with simple upright plain leaves.⁹ It has a carved, triple-corbelled projection¹⁰ on the south side which supports two eroded springing stones for the aisle vault. The drip-mouldings for both first and second arches are cut away to accommodate the springing stones.

On the northern side of the arcade, between the surviving arch and the remains of the second arch, is a corbelled capital of three parts. This is much too low to have supported the nave vault, being well below the level of the existing arch between the nave and the crossing, so it may have been re-set. However it could have carried a triple vaulting shaft, attached to the wall, which carried the vaulting at a higher level.

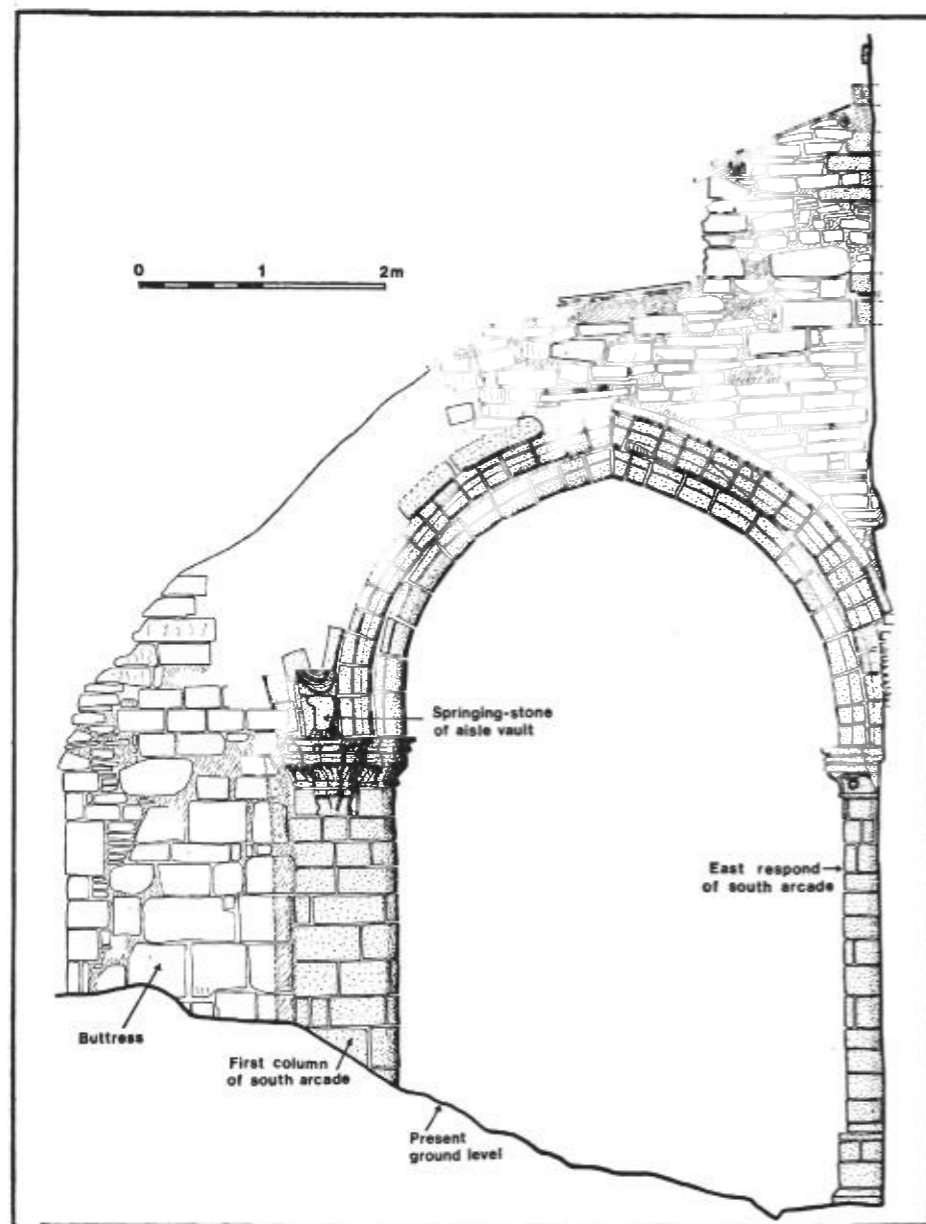


Fig. 3
South elevation of the surviving part of the south arcade

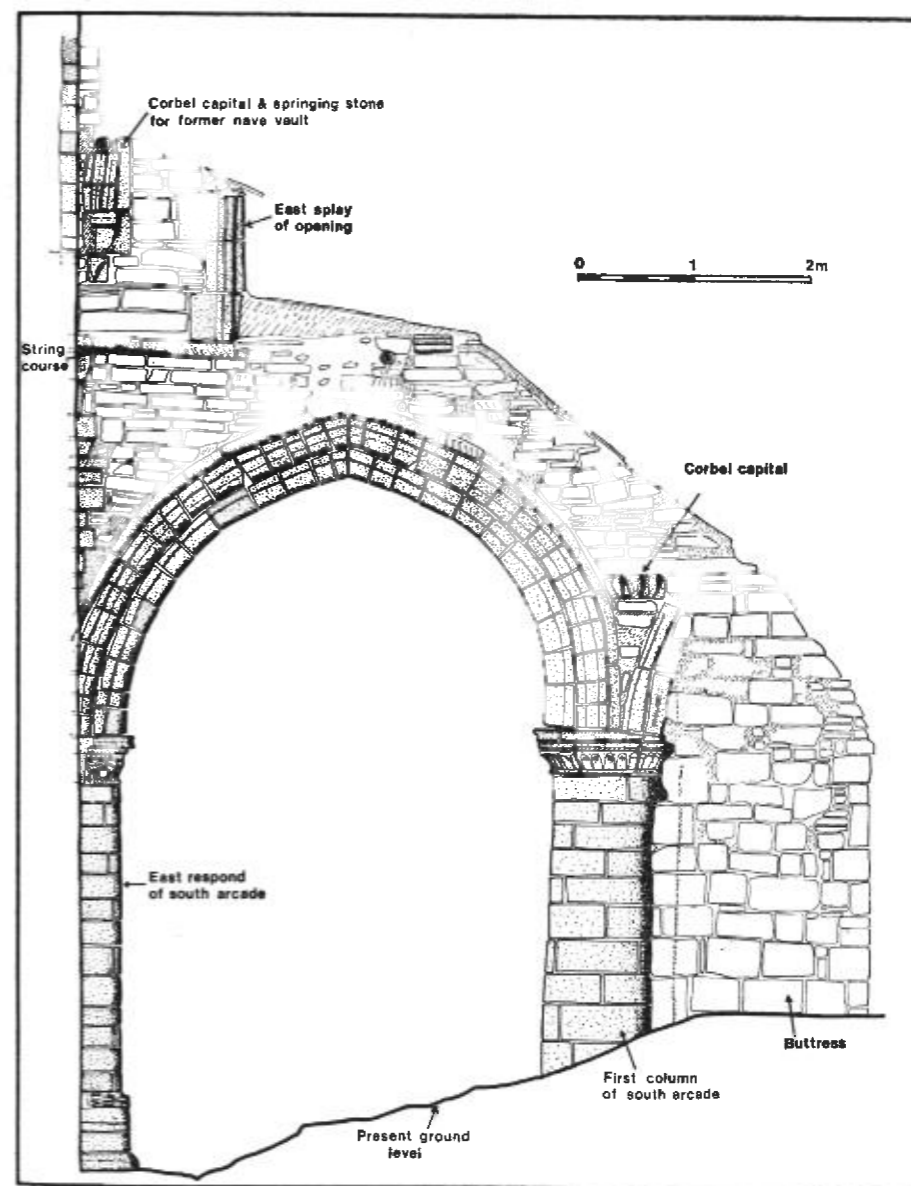


FIG. 4
North elevation of the surviving part of the south arcade

The upper part of the arcade wall presents several problems. It is uncertain which parts were rebuilt as part of the raked, flying buttress and which parts are original. On the inner face is a length of string course, very worn, but including one carved moulding. This is apparently original being related to the inner angle stones. Above the string course are three courses of a moulded east splay of an opening through the wall. The sill is absent and unfortunately the south face of the wall has been completely rebuilt above the arch, being some 12 cm. in front of the ashlar blocks set into the west wall which presumably represent the original face (FIG. 2).

The schematic drawing (FIG. 6) shows the relationship between the arcade and the aisle and the two possibilities for the opening above the arch. Insufficient remains for either one to be proved correct and the reader must be left to make his own judgement.

The Royal Commission suggest that the east splay is part of a deep-silled clearstory window opening above the level of the aisle roof. This would then be similar to the windows in the chancel. The angle of the sill for such a window is shown in FIG. 6. The internal height of the aisle vaulting is probably indicated by the moulding, now acting as a hood-mould, on the south side of the arcade arch, which may be accepted as the vault wall rib. With a clearstory window there would have been sufficient space above the vaulting to allow inspection of the roof timbers.

The alternative is that the openings represent a blind triforium some 2 m. high which is more than likely in the context of the western early Gothic of this period.¹¹ The splay would then have been part of a decorative front to avoid large blank areas of internal wall against which the vaults and roof were built.¹² There would have been no need for a gallery and it would seem very unlikely that a passage existed for there are none elsewhere in the elevations and no staircases. But in the same way that access to the space between the chancel aisle vaults and roofs can be had from an original staircase in the south transept, the north-west and south-west corners of the nave may well have given access to the nave aisle roof spaces and it is possible that doors existed from these spaces into the nave triforium.

In the south-east angle of the nave, and attached to the arcade wall at the level of the eastern splay described above, is a perished corbel capital supporting two springing stones for the former nave vault.¹³

The first column of the north arcade now stands alone. It is circular with foliated trumpet-scallops and has a triple corbel with a foliage knot below it on the north side which originally carried the vault ribs of the north aisle.

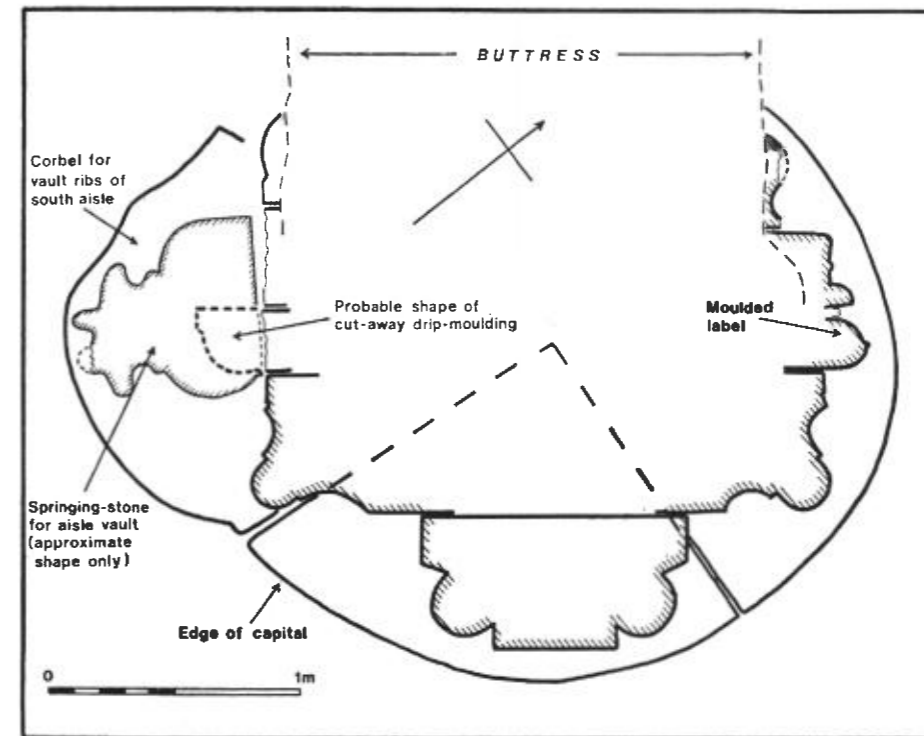


FIG. 5
Plan of the arch mouldings on top of the capital of the first column of the southern arcade

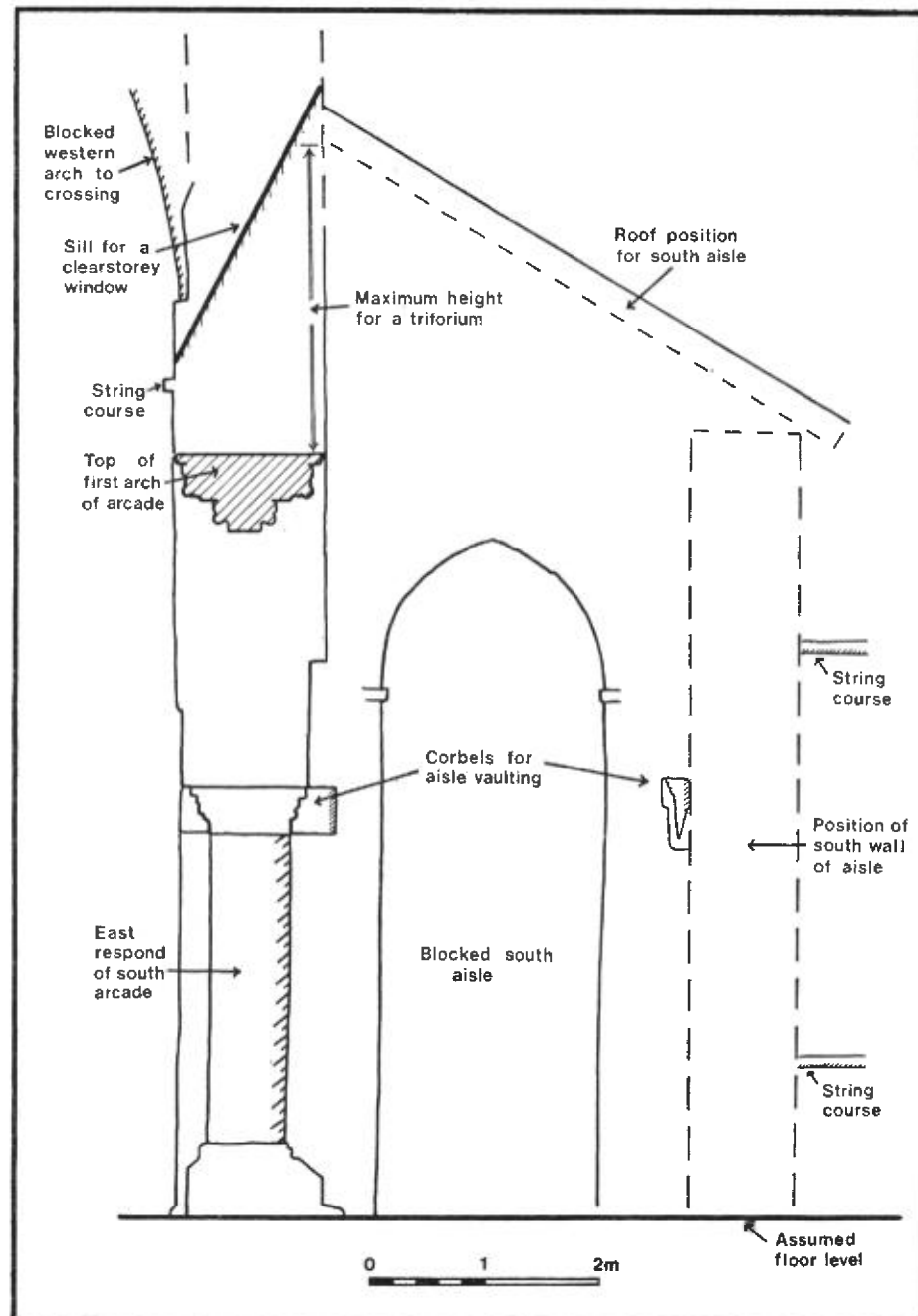


FIG. 6
Relationship between arcade and south aisle showing possible position for window

REPAIRS

Copies of the elevations showing details of the repair work are included in the archive in Hereford City Museum. The main areas affected are as follows:

South elevation

The wall above the eastern part of the arch was taken down to the springing of the arch and set back about 10 cm. so as to take some of the weight off the remaining moulding, now acting as a hood-mould, and to expose the ashlar wall ties in the south-eastern angle.

The area of collapse was provided with a new core and grouted, being set back above the western springing stones of the arch to show the line of the missing moulding.

The remaining areas were core-filled, grouted, and pointed as necessary.

North elevation

The wall above the eastern part of the arch including the string course and the eastern splay of the opening was grouted and re-pointed. The remaining upper parts of the masonry wall, above the level of the column capital, were taken down and replaced in the same alignment, the carved and moulded stones being replaced in identical positions according to the elevation drawings. The remaining areas were core-filled, grouted and pointed as necessary.

The finished line of the rake was slightly altered in places to improve the run-off of rainwater.

CONCLUSIONS

The detailed survey and the close examination of masonry exposed during the repair work has provided some additional information about the design of the nave and side aisles. The slightly different moulding of the second arch may indicate that only the first arch was part of the first constructional phase, along with the presbytery, crossing, transepts and transept chapels. The opening above the arch could be a clearstorey window with a steeply-raked sill but is perhaps more likely to be a triforium opening of some kind. The architectural features indicate that the building of Abbey Dore went on well into the 13th century and it may not have been fully completed until the consecration service which took place between 1275 and 1282 during the episcopacy of Thomas Cantilupe.¹⁴

This short article has been designed to show the need to ensure that detailed drawings are made of medieval stone facings before rebuilding or reconstruction works take place. The elevations and plans are not just of use as an academic

record but they provide the necessary working drawings and aids for the architects and contractors during the reconstruction process. Detailed photographs are also of great help but on occasions they do not show the hidden detail which can be included in a full series of measured drawings.

The repair work has stabilised this important piece of the late 12th-century fabric of the building which was originally the Cistercian Abbey of Dore. Other ruined parts of the building which are still in urgent need of repair and consolidation include the now roofless walls of the sacristy and the corner of the chapter-house together with the remains of vaulting on the northern sides of these walls. The stub of the north wall of the nave which is still present from about 1 m. from the present west wall is also in great need of pointing.

The original drawings and photographs which comprise the survey together with the contractors' drawings showing the areas where masonry has been replaced are part of the City of Hereford Archaeology Committee archives and will eventually be lodged in the Hereford City Museum.

REFERENCES

- ¹ The main report on Dore Abbey is in *An Inventory of the Historical Monuments in Herefordshire, I, South-west* (1931), 1-9, but this should be read in conjunction with the corrections incorporated in *III, North-west* (1934), 227 and revised plan.
- ² Recent research, particularly at Wells and Keynsham, suggests that the dating given in the Royal Commission Inventories should be revised and the most up-to-date figures are given (info R. Halsey).
- ³ Plans showing some details of the excavations are contained in *Archaeol. Cambrensis* (1927), 269 and *The Builder* for September 25, 1931. They are re-drawn for the Royal Commission, Vol. III plan (*op. cit.* note 1) and for FIG. 1 in this present article.
- ⁴ T. Blashill, 'The 17th century restoration of Dore Abbey Church', *Trans. Woolhope Natur. Fld. Club*, XVII (1902), 184-9.
- ⁵ Photographs and prints are all in the Hereford City Library collection.
- ⁶ A parallel example of this design of roof is at Fontenay in Burgundy (info R. Halsey).
- ⁷ These stones are very well worked and confirm the generally held notion that the Cistercian masons had a higher standard of constructional design than most (info R. Halsey).
- ⁸ Richard Halsey comments that the only other capital of similar design known to him in England is a loose one at Ludlow.
- ⁹ A parallel leaf type exists at Fountains Abbey on the corbels for the main aisles (info R. Halsey).
- ¹⁰ The triple corbel form is usually found at the base of vault shafts and is a real 'Transitional' feature. It is rarely found attached to a capital (info R. Halsey).
- ¹¹ Possible early prototypes can be seen at Hereford, Gloucester and Tewkesbury and similar examples exist in the naves at St. David's and Llanthony, in the transept at Glastonbury, the western end at Worcester, the chancel at Pershore and the transepts of Wells. At both St. David's and Llanthony the chancels have no triforium but deep splays, just as at Abbey Dore, and St. David's even has a rebuilt chancel of c. 1220 with some similarity to Dore's rebuilt chancel (info R. Halsey).
- ¹² The integration of this level with the clearstory was clearly a pre-occupation of architects in both England and France from c. 1180 to 1250, only really solved in France with the St. Denis 'Rayonnat' elevation of c. 1240 and in England much later by the use of perpendicular tracery at Gloucester, apart from isolated examples like Pershore (c. 1220), York (in fact a French import) (c. 1291), and St. David's nave (c. 1180) (info R. Halsey).
- ¹³ The rib profiles indicate a vault of later date than the c. 1180 build of the arcades, perhaps as late as c. 1230-50. This suggests, as do the bosses, that the vaulting of the nave was not carried out initially, although the attached triple corbels to the columns indicate the intention to vault them from the first. This is a typical Cistercian procedure (info R. Halsey).
- ¹⁴ *Acta Sancta*, Oct. 1, 566.

Llanwarne Old Church

By R. SHOESMITH

In 1978 a complete photographic survey, detailed plan, elevations, and cross sections of this ruined church were prepared in advance of consolidation works. The repair work did not include the north wall of the chancel which partly collapsed during the winter of 1979-80. A small excavation, which was organised in advance of the repair work on this stretch of wall, established some of the constructional history of the building and indicated the extent of the flood alleviation works.

INTRODUCTION

LANWARNE, a small parish some seven miles south of Hereford, is situated on minor roads between the two main routes which join the city to Ross-on-Wye and Monmouth. It is pleasantly sited in a small valley through which runs the Gamber Brook. The old church of St. John the Baptist stands in the centre of the village, close to the stream. In 1864 it was replaced by the present Christ Church and the roof was taken off the old church leaving it as a ruin. The tower is still complete and in reasonable condition, and most of the walls of the church still stand to their original height.

The building, which was neglected during the century of disuse, gradually deteriorated with ivy, small trees and shrubs growing from the walls. Eventually, in 1977 a local committee was established to improve the appearance and safety of the remains. The Department of the Environment decided that an archaeological survey of the church was necessary before the commencement of the repair work and this was organised during March and April 1978. The archaeological work consisted of a photographic survey of the building, several measured and drawn elevations and cross sections, an accurate, levelled plan and a survey of gravestones and coffin lids.¹

In 1980, after the collapse of part of the north chancel wall, repair work was planned in two stages. The eastern part of the wall was leaning outwards but was otherwise whole and it was decided that this part should be pulled back to the vertical using a cradle and winch. To complete this satisfactorily new concrete foundations had to be inserted into the wall below ground level. The western part of the wall, where the collapse had occurred, had to be completely re-built on new foundations. Before the reconstruction work commenced, a full archaeological survey was made of the north chancel wall after which the remaining part of the western half of the wall was taken down to 0.5 m. above the present ground level and the necessary foundation trenches were archaeologically excavated. The

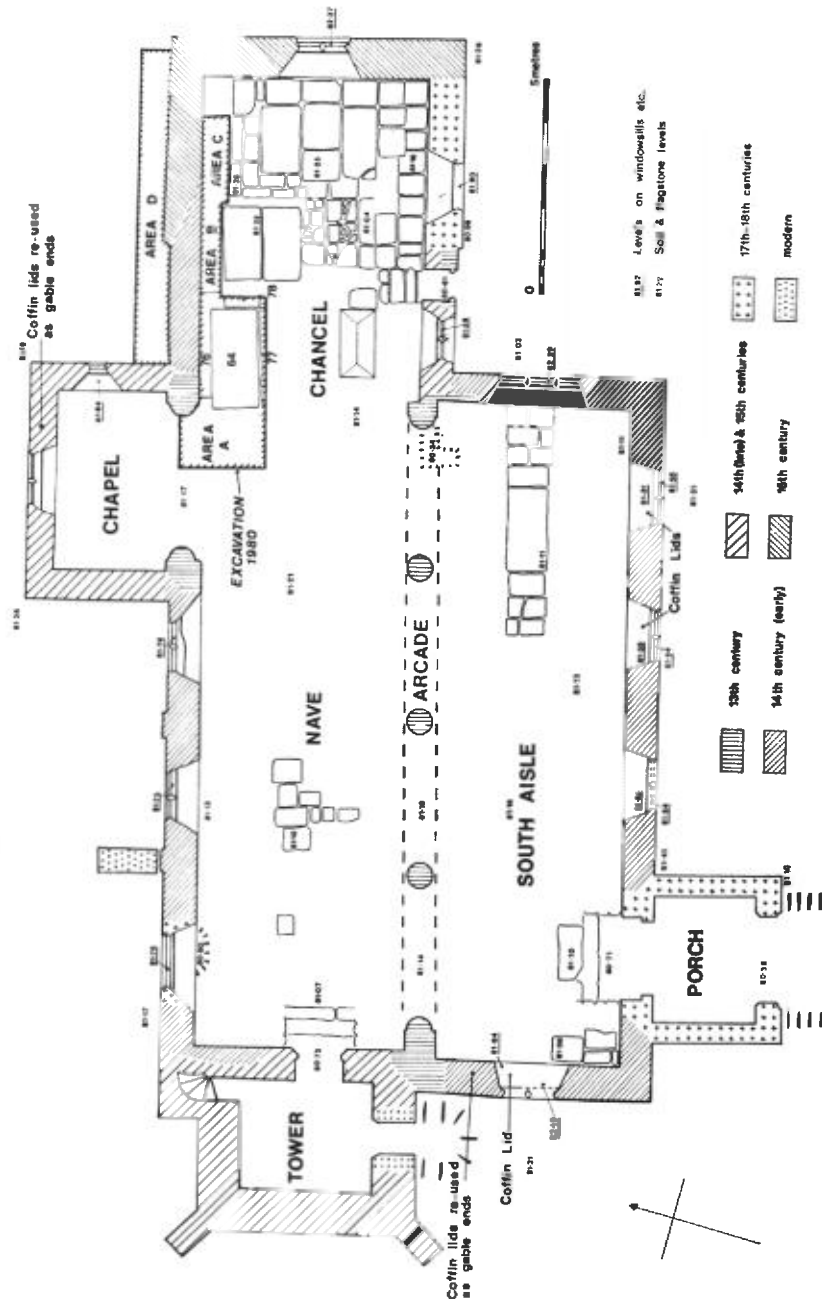


Fig. 1 Plan of church showing general periods at ground level and areas excavated in 1980

MS:CSK

trenches were extended to a greater width than required for the foundations in order to obtain a coherent archaeological record. The presence of stone-lined graves and the shoring for the chancel wall made extensions impractical except for an internal area close to the eastern part of the north chapel arch. Here the foundation trench was extended into a small area.

HISTORICAL

The earliest mention of Llanwarne is in the *Liber Landavensis*.² This, the Book of Llandaff, was compiled in the 12th century and purports to be copies of ancient records of the previous 600 years.³ Early in the 7th century, according to the Book, one Catvuth ap Coffro gave to Trichan, 5th bishop of Llandaff, a piece of land. A translation of the relevant part of the grant reads: 'It is to be understood that Catvuth, son of Coffro, offered to God a piece of land of three *modii*, that is, a fourth part of an *uncia* of land; that is, the church of Henlennic on the bank of the Amyr; that is, Llannguern, . . . Its boundaries between the Aymr and the hyacinthe road are its width, and its length is as far as the old ditch'.⁴ The Aymr is identified as the Gamber Brook, 'Lannguern' means 'the church by the alder trees' and 'Henlennic' presumably means 'the little old church'. Duncumb concludes that, although the description seems to refer to the present site, Henlennic is probably Lenniston, a homestead in the parish, a good mile south of the ruined church and just outside the parish boundary, but still near the Gamber Brook.⁵

In the 8th century, according to the Book, during the time of Grecielis, bishop of Llandaff, one Maenarch gave 'three *modii* of land on the bank of the Ambyr'. The boundary was given as: 'The ford of Pallan to the ditch, the ditch leading to the green tump, and from the tump from the district as far as the Amyr river, with part of the wood of Mamilet'.

Sir Joseph Bradney, in his presidential address to the Woolhope Club in 1924,⁶ concluded that the boundaries mentioned above were broadly similar to the present parish boundaries, the green tump being the mound which was originally at Wormelow Tump but has now been removed. It is suggested, however, that an *uncia* is of the order of 500 acres.⁷ This would mean that the piece of land which Catvuth gave to Llandaff was of the order of 100-150 acres, much less than the 2,500 acres or so which comprise the present parish of Llanwarne. The boundary indicated by the 'green tump', 'the hyacinthe road' and the 'old ditch' is thus likely to be much closer to the original church site than the present parish boundary.

In the time of William the Conqueror, Bishop Herwald 'consecrated Llannguern, and in it ordained Gulcet ap Asser priest, and after him Simeon' but another reference about the same time states that Bishop Herwald 'consecrated

Llan Guenn Aperhumur (the church in the alders at the confluence of the Gamber) . . . and in it ordained Jacob and after him Elgar'. Both sites are identified as Llanwarne although there is no confluence of the Gamber in the immediate area.⁸

Llanwarne is entered in the Domesday survey, if the identification is correct, as part of the lands of the bishop of Hereford. The entry reads: 'To this manor (Holme Lacy) belongs a church, and it is called Ladguern. There are three ploughs there, but the land of this church does not pay geld. A priest renders 2s. thence'.⁹

In 1291 'Llanwaran church' belonged to the prior of Lantony Prima and was worth £13 6s. 8d. yearly.¹⁰ In 1535 Llanwarne rectory was worth £15 per year,¹¹ and in 1645 the Parliamentary survey valued the parsonage of Llanwarne at £40.

In 1861 plans were made to restore the old church but, in the opinion of experts, it was impossible to carry them out satisfactorily owing to the extremely damp situation. Draining the churchyard was considered to be impractical, as much of the ground was below the level of the adjacent brook. It was therefore decided to build a new church.¹² The new building was consecrated in 1864 and contains several of the wall memorials and fittings from the old church. Two of the south windows in the nave contain a collection of panels composed of 16th-century Flemish or German glass.

SITE DESCRIPTION

The ruins of the church of St. John the Baptist are in the middle of the churchyard, which is on low-lying ground in the east of the parish. The Gamber Brook flows along the northern edge of the churchyard. There is little difference in level between the stream and the whole of the site and until recently there was often standing water in the south porch and the south entrance to the chancel. Most of the gravestones shown on 19th-century illustrations of the church were cleared from the churchyard when it was levelled and re-grassed in the 1960s. The churchyard cross base stands south of the chancel and is probably of 14th-century date. The lych gate, on the south side of the churchyard, is still in good condition; it is probably of 15th-century date and is timber-framed on a stone base.

Inside the church there have been several recent adjustments and disturbances of the floor level. At the time of the Royal Commission survey, about 1930, there was thick undergrowth in the interior, but this has since been cleared and the ground raised by a quantity of soil levelled throughout the nave. However, the flagged floor is still visible in the chancel and parts of the south aisle and nave, although some of the aisle flagstones appear to have been recently moved (FIG. 1). Some of the stones in the chancel, including some memorials, have also recently been re-laid, due to the action of vandals who had attempted to desecrate the graves.

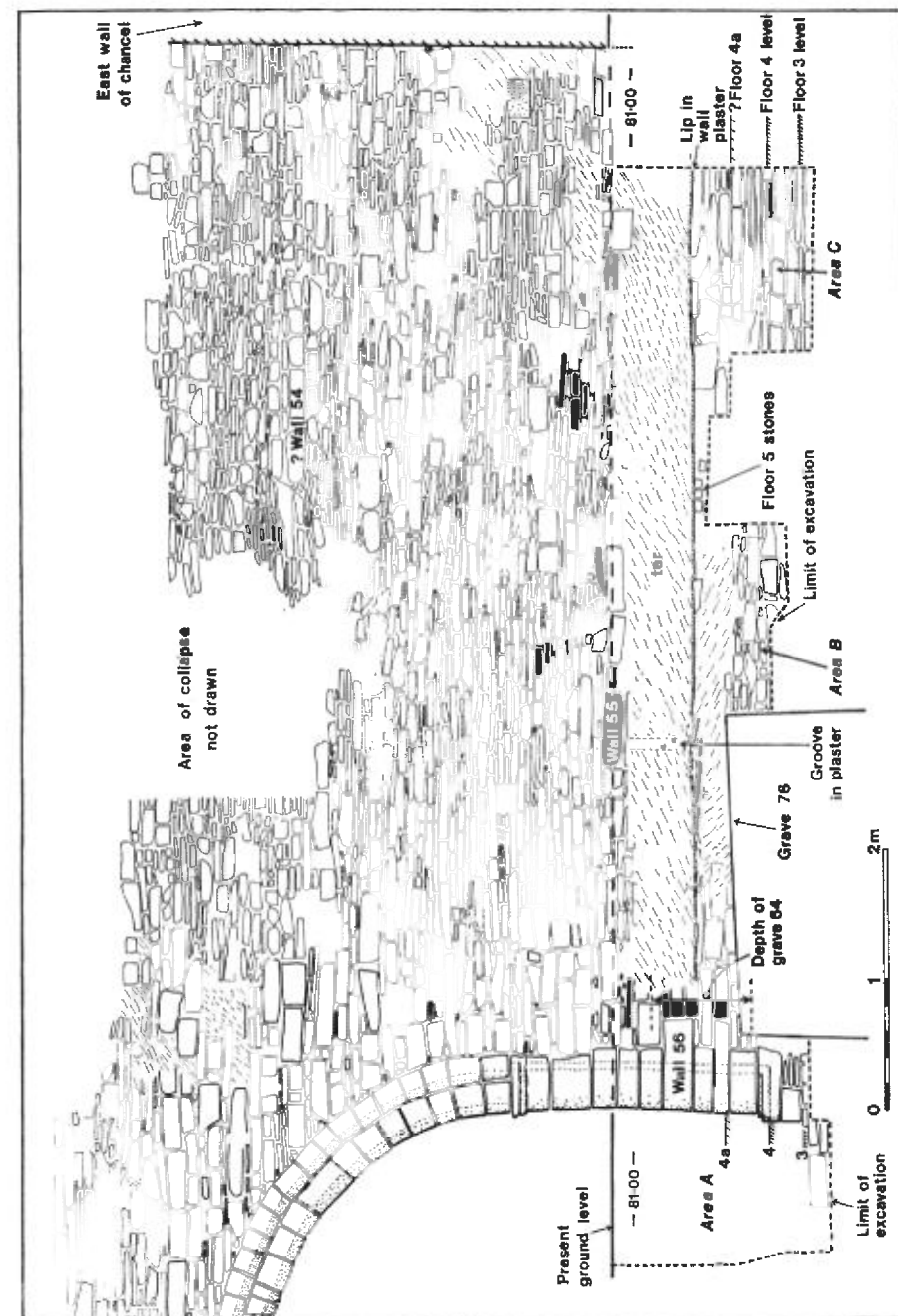


FIG. 2
Internal elevation of north wall of chancel

The build-up of the ground level can be appreciated in the blocked entry to the tower and the south door to the chancel, both of which are approached by steps leading down from the interior of the church.

DESCRIPTION OF THE BUILDING

The following description of the visible remains follows that in the Royal Commission survey¹³ but makes use of the 1978 observations and takes into consideration the results of the excavations in 1980 (FIG. 1).

The church is built entirely of sandstone rubble with dressings and ashlar of the same material. One piece of tufa is used in the frame of the east window of the chancel.

The Chancel (7.7 m. by 5.2 m.)

The chancel is the most complex part of the building and has suffered many partial rebuilds. Internal and external elevations have been drawn of both the north and south walls, and the excavation has added further details, but even so the full constructional history is uncertain. Some of the rebuilds used identical materials and methods to those used in the earlier parts of the structure and they can only be shown to exist by changes in style of the windows and door.

The earliest part of the chancel to survive above the present ground level is the 13th-century doorway in the south wall which has chamfered jambs and a two-centred head. Internally it appears to have been re-framed with a single slab at the head, possibly when the late 14th-century window to the west was inserted. Only a small portion of the original wall still exists.

The western part of the north wall is thought to be of early 14th-century date or possibly earlier, and the break with the masonry surrounding the 13th-century arch leading into the north chapel shows on the internal elevation (FIG. 2). This wall, which consisted of small, poorly coursed stones with occasional larger ones, has now been rebuilt. The eastern part of the north wall was rebuilt probably in the 16th century. It is chamfered into the earlier part on the external face (FIG. 3); the chamfer decreasing with height to allow for the lean of the older wall. Externally this part of the wall is of large blocks with better coursing than the earlier work, but internally the small rubble of the earlier period continues to the east and changes gradually, with a rather unconvincing break, to a slightly better coursed wall near the eastern corner of the chancel (FIG. 2). The upper parts of both the 14th-century and 16th-century walls have been rebuilt, presumably when the chancel was re-roofed. The masonry is slightly better coursed, using medium-sized blocks.

The eastern part of the north chancel wall and the east wall of the chancel are both of similar construction. The eastern window is considered to be of late 13th-century date, formerly of two pointed lights in a two-centred head, with a 16th-century moulded label and stops. The Royal Commission considered that the window had been re-set in a new wall in the 16th-century and this suggestion is still accepted as there are no indications that either the window or the label and stops were inserted into an earlier wall.

To the west of the 13th-century doorway in the south wall is a late 14th-century window of two trefoiled ogee lights with flowing tracery in a two-centred head. The top of the window was probably rebuilt with a hood-mould in the 16th century. The internal chamfer of the window frame is partly cut into the blocks comprising the frame of the doorway. Externally the constructional break between the window and the doorway can be traced, but the western frame of the window is partly hidden by the east wall of the south aisle. Internally the wall surrounding both the door and the window has no significant breaks, except for the rebuilt part above the window and an infill below the present sill level. To the west, this medium-sized, semi-coursed masonry joins the heavier masonry of the arcade walling. The face of the latter stands some 0.3 m. to the north of the chancel wall and the upper part of the junction was roughly curved to allow the two walls to be joined. Nearer the ground, a small niche, possibly for a cupboard, was incorporated.

East of the chancel door, on the external elevation, there are slight signs of what may have been a rebuild of 14th- to 16th-century date, but this is cut away by a straight join where the poorly coursed small masonry of the earlier builds changes to a well coursed wall using squared blocks. The original wall has a slight lean outwards and this was rectified in the rebuild. The break is not obvious on the internal elevation, partly due to the width of the splay of the new window which was part of the rebuild. This window is plain and round-headed and, although the Royal Commission considers it to be of uncertain date, Pevsner calls it Georgian.¹⁴ The wall surrounding this window is of a more regular construction than any other part of the building, and is assumed to be of 17th- or 18th-century date.

The Royal Commission noted that a chancel arch formerly existed to the east of the nave arcade, but the surviving walls show no indication of this arch.

The Nave (15.1 m. by 4.8 m.)

The nave is of two principal periods; the earlier, consisting of the arcade and the arch leading into the north chapel, is of 13th-century date, whilst the north wall is mainly of the early 14th-century.

The 13th-century south arcade is of four bays with rounded arches. The columns are circular and the responds have moulded capitals and bases buried at least some 0.7 m. below the present ground level. At its western end, the arcade is tied into a small part of the western wall of the south aisle and it may also be tied to the eastern wall of the aisle, but only in the lower courses below the level of the window sill. The arch in the north wall is two-centred, of two chamfered orders. The responds have each a half-round attached shaft with moulded capital and buried base. The moulded base of the eastern respond was examined during the excavation (FIGS. 2 and 4). Only a small part of the wall surrounding the arch is original. To the east, the arch and its walling joins into the 14th-century north wall of the chancel, and to the west it joins the 14th-century wall which continues the full length of the nave. The rebuild above the arch is of uncertain date, but is probably associated with a re-roofing of the building.

The north wall contains three windows, all originally of the same design, with two pointed lights in a two-centred head. The central window has normal internal splays but the other windows each have one longer splay to increase the light within the building. The western window has lost its mullion and the head has been rebuilt. This has resulted in a taller window with a round head, which is possibly of a similar date to the round-headed window in the south wall of the chancel. The lower courses of the north wall below the three windows are thicker than those above and may thus be the remains of an earlier wall. However, the thickening may be of a later date and could represent supports for seating in the nave.

The north wall of the nave was built with external buttresses and the stubs of two of these are visible between the windows. A third apparent stub is now re-used as part of the west wall of the north chapel, but this is presumably part of an earlier build to this chapel. At some time the buttresses were removed and the westernmost one was eventually replaced by an un-tied construction of large blocks of stone including some with mouldings. This undateable buttress appears to serve very little useful purpose as there is a gap between it and the wall. It is possible that the original buttresses started to sink, pulling the wall with them, and therefore had to be demolished, and the replacement was constructed as a free-standing support.

The western wall of the nave was largely rebuilt when it became the east wall of the late 14th- or 15th-century tower. The doorway, which used to lead into the tower, is approached by stairs leading downwards from the nave but they have now been filled in and the doorway is blocked. It has moulded jambs and a two-centred head. Above the doorway can be seen holes for the joists which supported the gallery. The wall above the joist line has some surviving plaster within which can be seen pegs which probably held panelling. Presumably the gallery went across the middle of the western window in the north wall of the nave and was

approached by steps close to the arcade. The western window in the north wall was probably heightened to allow light into the gallery when the latter was constructed. The internal plaster continues above the gallery and finishes in a curved line, indicating that the nave had a coved, plastered ceiling. Above the plasterwork, two different positions of the junction of the nave roof with the tower can be seen. The lower position has an apex central to the nave, but above it is a second roof line, asymmetrically placed with the apex higher and closer to the arcade.

The North Chapel (4.2 m. by 2.6 m.)

The Royal Commission was uncertain about the date of construction of this chapel. It has two windows, the one in the east wall having a single pointed light and the other in the north wall two pointed lights in a two-centred head. The present chapel is a later construction than the adjoining walls of the nave. The western wall is attached to the remains of what was probably an earlier west wall. Both windows could be of late 14th- or very early 15th-century date and it is suggested that the present chapel is of this date and that it replaced an earlier chapel of similar dimensions. The north gable and possibly the south gable were rebuilt at some time later using slightly smaller stones and coffin lids as gable ends.

The South Aisle (15.3 m. by 4.5 m.)

The south aisle is mainly of early to mid-14th-century date. However, the masonry under the eastern window may be of the same date as the arcade and the western wall has two constructional breaks, the earlier of which is probably 13th century. There would seem to be no doubt that the present aisle replaced an earlier structure which was approximately on the same lines.

The west wall has a constructional break close to the junction with the arcade. The earliest part of this wall contained a 13th-century window of which the northern splay survives. This was replaced by a window which was uniform in style with the three windows in the south wall. They are all of two trefoiled ogee lights with net tracery in two-centred heads. The window in the east wall is of similar design but with three lights. They are all early 14th century. The sills of the east and west windows were originally built higher than those on the south wall, and at a later date the western sill was heightened by a further 0.55 m. The rubble fill surviving in the westernmost of the south windows suggests that the sills of these windows were also raised.

The south doorway was inserted into the wall and is of 17th-century date with an elliptical head and brackets in the form of Ionic capitals. At the top of the door-arch is a medieval corbel-head with a somewhat grotesque human face. The

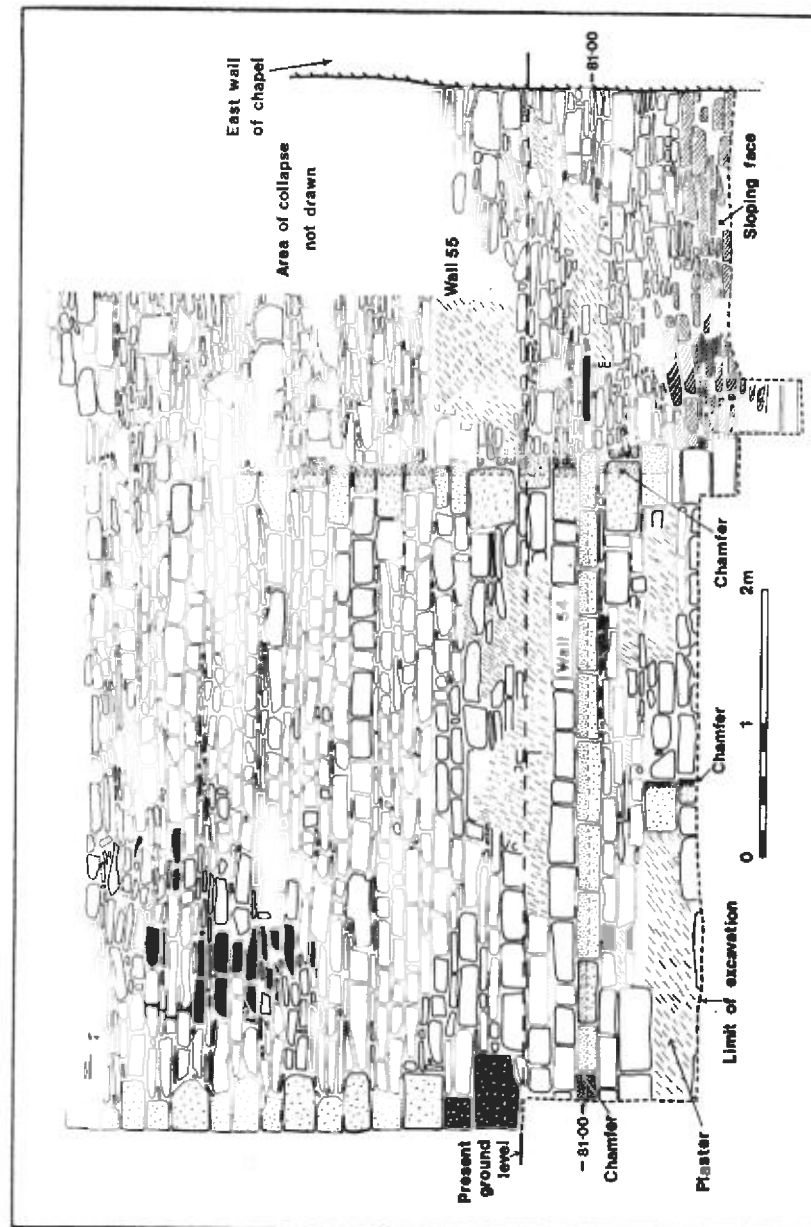


FIG. 3
External elevation of north wall of chancel

eroded inscription on the outside of the arch originally read: '... passeth away soe doth Mans life . . . this is none other than the house of God'.¹⁵

Plaster, which survives on the inside of the east wall of the aisle, shows the curve of the coved ceiling.

The West Tower (2.6 m. by 3.0 m.)

The tower was not examined during the survey and a full description can be found in the Royal Commission survey. It is probably of 15th-century date and contains a columbarium.¹⁶

The South Porch (2.9 m. by 2.4 m.)

This was an addition to the south wall of the aisle and was probably erected when the south doorway was reconstructed in the 17th century. It has an outer doorway with moulded jambs and a round head and contains the remains of stone seating. There was until recently a sundial above the arch which concealed part of an inset coffin lid.

THE 1980 SURVEY

The 1978 measured elevations included the internal face of the central part of the north wall of the nave comprising the easternmost of the nave windows, the arch leading into the north chapel and some 2 m. of masonry to the east of the arch.¹⁷ The eastern part of this elevation was re-drawn and extended as far as the east wall of the chancel (FIG. 2); thus including all areas which were likely to be disturbed.

Only a small part of the external elevation of the north wall of the chancel was drawn in 1978 consisting of a total width of 3 m. centred on the chamfer.¹⁸ This elevation again included a part of the wall which had collapsed, and the earlier work was re-drawn as part of a new elevation which included the whole of the north chancel wall from its junction with the east wall of the north chapel to the eastern end of the church (FIG. 3).

Both new elevations were extended below the present ground level as the excavations exposed further parts of the wall. In 1978 an attempt was made to analyse the various constructional phases of the two faces of the wall by establishing the re-built areas and making use of the architectural dating evidence.¹⁹ The additional evidence which has been accrued as a result of the excavation has helped to improve this analysis, and the results are considered in more detail in the conclusions.

The total extent of the collapse, demolition and reconstruction works are not shown on the plan and elevation drawings. The main areas affected are listed below and the full details are included in the archival material which is deposited in the Hereford and Worcester County Museum at Hartlebury Castle.²⁰

The eastern part of the chancel wall, as far as the main external vertical chamfer, has suffered little apparent change. However, it now sits on a buried concrete foundation which has replaced the stones of the wall for a depth of approximately 0.2-0.3 m. between 80.0 m. and 80.4 m. O.D. Stones were also removed at the eastern end of the wall for the whole height, on both the internal and external faces, to physically detach it from the east wall of the chancel and allow it to be re-aligned vertically. The stones removed were eventually replaced approximately in the original positions.

The western part of the chancel wall, as far as the east wall of the north chapel, was demolished to below ground level, mainly by the archaeological team, and a concrete beam was inserted at the same level as that in the eastern part of the wall. The wall was then rebuilt on this new foundation, joining the existing wall at the external chamfer, so as to reproduce its appearance before the collapse and demolition.

THE EXCAVATION

Introduction

In order to replace the foundations of the north wall of the chancel, trenches were archaeologically excavated on both sides of the wall to an appropriate depth. The trenches and areas available for excavation were restricted by brick and stone vaults inside the church, some of which were not apparent until after the excavation commenced.

Areas A, B and C were inside the church and area D was external (FIG. 1). Areas A and D were the only ones which were totally free of burials. Areas A and C were excavated to the greatest depth, a maximum of 1.8 m. below the present internal ground level. At this depth both areas were still within the archaeological levels associated with the church, but because the required depth for the foundation work had been reached and in view of the restricted size of the trenches, it was decided to leave any remaining lower levels undisturbed. The extent and depth of these lower levels are unknown.

Dating evidence in the excavated lower layers was slight and the suggested chronological framework is therefore partly conjectural.

Recording system

Site Code: LLW 80

Context numbers for layers, features, etc: 1354-1391

(for convenience of reading the prefix 13- has been disregarded in the text and drawings)

Finds: Recorded under context numbers

Datum levels: Reduced to Ordnance datum

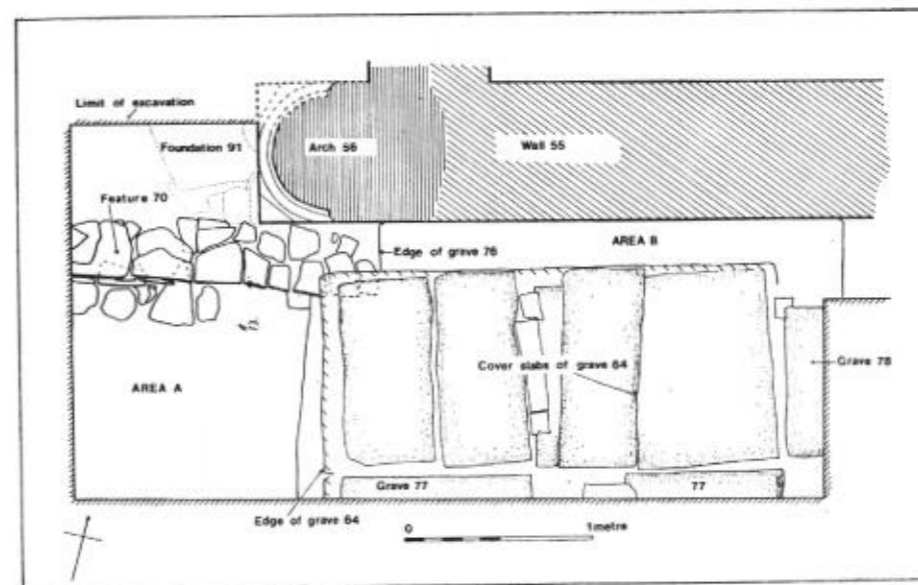


FIG. 4
The excavation—details of areas A and B

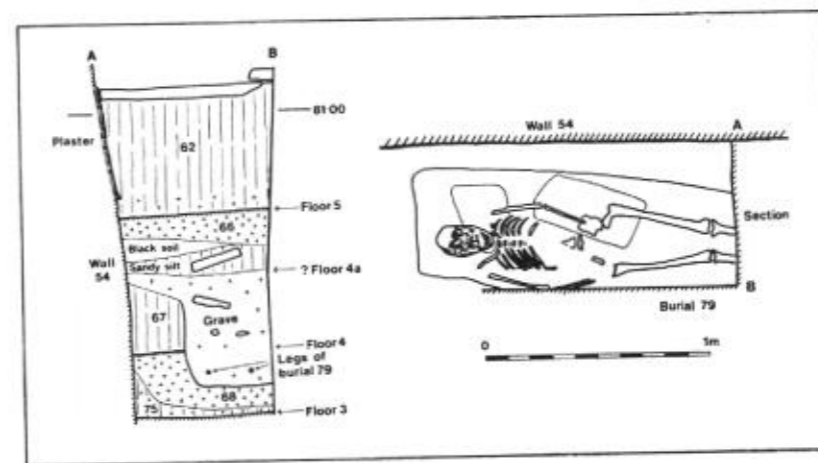


FIG. 6
The excavation—east face of area C and burial 79

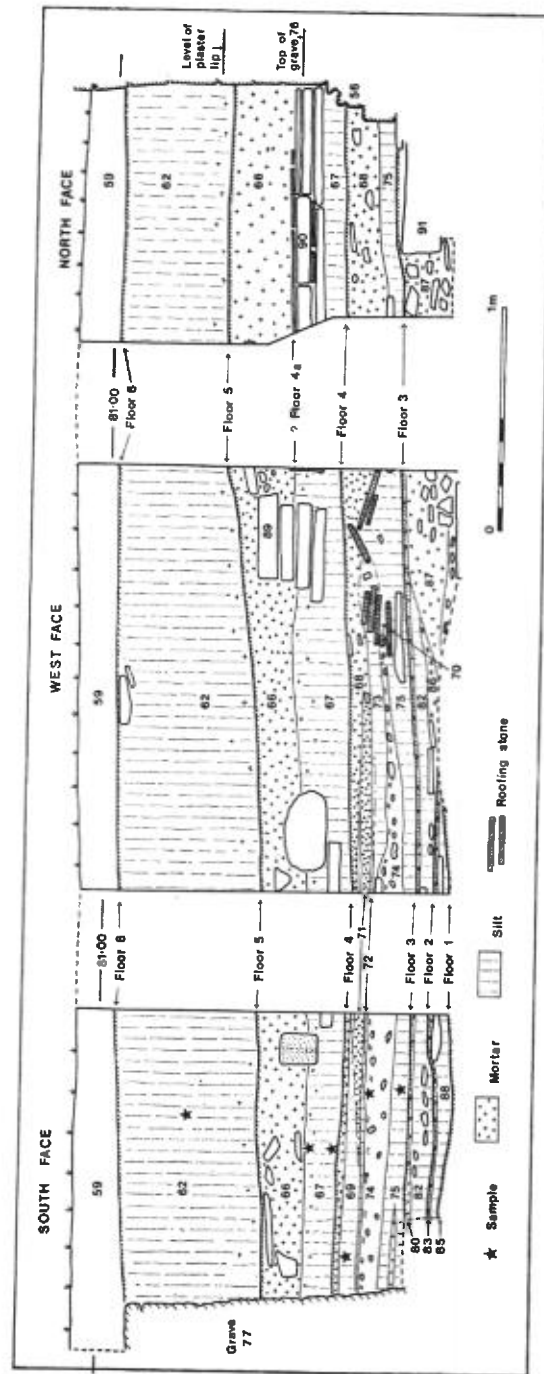


FIG. 5
The excavation—area A sections

Summary of chronology and periods

Period 1: Features predating the construction of the north chapel arch (FIG. 5)

Floor 1 (context 85): patchy mortar floor (not removed)

Make-up (context 88): thin silt layer

Floor 2 (context 83): rough mortar layer about 1.0 cm. thick

Both floor levels were very patchy and are considered to be the result of demolition of the north wall of an earlier church in advance of construction of the 13th-century north chapel arch. Stones of the foundation protruded through floor 1. The period may thus be of short duration during the 13th century.

Period 2: Construction of the north chapel arch (FIGS. 2, 4 and 5)

Foundation (context 91): rough stonework on top of foundation of pre-13th-century north wall (not removed)

Chapel arch (context 56): see p. 272 (not removed or disturbed)

Make-up (contexts 82, 86

and 87 : brown soils with some clay and stones

Floor 3 (context 80): mortar layer—also at lower limit of area C

The eastern respond of the arch is apparently associated with floor 3 which was laid on top of several mixed layers which probably comprise the debris of the new construction. There were no significant finds and the arch is dated to the 13th century on architectural grounds.²¹

Period 3: Flood damage and reconstruction (FIGS. 4, 5 and 6)

Waterborne silt (context 75): laminated 0.1 m. thick

Stone feature (context 70): step or partial blocking to arch

Silts (contexts 73, 72 and 69): possibly redeposited as make-up material

Make-up (contexts 74 and 71): clay, stone and patchy mortar

Make-up (context 68): mortar, wall plaster and some roofing stone with trodden floor 4 on top

Some of the above layers were found in a fragmentary state in area C. Context 75 suggests a serious flood and some alleviation work including a step or blocking of the chancel arch. Finds, mainly from layer 68, include pottery (FIG. 9.1 and 2), ceramic ridge crests, a packhorse bell (FIG. 11.1), nails, window glass, etc. Floor 4 is of 14th- or 15th-century date.

Period 4: Major raising of floor level (FIGS. 5 and 6)

- Silt (context 67): probably waterborne material
 Stone feature (context 90): step or edge of stone floor to chapel
 Floor 4a : postulated on top of 67
 Interments (contexts 76 and 79):
 Make-up (context 66): brown earth with mortar, nails, glass, etc.
 Floor 5 : postulated to be of stone on top of 66

It is suggested that floor 4a was laid in the late 15th or early 16th century and floor 5 in the late 17th or early 18th century. Finds include pottery (FIG. 9.3 and 4), ridge tiles (FIG. 10.1), several small finds (FIG. 11.2-4), glass, plaster, etc.

Period 5: Later raising of floor level (FIGS. 5 and 6)

- Silt (context 62): redeposited waterborne material
 Floor 6 : postulated to be of stone on top of 62
 Interments (contexts) 64, 77 and 78:
 Make-up (context 59): topsoil; modern

This represents a late 18th-century attempt to prevent flooding of the building. It was unsuccessful and the church was abandoned in 1864.

Area D. (FIG. 1): This external trench was up to 2.1 m. deep but did not encounter undisturbed ground. The exposed features are shown in FIG. 3. The outward slope of the upper part of wall 55 was reversed below ground level and it was apparent that wall 54, with the vertical and horizontal chamfers, was a later construction. It is suggested that wall 55 is of 14th-century or earlier date and that it was partly rebuilt or externally refaced as wall 54 in the 16th century.

THE GRAVES AND SKELETAL MATERIAL

Interment 64 – period 5: Brick lined with cover slabs. Contains single coffin, lead lined and covered in wood with an outer layer of leather. Decorated with gold-plated studs, decorated brass plates and handles. The coffin contains the remains of Anne Whittaker of Lyston House who died 16 November 1827, aged 63.²² Left *in situ*.

Interment 79 – period 4: Skeleton in area C (FIG. 6), probably buried from level of floor 4a. Probably male of advanced age. Reburied on site.

Interments 76, 77 and 78 were not disturbed or examined.

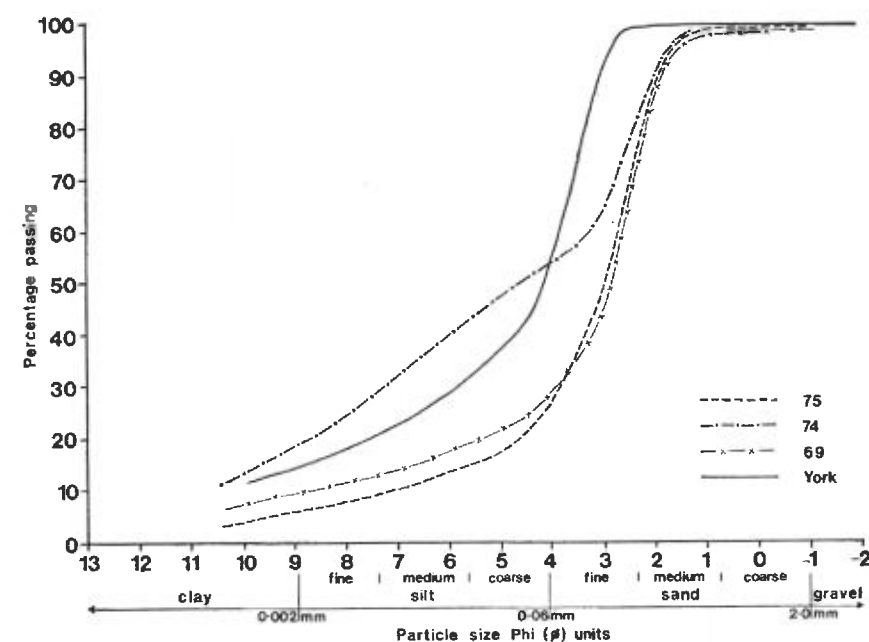


FIG. 7
Soil samples, period 3, particle size analysis

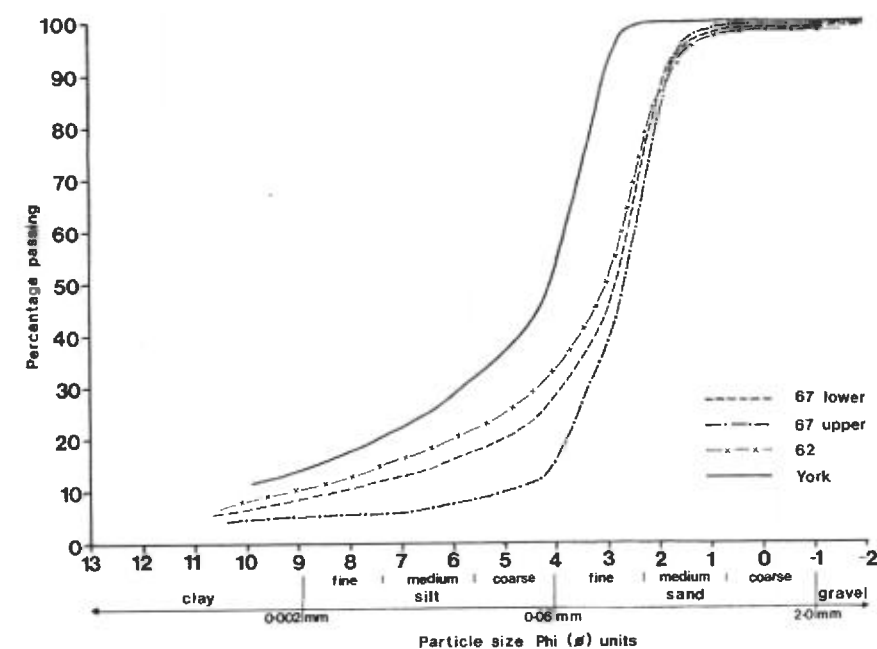


FIG. 8
Soil samples, periods 4 and 5, particle size analysis

SOIL SAMPLES

by J. S. R. Hood

Soil samples were taken from the south face of area A to try and establish which layers, if any, were *in situ* water-deposited sediments. The samples, which were examined in the field and the laboratory, came from the following contexts:

PERIOD	CONTEXT
3	69, 74 and 75
4	67 upper, 67 lower
5	62

The results of the particle size analysis are expressed graphically (FIGS. 7 and 8), and the samples are compared with a modern flood deposit from the river Ouse in York. All the samples, except 74, are characteristic of water-deposited sediments when judged by the shape of the particle-size distribution curves, but only 75 showed the laminations often associated with *in situ* flood deposits. Although this does not preclude the others from being *in situ* sediments, it is more likely that they have been redeposited. Layer 62 was almost certainly deliberately deposited to raise the floor level by 0.6 m.

The differences between the sample curves and that of the modern flood deposit are due, among other factors, to the different water speeds at the time of deposition. The higher the water velocity then the larger the particle size that can be transported. When sedimented out, this will be reflected in the higher mean size for the particles. It is very difficult to estimate the water speed for deposition, due to the highly variable factors involved.²³ Based on the mean sizes, the approximate water speed for deposition of the Llanwarne sediments was between 0.05 and 0.1 cm./sec.²⁴

As exposed in the section, context 74 was a very uneven deposit and, although originally water deposited, the variability of the context suggests that it is dumped material. The sample was contaminated with material from the layers above and beneath it. The curve shown, which has too high a proportion of silt and sand, is therefore not characteristic of the context and is partially the result of sampling errors.

All the samples have archaeological inclusions; some were probably derived from the fabric of the church itself, as the flood water eroded the plaster and mortar from the walls. The inclusions in the sediments which were deliberately put into the church may also have come from the inside of the building. However, it is perhaps more likely that these sediments were derived from deposits which included some archaeological material. The similarity of the *in situ* flood deposit,

context 75, with the other sediments suggests that they were all derived from similar source material, and that the speed of the flood waters was also fairly similar in each case. It is possible that all the deposits which were sampled, except context 75, came from sediments laid down at the same time, and subsequently used to build up the floor level either above the flood level or as a consequence of rebuilding works. A brief description of the methods used, and a summary of the results are given in the full report.

THE FINDS

Pottery

As is often the case with excavations within and close to churches, very few sherds of pottery were found; and these only tend to confirm the suggested chronology. All sherds are from area A unless otherwise shown.

Context 73 – period 3: (FIG. 9.1). Fragment of handle of a smooth fabric with orange surfaces and a grey core.

No trace of glaze
(Hereford fabric D.2)²⁵ 12th–early 13th century

Context 71 – period 3: Body sherd of cooking pot with some mortar adhering. Dark grey fabric, coarse and apparently not wheel turned.
(Hereford fabric A.2)²⁶ 13th century

Context 70 – period 3: Fragment of rim of small bowl. Red micaceous fabric with grey core. Slight trace of external glaze. Form not known but probably of 14th- to 16th-century date

Context 68 – period 3 – area C: (FIG. 9.2). Cooking pot rim. Grey fabric with buff surfaces. Probably wheel smoothed with a slight groove on top of rim.
(Probably Hereford fabric A.2)²⁷

Context 67 – period 4 – area C: Fragment of lipped rim. Smooth micaceous red fabric with slight traces of external glaze. Form not known but probably 15th to 17th century.

Context 66 – period 4: (FIG. 9.3). Several fragments of rim and body of wheel-turned cup or small jug of white fabric with internal and external speckled green glaze.
(Hereford fabric G.6 – ‘Tudor Green’)²⁸ Late 15th to late 16th century

Context 66 – period 4: (FIG. 9.4). Fragment of lipped base of cup or possibly chafing dish. Red fabric with no glaze. Wheel turned.
(Probably Hereford fabric B.4)²⁹ Mid-16th to 17th century

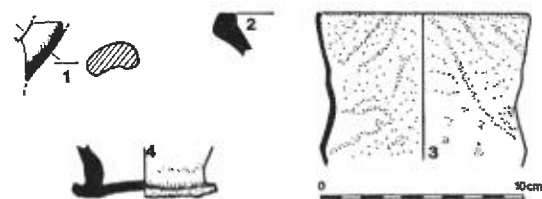


FIG. 9
Pottery

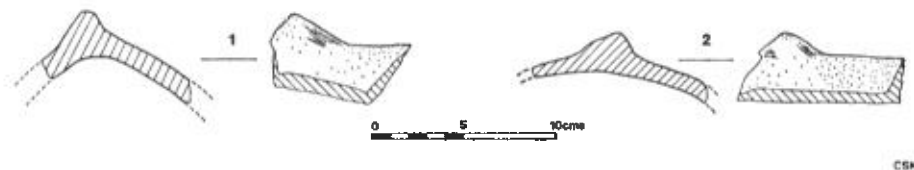


FIG. 10
Ridge tiles

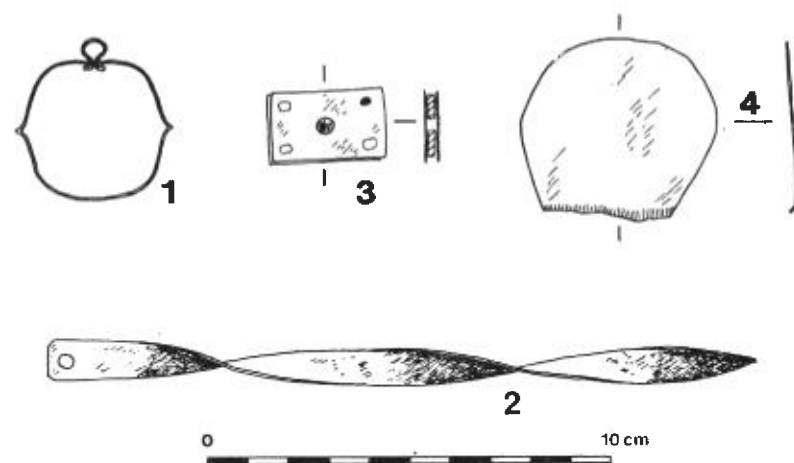


FIG. 11
Copper and copper alloy objects

Context 66 – period 4: Two fragments of wheel-turned bowl of red fabric with internal specked glaze.

(Probably Hereford fabric B.4)³⁰ 17th century

Context 66 – period 4 – area B: Body sherd of smooth red fabric. Not closely dateable.

Context 66 – period 4 – area C: Body sherd of red fabric with external green specked glaze and trace of grooved decoration.

15th to 16th centuries

Context 62 – period 5: Two small fragments of dark red fabric with internal and external black glaze.

(Hereford fabric A.7d. or G.8³¹ – probably tygs). Late 16th to 17th centuries

Context 60 – period 5 – area D: Small body sherd of orange fabric with external dark green glaze. Probably part of late or post medieval jug.

15th to 16th centuries

Context 60 – period 5 – area D: Fragment of cup or small jug. Cream fabric with black internal glaze and dark brown external glaze.

Probably Staffordshire 18th century

RIDGE TILES

Fragments of ceramic ridge tiles were found as follows:

PERIOD	CONTEXT	AREA	QUANTITY
3	68	C	3 fragments
4	67	A	1 large piece
4	67	C	10 fragments (FIG. 10.1)
4	66	A	9 fragments
4	66	B	3 fragments
4	66	C	3 fragments
–	84	D	11 fragments (FIG. 10.2)

Several different varieties were present, identifiable mainly by the different glazes. These ranged from a sparse cover of a green specked glaze to thick green and greenish-brown glazes. Several tiles have fragments of mortar adhering to the lower surface and edges. Two fragments complete with hand-made crests were found (FIG. 10). The tiles are mainly the products of the Malvern Chase kilns (Fabric B.4)³² and were probably made during the 15th or 16th century. A few

small fragments may have a more local origin (Fabric A.7)³² and be of 14th-century date. With the exception of the three small fragments from context 68 (period 3), the examples found were doubtless the debris discarded after the building was re-roofed, possibly several hundred years after they were first used.

Clay Pipe

One fragment of clay pipe was found in context 66. It is probably of late 17th- or early 18th-century date.

Window Glass

A few fragments of window glass were found in context 68 of period 3 but by far the greatest quantity was in context 66 of period 4. Most fragments were totally opaque with flaking surfaces and only traces of painted decoration. Visual examination was insufficient to establish either the colour of the glass or the colour of the paints used for decoration. Most pieces had wavy-line painted decoration but were so small that no definite pattern could be established. Other pieces, which were decorated with lines, cross-hatching and dots, suggest that the fragments are part of a reasonably large picture. Several fragments were complete small panes of glass which had been chipped around the edges when they were cut to size. Rectangular and triangular shapes were identified. The thickness varied from 0.15 mm. to 0.5 mm.

A few fragments in context 66 were of a different type. The glass was very thin and had laminated and flaked. The light green colour was translucent and the pieces had the typical thickened edge associated with spun glass.

The two types of glass from context 66, which is considered to be of late 17th- or early 18th-century date (p. 282), both probably represent the rebuilding postulated at that date. The opaque, decorated glass was presumably removed from the windows at that date and replaced by clear glass. Glass was in use for church windows in south-western Herefordshire from at least the early 13th century and there are several examples of 14th-century work still surviving.³³ The early glass from Llanwarne may be of this period but could equally be related to the 16th-century panels now in the modern Christ Church.³⁴ None of the glass found is suitable for illustration.

Iron

Nail shanks and heads and a few complete specimens were found in several contexts, but by far the largest amount was in context 66 of period 4 and presumably associated with the late 17th- to early 18th-century rebuild. Other nails were

from context 82 of period 2, contexts 68, 71 and 73 of period 3 and context 67 of period 4. In all cases the nails could be either the result of demolition or dropped during the reconstruction work. None are illustrated.

An iron object from context 66 has not been identified. It consists of a bar of circular cross-section, 12 mm. in diameter and 240 mm. long with a D-shaped handle at one end and a right-angled piece at the other. It may be a very long key. Not illustrated.

Copper and Copper Alloy

Context 68 – period 3: (FIG. 11.1). Almost spherical hollow copper object consisting of two halves soldered together with a small hook affixed at the top. This is a 'rumbler' bell or packhorse bell and would have had a small stone or iron pea inside to make a noise. The illustration shows the bell complete but when found it was squashed with part missing.³⁵ Similar types of bell were in use from the 13th century. This one is probably of 13th- or 14th-century date.

Context 66 – period 4: (FIG. 11.2). Twisted copper bar 0.07 x 10 mm. in cross-section and 175 mm. long, broken at one end and a punched hole at the other. Probably part of an ornamental grille such as those in the front of confessional boxes.

Context 66 – period 4: (FIG. 11.3). Two pieces of copper plate rivetted together at the corners and with a hole drilled through the centre. A fragment of leather survives between the two plates. The plates were apparently to strengthen the leather at this point where it was hooked onto something through the hole, rather than to join two pieces of leather together.

Context 66 – period 4: (FIG. 11.4). Fragment of copper disc of uncertain use, slightly bent and probably broken at the bottom end.

Wall Plaster

Wall plaster was present on the interior of the north wall of the chancel below the present ground level. It could be separated into two parts, the lower apparently associated with the period 3 floor, 4, and the upper with a lip (FIG. 2) on the level of the period 4 floor, 5. Plaster was also found during the excavation in areas A and C in layers 66 (period 4) and 68 (period 3). There was no evidence to show that the plaster had been painted any other colour but white and there has been no analysis of the fabric. Plaster was also present on the external face of the north wall of the chancel, both above and below the present ground surface. There was no evidence to indicate when it was applied to the wall.

Stone

Stone roofing tile was present in feature 70 of period 3, presumably re-used from an earlier constructional period. It appears likely that the building had a stone roof during most of the proposed archaeological periods up to 1864 when the roof was removed.

Architectural fragments of stone were found in context 66 of period 4. The two pieces, which are small and not illustrated, are apparently parts of window mouldings. A fragment of carved stone found in the collapsed debris from the upper part of wall 55 is identical to the moulding in the early 14th-century windows in the nave and south aisle.

Stones with a chamfered edge were found in the fabric of wall 54 and are shown on the internal and external elevations (FIGS. 2 and 3).

CONCLUSIONS

There is no evidence, either from the structural remains or from the excavation, for the church which was consecrated by Bishop Herwald about the time of the Conquest and which is mentioned in the Domesday Survey (p. 270). The various references to a church of pre-12th-century date could refer to a building on this site or to an alternative one somewhere in the neighbourhood.

However, the excavation has shown that there was a pre-13th-century church on this site which apparently had its north wall on the same line as the present north wall, but with a floor level at least 1.6 m. below the present ground surface. Are there any parts of the existing building which belong to this pre-13th-century church? The 13th century was evidently a period of large-scale reconstruction and the remaining masonry is apparently all of this or later date, but two areas may need some reconsideration.

It has been suggested (p. 274) that the lower courses of the north wall below the three windows may be of an earlier date than the 14th-century windows above. This could be part of the 13th-century rebuild but only excavation would show if this stonework is separate from that surrounding the north chapel arch and therefore possibly earlier.

A similar situation exists to the east of the north chapel arch involving the section of wall which collapsed and has now been rebuilt. This section, which is shown in the elevations (FIGS. 2 and 3), and is interpreted in FIG. 12, contained no architectural features but is obviously of separate construction to the north chapel arch and to the eastern part of the north wall of the chancel. This wall has been described as being of 14th-century date (p. 272) but it is possible that it pre-dates the north chapel archway, and if so, it would be part of the earlier build-

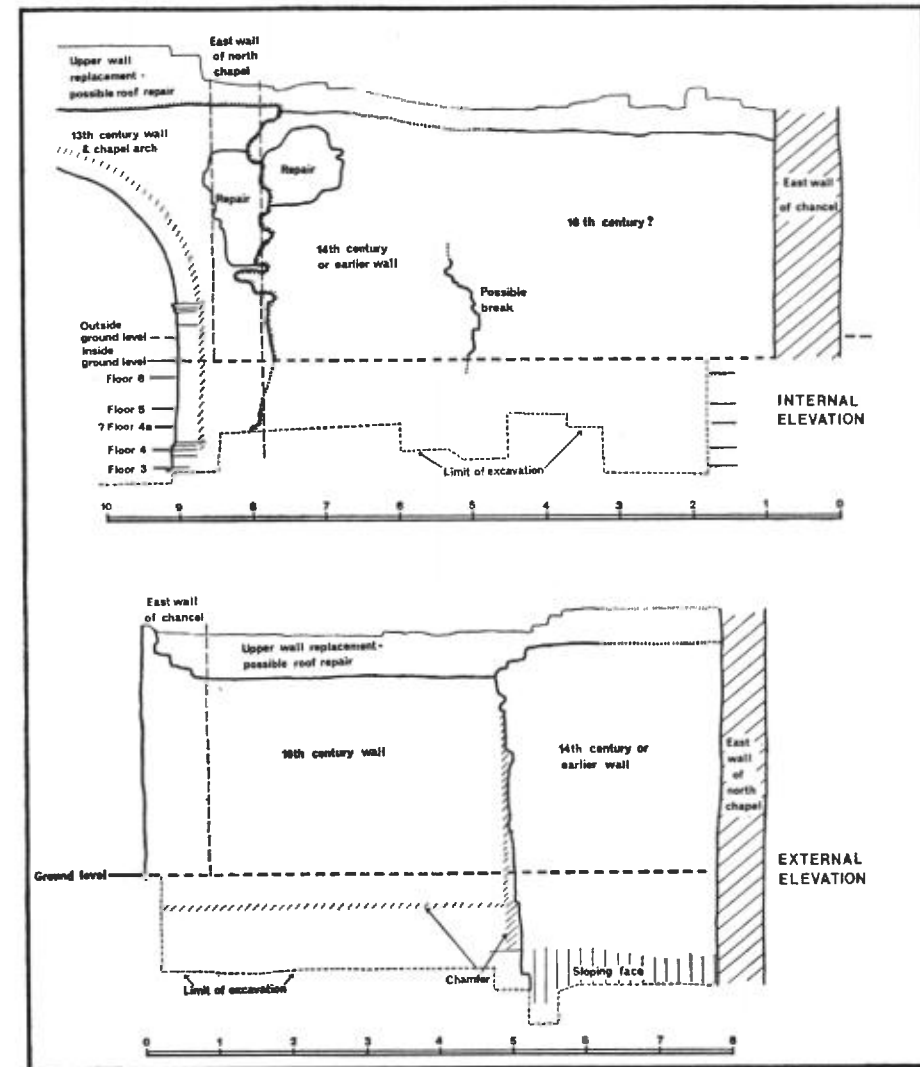


FIG. 12
Llanwarne Church; interpretation of the internal and external elevations of the north wall of the chancel as shown in FIGS. 2 and 3

ing. The junction of this wall with the fragment of wall surrounding the north chapel archway could not be examined to the full depth of area A because the period 4 grave, 76, which was left *in situ*, had been inserted across this join.

The large-scale 13th-century reconstruction, represented above the ground by the south arcade, the north chapel arch, and the chancel doorway, was apparent in the excavation of area A by the debris layers 82, 86 and 87 which were sealed by floor 3. From these remains we can postulate that the building was of similar size to the present one with a south aisle and north chapel, although the length of the chancel is not known.

However, the 13th-century construction may not have been as simple as is postulated above. The slab floor level seen in a hole dug next to the eastern end of the arcade was at 80.34 m. whilst floor 3 was at 79.6 m. It was assumed that the slab floor next to the arcade was associated with the original construction of the arcade³⁶ but if this was the case then several steps would have been needed to proceed from the nave into the aisle. One possibility is that the slab floor in the arcade should be related to floor 5, and that the base of the eastern respond of the arcade is more complex than originally shown,³⁷ but the same discrepancy of some 0.65 m. shows in the level of the arch springing between the arcade and the north chapel arch. It is perhaps equally possible that the arcade was rebuilt as part of the 14th-century reconstruction, using the original materials but raising the level of the whole structure to allow for the raising of the interior floor level after the postulated flood damage.

The architectural evidence indicates that there was a massive rebuilding in the early 14th century when the external walls of the nave and south aisle were replaced. It can be suggested that this was the result of a serious flood which is represented in area A by layer 75, a water-deposited silt some 0.1 m. thick. This flooding may have caused serious structural damage; the silt was not removed from inside the church and the period 3 layers, which sealed this silt, were all either worn floor levels, or apparently associated with building works which were completed when floor 4 was laid, some 0.3 m. above floor 3 at 79.9 m. The use of roofing stone in feature 70 (area A) and the presence of much decomposed sandstone in layer 74 may also be evidence for substantial building works at this time. Although this constructional period was not firmly dated during the excavation, it was apparent that it was the first major reconstruction of the church after the north chapel arch was built and should thus be associated with the 14th-century rebuilding suggested on architectural evidence.

Later in the 14th century the north chapel was probably rebuilt and, although this has not been confirmed archaeologically, it may be related to feature 70 and the increased amount of debris in layer 68, which is thicker near the north chapel.

If this is accepted then floor 4, which seals layer 68, would be the floor level on completion of this rebuild and the floor associated with the early 14th-century work would be the top of layer 71, badly worn and eroded in the approaches to the arch in area A.

The Gamber Brook which runs along the northern side of the churchyard now has a mean level of about 80.2 m; about 0.9 m. below the present level inside the church. This may be compared with a note in 1861 when the brook was thought to be 6 ft. below the level of the paving inside the church.³⁸ However, it is now about 0.6 m. above floor 3 and 0.8 m. above floor 1 and it is evident that the hydrology of the area has changed substantially since the area was first chosen as the site for a church. Flooding of the Gamber Brook is not recorded but major floods on the Wye could perhaps be related; although the Wye has a large catchment area. Early floods have been noted in 1447/8, 1660, and 1730³⁹ and later ones in 1795, 1812 and 1814.⁴⁰

In 1405 an Indulgence was promised to all who visited the church of Llanwarne in honour of St. John of Bridlington and contributed to its funds. John of Bridlington, prior and almoner of that house for seventeen years died 2 October 1379 and was subsequently canonised. In 1405 an image of the new saint had been erected in Llanwarne Church—the cult being brought to the Welsh Borders by the Augustinian Brethren of Llanthony, patrons of Llanwarne. The contributions would doubtless have been for repair work.⁴¹ During the 15th century the massive western tower was added to the building and the lych-gate was probably built, but neither of these constructions need have left traces in the areas excavated.

The period 4 features have been split into two parts; the earlier one, represented by the redeposited waterborne silt layer 67 and the postulated floor 4a above, is thought to represent late 15th- or early 16th-century work which could have included a major reconstruction of the chancel. The east window has a 16th-century moulded label and stops, and is considered to have been re-set into a rebuilt wall. This east wall and the external eastern part of the north wall are of similar construction and may have been rebuilt at the same time. The rebuilding either did not continue below the ground level at the time, for there is no construction trench visible in the section of trench C (FIG. 6) or the eastern part of the north wall of the chancel was only refaced externally.

It is suggested that the postulated stone floor 4a was removed in the area excavated before the reconstruction works of the later part of period 4. The first works may have been the replacement south doorway and the construction of the south porch in the early 17th century. This was followed by works, which included the insertion of a new south window in the chancel, the reconstruction of the west window in the north wall of the nave to provide light for the new

gallery and the re-roofing of the whole building with a slightly different pitch. This resulted in a thick spread of building debris, layer 66, which was sealed by the stone flag floor 5. This work probably dates to the late 17th or early 18th century and the floor was then almost level through most of the church at 80.3 m., although it rose to 80.45 m. in the north chapel and 80.5 m. in the chancel.

The final raising of the level of the floor in the nave, represented by the thick, period 5 layer 62, which was sealed by floor 6, probably took place in the later part of the 18th century. Grave slabs of an earlier date were apparently set into this new floor and additional graves were dug whilst it was in use. Then, or possibly a short time later, the level of the window sills was raised in the south aisle presumably to combat the flooding.

Without massive drainage works and a deepening or diversion of the Gamber Brook, the battle with the rising water table must have been hopeless. Dampness would have found its way up the walls and attacked the plaster and woodwork; the ground floor of the tower would have become waterlogged and to enter the church dryshod would have been impossible. The only practical solution in the 19th century, was to abandon the site and rebuild further up the hill.

CHRONOLOGICAL OUTLINE

The following table attempts to relate the architectural and archaeological periods and provides a provisional dating sequence.

SUGGESTED DATE	ARCHAEOLOGICAL PERIOD	DESCRIPTION
Pre 13th century	1	Church of unknown size but with north wall on line of present north wall. Floor level below 79.4 m. (Floor 1 or lower)
13th century	2	Construction of south arcade and north chapel arch—the church would then have been approximately the same size as at present. Floor level 79.6 m. (Floor 3)
Early 14th century	3	External walls of nave and south aisle replaced possibly after structural damage caused by flooding. Possible reconstruction of south arcade. Floor level 79.9 m. (Floor 4)
Late 14th to 15th centuries		Insertion of window in chancel. Rebuilding of north chapel. Addition of west tower and lych-gate
16th century	4 (early)	Reconstruction of chancel. Floor level 80.1 m. (Floor 4a)
17th century		Insertion of new south doorway and porch
Late 17th to early 18th centuries	4 (late)	Insertion of south window in chancel. Reconstruction of west window in north wall of nave. Insertion of gallery and re-roofing of whole building. Floor level 80.3 m. (Floor 5)
Late 18th century 1864	5	Blocking of lower parts of windows. Floor level 80.9 m. (Floor 6) Abandonment of site

It should be emphasised that the archaeological excavation work at Llanwarne Old Church has been kept to an absolute minimum commensurate with obtaining a coherent record during the reconstruction works. The chronology detailed above is an attempt, doubtless incorrect in many details, to present an outline of the complex history of this building using the evidence available. Total excavation of the interior would doubtless present a different and much more detailed picture. Normally excavation of small trenches or areas within or around a church should

be avoided as much as possible as this, at the best, only produces a fragmentary picture and, however good the recording, means that the archaeological levels have been damaged for future generations of archaeologists.

THE SITE IN THE FUTURE

The eastern part of the north wall of the chancel has now been restored to vertical and the western part rebuilt. The whole building is re-pointed in uniform style and the tops of the walls levelled and slated to prevent damp entering the fabric. There should be no need for anything but minor repair works for many years and the deep archaeological levels which have been shown to be relatively undisturbed by modern intrusions, can be preserved for future generations.

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The Perpendicular Style in Herefordshire

By H. J. POWELL

WHEN Thomas Rickman introduced in the early 19th century his classification of Gothic architecture, he produced something that, with all its faults, has provided a sound basis upon which later writings have been based. One of the troubles has been deciding on dates when one period gave way to another and in my own studies, which have been carried out in a small and local area, I have always stressed the variation in dates between one district and another even in the county of Hereford itself. This is particularly so in the case of Perpendicular architecture which according to Rickman covers the period 1377-1546.

A recent publication entitled *The Perpendicular Style* by John Harvey draws attention to the particular features of this period of Gothic architecture and points out that the old idea that the style was debased or simplified owing to the Black Death or for economic reasons was incorrect. According to Harvey the style commenced in 1330 and he gives proof of this in his book. The style is said to end in 1485. The Black Death occurred 1348-9. He draws our attention to the fact that the style originated in England and owes nothing to foreign influence.

I do not think it is entirely true to say that the style was not simplified in detail and in the mouldings later in the period and this may have been due to economic reasons and shortage of skilled tradesmen after the Black Death, but I do think that the style has not been treated with the study it deserves. It should also be noted that it is a separate period from the Tudor style which is often regarded as a later branch of Perpendicular and treated as such. The Camden Society are also responsible for much ill informed criticism and helped to denigrate the style.

This style has been held to have continued until 1540 or even 1558 and although there is a link through the Tudor period, there was a debasement in the work and according to Harvey a backwater of curvilinear pattern from the continent and specially Flanders. A recent theory has tried to show that Perpendicular was borrowed from France where rectilinear pattern in screenwork and blind tracery were used to cover wall surfaces. Harvey points out that this work in no way remotely resembles English work.

Surprise has sometimes been expressed at the speed in which the new style was carried around the country but there is a reason for this. Assemblies of masons were held where ideas were exchanged. We are told that in 1320 Hereford Cathedral proposed to carry out works 'upon the ancient foundation which is

thought to be firm and solid in the judgement of masons and architects regarded as skilled in their art.' It appears that Hereford took advantage of a session of masons to obtain some free advice. I think you would find that clients, architects and contractors acted very much as they would today.

I, therefore, thought that an investigation of the style as relating to Herefordshire would not be amiss and I have some interesting facts to put before you as a result of my research. The county as a whole is not noted for its Perpendicular architecture as we do not have the fine wool churches found in Gloucestershire and elsewhere, but like so many other things in the county of Herefordshire, there are good examples and some surprising discoveries come to light.

It may surprise you to be told that in this county we have a church tower in the Perpendicular style dating from 1359, one of the earliest hammer-beam roofs in the country and that fan-vaulting existed in the cathedral at Hereford at about the same time as in the cloisters at Gloucester and almost certainly by the same master mason. Furthermore, Harvey tells us that the evidence points to fan-vaulting having been first used at Hereford or Tewkesbury and not at Gloucester as has always been thought. I have always found that although isolated, Hereford can always produce some outstanding examples of all periods of Gothic architecture and later styles.

It is by window tracery that most people recognize Perpendicular architecture and Harvey points out that in addition to the unique feature of vertical members of tracery rising to cut the curve of the main arch without deflection, the following are manifest marks of the Perpendicular style: - (1) Four-centre arch and its variants; (2) Square label, especially surmounting an arch; (3) The casement mould; (4) Double ogee mouldings; (5) Bowtell mould treated as shaft; (6) Base-moulding of double or ogee form. The most interesting point for us here is the mullion being carried up without deflection which points to the so-called 14th-century Hereford window. There are plenty of examples of this in the city and county. There are two excellent windows of this type in the east end of Much Marcle Church and I recently pointed them out to an inspector from the D.O.E. who was at the church with me. He suggested that from Much Marcle to Gloucester was only a short journey and the idea could have been imported from the early Perpendicular work at Gloucester. This is a very interesting suggestion and it fortifies my feeling that this so-called 14th-century window is really a Perpendicular window and not a Decorated window as it has always been thought.

Professor Willis, the 19th-century archaeologist, pointed out to a meeting of the Archaeological Institute at Gloucester that the Perpendicular style . . . 'must have begun somewhere, in some place the mullion must have been carried up for the first time'. Work in the south transept at Gloucester was considered Perpen-

dicular, but it was wanting in its chief characteristic as the mullions were not carried up to the head of the arch. This was first done at Old St. Paul's and also at Gloucester in the choir and elsewhere.

We are told by John Harvey that there were few major building schemes with fully Perpendicular detail until after 1375 and that the central tower of Worcester built in 1357-74 does not employ strictly Perpendicular detail. It is, therefore, extremely interesting to be told that 'At Hereford, on the contrary, one of the most vital buildings in the development of the new style was completed in the seven years 1364-70. This was the upper part, with vault and windows, of the decagonal chapter-house now in ruins'. It has been ascertained that there is a close link between this chapter-house with its fan-vault on a large scale and the smaller vaults of the east cloister at Gloucester. The construction was undertaken by Thomas de Canteburgh, mason and citizen of Hereford from 13 December 1364. He almost certainly came from Cambridge in Gloucestershire. The work was carried out under contract for a receipt survives from 1367 for an instalment covering payment for the fourth quarter of the third year. It is probable that Canteburgh was not the designer as John of Evesham had been appointed by the chapter to have complete control over the works of the cathedral for life. It is possible he provided the designs from which the work was to be carried out. The design can be placed between 1359-64.

We are told that at Gloucester the six bays of the east cloister from the transept to the door of the chapter-house were built between 1351 and 1377 and in spite of their smaller scale, the traceries and fan-vaults of the cloister correspond so exactly with the style and detail used at Hereford that there can be no doubt that the designer was one and the same man. The earliest model for the fan-vault is said to be the monument at Tewkesbury to Sir Hugh Despenser who died in 1349. It is a perfect fan-vault on a small scale but carved out of a solid block and was originally painted to look like vaulting. It probably was not constructed until after the Black Death but a real fan-vault was in existence on a large scale in Hereford in 1364.

Springers of fan-vaulting type existed in the nave of Hereford Cathedral before the collapse of the western tower in 1786 and these can be seen in the old prints of the nave made at that time. However, the actual vault was of the tierceron type similar to that over the south transept which was built shortly before 1404. It would seem that after the completion of the chapter-house in c. 1370 it was intended to use fan-vaults but that the idea was given up possibly for economy. The only fan-vault in the cathedral is in the Chantry of Bishop Stanbury and dates from 1470-80. Harvey goes on to say that the invention of the fan-vault did not originate at Gloucester but at Tewkesbury or Hereford or at one of the great western abbey churches now lost. He says that before 1485 it was centred around Hereford, Tewkesbury and Gloucester. This is certainly an interesting theory.

The vaulting in the south transept at Hereford Cathedral was carried out in conjunction with a large window of advanced design. The slightly earlier south window is of interest in that it has no transom which is very unusual for a Perpendicular window of this size. The window in the south end of the west wall which lighted the altar of St. Anne in this transept was inserted together with the vaulting during the time of Bishop Spofford (1421-48). This vaulting is of the tierceron type and is not a lierne vault as it has sometimes been described. Whilst we are considering the Perpendicular work in the south transept, it is interesting to know how this work was assessed in the early 19th century. I have in my possession what is called 'A brief enquiry into the ancient and present state of Hereford Cathedral' and it is dated 1827. The following is an extract referring to the south transept.

'The first thing, therefore, which suggests itself is the removal of the present groined roof, the conversion of the great window towards the west into two long and narrow lights, upon the principal of those in the north transept and the erection of massive buttresses between them, which would constitute a durable and uniform support, and answer to the disposition of the opposite wall, the centre light of which might thus be reopened, and a vaulted roof constructed of three divisions, either out of the old materials, or of timber like the new groints of the nave; which groins, so far from being a defect, are certainly an improvement upon the old system of stone vaultings, the ponderous nature of which has made dreadful depredations on the clerestory range of many of our Cathedrals, which are, therefore, sustained by flying buttresses; a species of auxiliary rendered necessary indeed, but still innovating upon their ancient character, and destructive of all architectural symmetry; except where they form, as in Henry the Seventh's Chapel at Westminster, a part of the original design, and are constructed, perhaps, as much for ornament as utility'.

This diatribe was written by the Revd. Thomas Garbett, M.A., Master of Peterborough School, and I would suggest that its chief claim to fame is that the whole paragraph is in one sentence suitably punctuated!

Soon after the Black Death when shortage of labour in the south attracted men from the midlands and the north, two brothers Henry and Robert, stonemasons from Yeaveley, Derbyshire, journeyed to London. By 1353 Henry had obtained the freedom of the City of London. This man Henry became an outstanding architect and by 1359 was described as the 'Princes Mason'. Later in the same year he was referred to as the King's deviser (or designer) of masonry. He had official architects associated with him, one of whom was the carpenter Hugh Herland. This was the man who in 1349 commenced building the roof over Westminster Hall, the most splendid timber construction of all.

This magnificent hammer-beam roof was commenced in 1394 and was completed sometime between 1397 and 1400. John Harvey particularly mentions Dartington Hall built in 1389-99 the important hammer-beam roof of which he suggests can only be regarded as a trial-piece by Hugh Herland. He omits to mention, however, the connection between the Westminster roof and the one over the Booth Hall in Hereford. This has been noted before in the *Transactions* but I make no apology in drawing your attention to the matter once again.

The open timber roof was one of the greatest achievements of the time and the development of the hammer-beam truss was one of the great developments of this period.

The present Booth Hall is about 43 ft. 6 ins. long by 27 ft. wide and is now of six bays. The hall was completely timber built, the trusses entirely supported on oak posts about 13 ins. square coming down to a stone plinth at ground level. The roof is a handsome one, the trusses being alternately of hammer-beam and tie-beam construction and 7 ft. 3 ins. apart. This hall, having been 'lost' since the 18th century, was rediscovered in May 1919 when an internal chimney fell and revealed that the modern inn had been built inside the hall. An authority at the time of the discovery thought it dated from between 1380 and 1400 and The Royal Commission on Historic Monuments gives the date as about 1400. This hall was, however, first mentioned in documents at Hereford Town Hall in 1392. Is it possible then that Hereford had such a roof before London? The answer to that is an interesting reference to that great Hall which clearly shows the connection between Westminster Hall and Hereford. The following extract is taken from *A History of the English House* by Nathaniel Lloyd pp. 24-25.

'The records of the re-roofing of Westminster Hall (completed c. 1397) give the names of persons in charge of various works and show how responsibility was divided. They were collected in the *Blue Book* reporting the condition of the roof timbers, following survey by H.M. Office of Works. This book gives detailed references to the documents from which the information was derived. It states:

"In 1394 John Godmeston, Clerk, was appointed to cause the Great Hall in the Palace of Westminster to be repaired, taking the necessary masons, carpenters and labourers, wherever found, except in the fee of the Church, with power to arrest and imprison contrarians until further order, and also to take stone, timber, tiles and other materials and carriage for the same at the King's charges and to sell branches, bark and other remnants of trees . . . accounting for the monies as received and receiving in that office wages and fees at the discretion of the Treasurer of England.

"John Godmeston had been Vicar of Brampton, Prebend of Moreton Parva in Hereford Cathedral, had a third portion of the church of Bromyard in 1387, was Prebend of Wydyngton Parva in Hereford Cathedral in 1389. In 1387 he was granted the chancellorship of St. Paul's Cathedral, and in 1398 the Church of Ross in Hereford diocese. In 1399 he was given the reversion of the first vacant prebend in the college of St. Stephen, at Westminster, a Prebend of Chichester was added to his other preferments and he was made Chamberlain of the Exchequer." (It is evident that he was appointed as a good man of business and to control expenditure).

"At the same time Hugh Herland, Carpenter, was appointed Controller to John Godmeston in respect of this work.

"Hugh Herland was one of the King's master carpenters, 'verging on old age.' He advised on the repairs of Winchester Castle 1390. In 1396 as Keeper of the King's Carpentry Works he was granted a little house in the Palace at Westminster for keeping his tools and for making models (formae, formulae) and moulds for his carpentry work. . . In 1397 he is called King's Esquire, Chief Carpenter, Controller and Surveyor of the Works."

The works, being chiefly carpenter's works, were placed in charge of the carpenter who designed the new roof'. This clearly shows the connection between Westminster Hall and the Booth Hall roof.

Before we proceed with our examination of Perpendicular work in the churches, this might be a good opportunity to mention the College of Vicars Choral at the Cathedral which was built to house the Vicars Choral who were responsible for the singing at the daily services.

The buildings are in the form of a quadrangle and were built in 1473 and are therefore within the Perpendicular period. It is the most remarkable example of mediaeval domestic architecture still in existence, the only other such dwellings but on a different plan being 'Vicars Close' at Wells. The buildings have, of course been altered over the years and the main porch and vaulting date from the 16th century.

The tower of Little Dewchurch Church, Herefordshire's earliest remaining example of Perpendicular work, dates from 1359 and although no competitor to the fine Perpendicular towers that are found in the county of Somerset and elsewhere, is a very satisfying example of the period with double ogee base mouldings. It has also the feeling of a tower of this period and internally has an unusual feature in that there is a pointed barrel vault of stone over the belfry. This vault runs from north to south and is divided into four compartments by chamfered ribs. Harvey lists this tower in his book and it is the first example of this period in the county.

In addition to the early tower at Little Dewchurch, there are six other towers I should like to mention which is the total of Perpendicular towers built in Herefordshire and still standing. The tower at Bridstow dates from the late 14th century and has a moulded plinth and a plain parapet with coping. The west window is of three lights, the middle one multifoiled and the side lights cinquefoiled.

Hentland has a late 14th century tower with moulded plinth and embattled parapets. The west window is entirely Perpendicular.

The tower of Holme Lacy Church is late 14th century with a moulded plinth and a plain parapet.

At Lugwardine there is a handsome tower of late 14th or early 15th-century date with moulded plinth and embattled parapet. The west doorway has a four-centred arch over in a square head with cusped spandrels. Both door and window over have casement moulded reveals. The belfry lights are also casement moulded.

The finest tower of the period in the county is probably Much Marcle which was built late in the 15th century with a moulded plinth and embattled parapet with gargoyles. The belfry openings are of two trefoiled lights with quatrefoils in a two-centred head with casement moulds to the external reveals. This tower once had pinnacles which unfortunately have been removed. I have recently had the privilege of restoring this fine tower and I note that I have previously dealt with the towers at Bridstow and Lugwardine.

The remaining tower which we are to consider is at Weston-under-Penyard. This tower has a Perpendicular west window but otherwise appears to be of the Decorated period. The R.C.H.M. mentioned that the window has been much restored. In all Perpendicular work the weatherings on the battlements should continue down the sides, but I am afraid this is not an infallible guide because many towers have had the battlements rebuilt and sometimes altered. It is interesting to note in conclusion that all these towers are in the eastern half of the county.

After these towers and excluding the cathedral, there are less than a dozen small extensions to churches in the Perpendicular style such as aisles, chapels and porches and the remaining examples in Herefordshire are confined to windows and some fittings which I do not intend to deal with in this paper.

I will, therefore, first deal with the Bishop's Cloister at the cathedral which will lead on to the lesser buildings in the county and the windows which are an important feature in any period of Gothic architecture. The Bishop's Cloister at Hereford Cathedral dates from 1412 to 1418 and was built by Thomas Denyar. A note on 'Architects and Masons connected with Herefordshire' in the *Transactions* Vol. XXXV Part 11 gives the name as Thomas Deuyas (Davis).

The windows have four-centred arches filled with tracery in the Gloucester style but modified. The vaulting is a rare type where the bosses are replaced by open concave-sided stars. This style was first used in the Beauchamp Chapel at St. Mary's, Warwick, and there are only a few examples elsewhere.

At King's Cople the Aramstone Chapel dates from the late 14th or early 15th century and has a moulded plinth and is vaulted with moulded ribs with the key-stone in the form of a rose. The north window has super mullions. The south porch is also of the same date with moulded plinth and parapet. The porch is vaulted. The entrance has a two-centred arch within a square head.

At Sellack Church there is a late 14th-century stone vault to the north chapel. An early 15th-century porch at Richards Castle is of simple design with a two-centred arch and side windows in a square head.

The porch at Ballingham also, of early 15th-century date, is similar to King's Cople but more elaborate. It has a similar entrance within a square head, but the plinth is more elaborately moulded and the buttresses are panelled on the face. The side walls have two trefoiled lights within a square head. The porch is vaulted and has an eight-pointed panel in the centre enclosing a decayed rose.

Aconbury has a fine timber porch of this period erected on dwarf stone walls. A south chapel at Birley is said to be of this period, the framed gable is, however, probably of the 17th century. The fine porch at Dilwyn actually dates from the early 16th century and is outside the scope of this paper, but I feel that it is late work in an isolated area and is such a fine piece of work well within the spirit of Perpendicular and should be included. There are north chapels at Richards Castle and Wellington, the former late 14th century and the latter late 15th century, both of which exhibit Perpendicular windows with vertical tracery or super mullions. At Bodenham Church are some interesting windows formed in the late 14th century or early 15th century when the east bays of the aisles were converted to transepts. The north and south windows have transoms and three trefoiled ogee lights with vertical tracery.

With the exception of the cathedral, most examples of window tracery of this period concern small lights and can be found in not more than two dozen churches. It is surprising, however, that some interesting types of tracery can be found and windows are certainly not confined to the straight reticulated. A summary of the windows is as follows:

Two light straight reticulated. Llangarron east window. Sollers Hope south aisle window.

Three light straight reticulated. Much Cowarne east window. Kinnersley west window. Holme Lacy east window. Ocle Pychard east window. Sollers Hope west window.

Three light with super mullion and transom. Sollers Hope east window. Much Dewchurch and Walford east windows.

Four lights super mullions and transom. Whitbourne east window.

Five light drop tracery. Goodrich east window trefoiled ogee lights.

Five lights super mullion. Weobley east window.

Four lights subarcuated tracery with through reticulation. Sellack.

Square headed clerestory lights at Dilwyn Church.

I would not like to say that other examples of this period cannot be found in Herefordshire, but some original work has been completely restored or altered in the Victorian period. In any case, to include everything would make the paper far too long. The examples given show the best of the work executed locally during the years under review.

There are also various churches, portions of churches and towers which may appear to be Perpendicular but actually belong to the Tudor Period.

Plague, Death and Disease in Herefordshire 1575-1640

By D. A. DAVIES

IN his recent work on Westmorland and Cumberland, Andrew Appleby has suggested that in the late 16th-century and early 17th-century England there were 'two Englands'. The one 'subject to trade depression and harvest failure but able to avoid widespread starvation, the other pushed past the edge of subsistence by these same dislocations'.¹ This paper attempts to see into which category Herefordshire fitted during this period.²

In this study eighteen parish registers were used.³ The aggregative annual burial and baptism figures for the eighteen parishes are shown in FIG. 1. The picture is immediately clear: over and above the marked annual fluctuations in baptisms and burials, Herefordshire suffered from repeated demographic crises in this period.

It is obvious that before one can ascribe a mortality crisis to the effects of harvest failure and famine, disease has to be eliminated as a cause. This naturally poses difficulties, as diagnostic exactitude was unknown to early modern medicine. Nevertheless enough is known about the aetiology of certain diseases to make tentative suggestions about the existence of various epidemics in this period.

Although the tendency now among historians is to play down the effects of bubonic plague, its extreme virulence and instantly recognisable symptoms made it a uniquely feared disease. Langford, for example, tells the horrifying story of a victim from plague being drowned in Leominster in 1603 to prevent the spread of the disease.⁴ Bubonic plague was essentially an urban disease and only very slowly moved into and through rural areas. Furthermore it was a warm weather disease, typically first appearing in late spring, developing rapidly in the summer months and finally dying down with the onset of lower temperatures in the autumn. It could then lie dormant through the winter months before flaring up again the following summer, as appears to have happened in the city of Hereford in 1609 and 1610. The more virulent forms of pneumonic and septicaemic plague, which unlike bubonic plague did not require an intermediate host such as the flea and black rat, are believed to have been comparatively rare in the 16th and 17th centuries.

The crises of the years 1580, 1609-10 and 1636-7 can quite safely be attributed to the effects of plague. The informative register of St. Peter's, Hereford, has the following entry, 'Plague began as followeth, March 1580'.

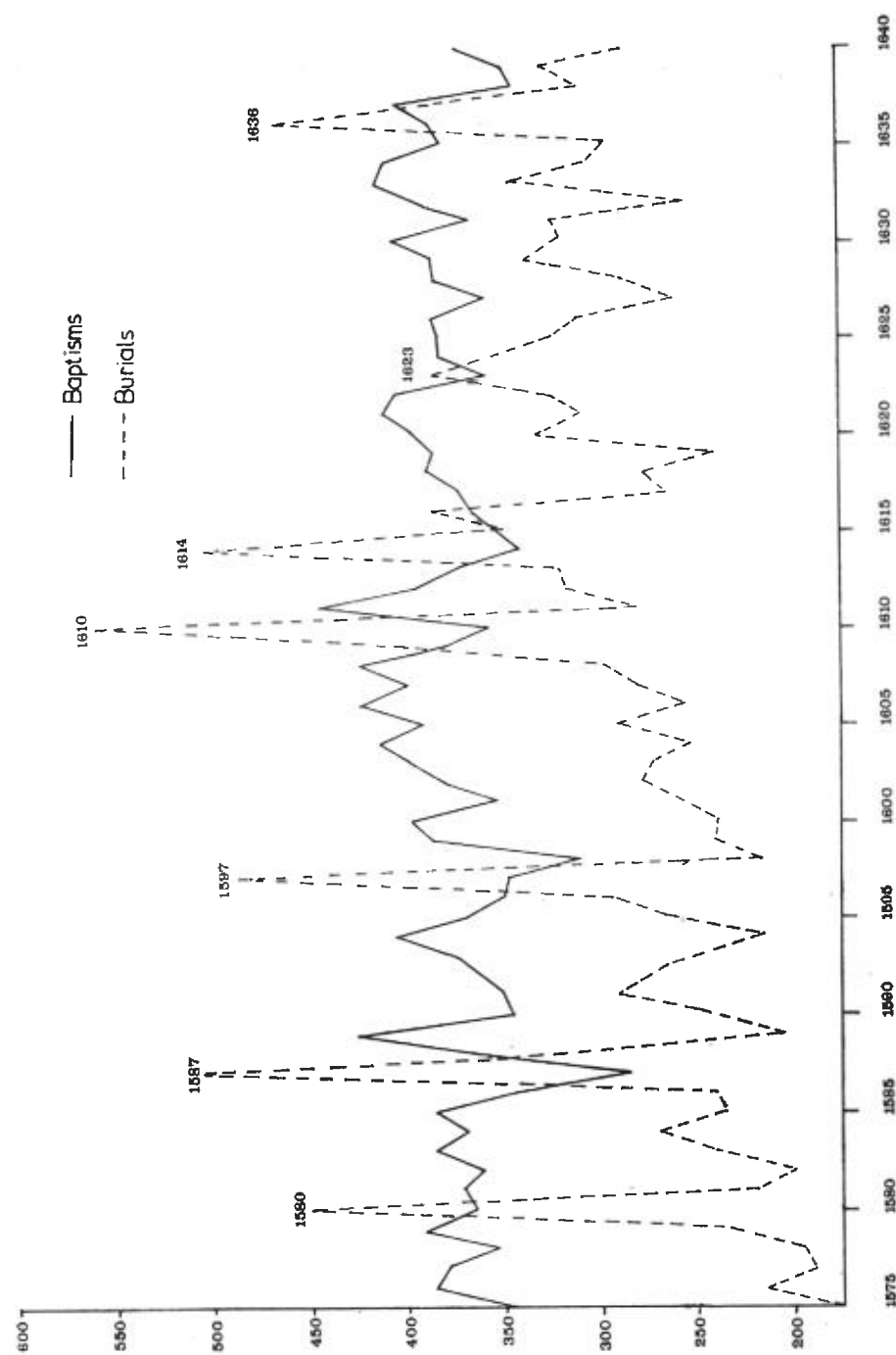


FIG. 1
Total Baptisms and Burials by civil year

Burials were five times the annual average of the previous five years with sixty deaths in the peak months of August, September and October, the typical plague profile. The localised incidence of the disease can be gauged by the fact that Madley, Weston-under-Penyard, Upton Bishop, Bromyard and Dymock were untouched.

The disease struck again in 1609 and 1610. There are contemporary references to plague in both years, indeed due to its presence in Hereford in 1610 the assizes had to be moved to Leominster.⁵ How the disease could decimate the population can be seen in the St. Peter's register. Out of a total of 110 burials between April and December of 1610 only nine are specifically described as 'not of ye sickness'. Plague was also mentioned in the Bromyard and Ledbury registers of that year.

Herefordshire also appears to have been very badly affected in 1636 and 1637, although by no means all the registers show increased mortality in these years. Contemporary references to plague are frequent and a cross in Ross-on-Wye churchyard bears the following inscription 'Plague, Anno Dom. 1637. Burials 317. Libera Nos Domine'. Wigmore and Leintwardine also appear to have been singularly unfortunate in this visitation, for in 1636 they experienced their heaviest recorded mortality in the period covered by this study.

An epidemic disease also believed to have been a great killer at this time was typhus. The disease was spread by the body louse, and thus the optimum conditions for the dissemination of the fever were those favouring louse infestation, namely the crowding together of people in insanitary conditions, usually in cold weather. For this reason typhus was often termed 'Gaul Fever', and in 1614 between May and September eight persons from Hereford Gaol were buried at St. Peter's. The same pattern was repeated in 1616 when three prisoners were buried in January, and three debtors in February. Indeed the presence of typhus would account for the otherwise inexplicable heightened mortality in the years 1614-6.

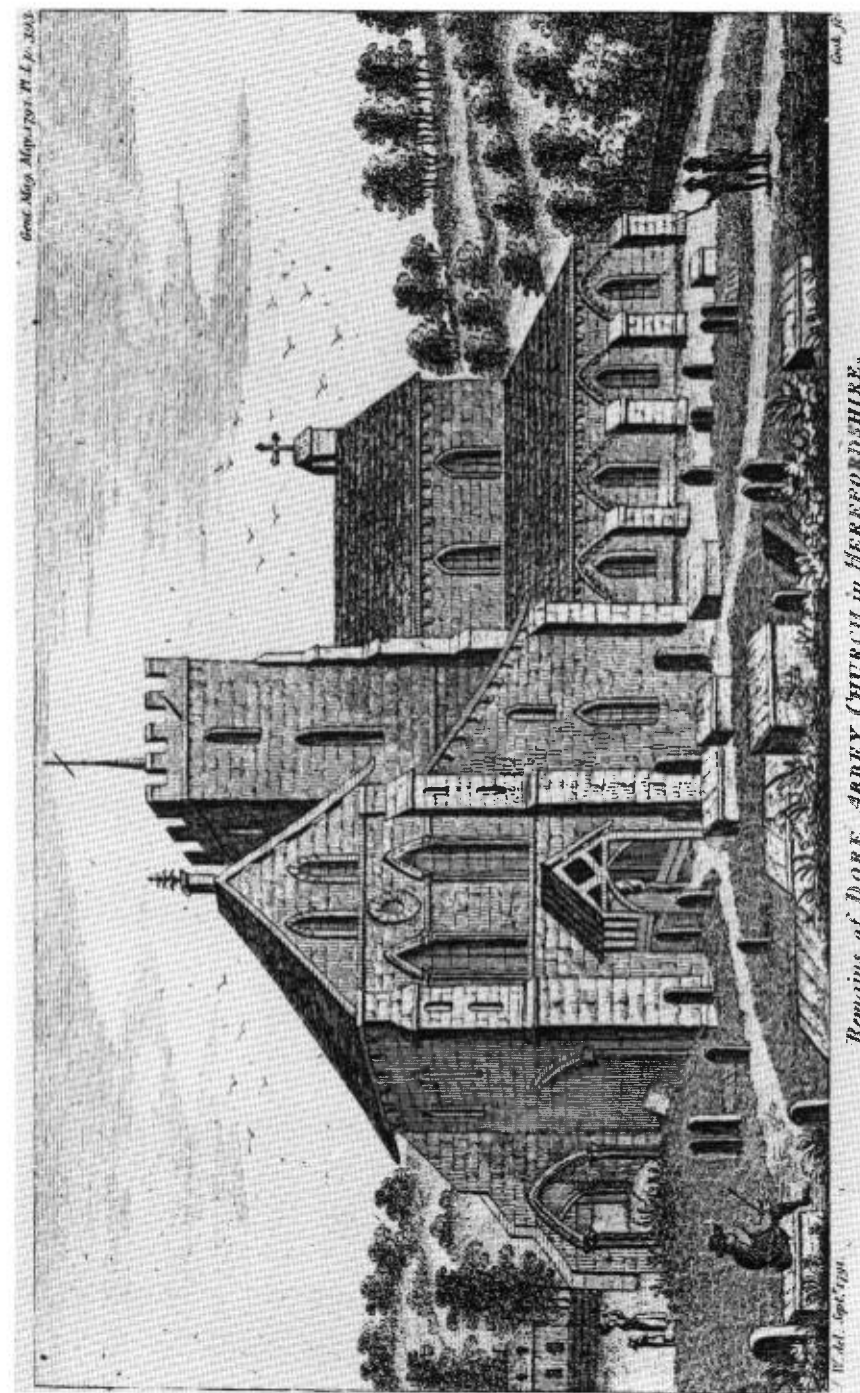
Shrewsbury and Appleby also argue that typhus killed proportionately less children than adults.⁶ In the absence of figures that would give real age at death, Appleby proposes that a proxy for the measure of age would be to consider all persons referred to in the burial register as 'son of' or 'daughter of' as children. The shortcomings of such methods are obvious, but if striking changes in the adult-child ratio occur he believes it to be supportive evidence of an attack of typhus. Using this proxy there would appear to have been four to five times more adults than children buried at St. Peter's in the first five months of 1614. A pattern that also occurred in the Bosbury register. In addition there is no national or local evidence of dearth or poor harvests that would lead one to expect famine.

It is therefore possible to account for certain years where epidemic disease was the obvious cause of death, or where one could say there is negative evidence of famine. The three remaining periods of crisis mortality are however far more problematical.

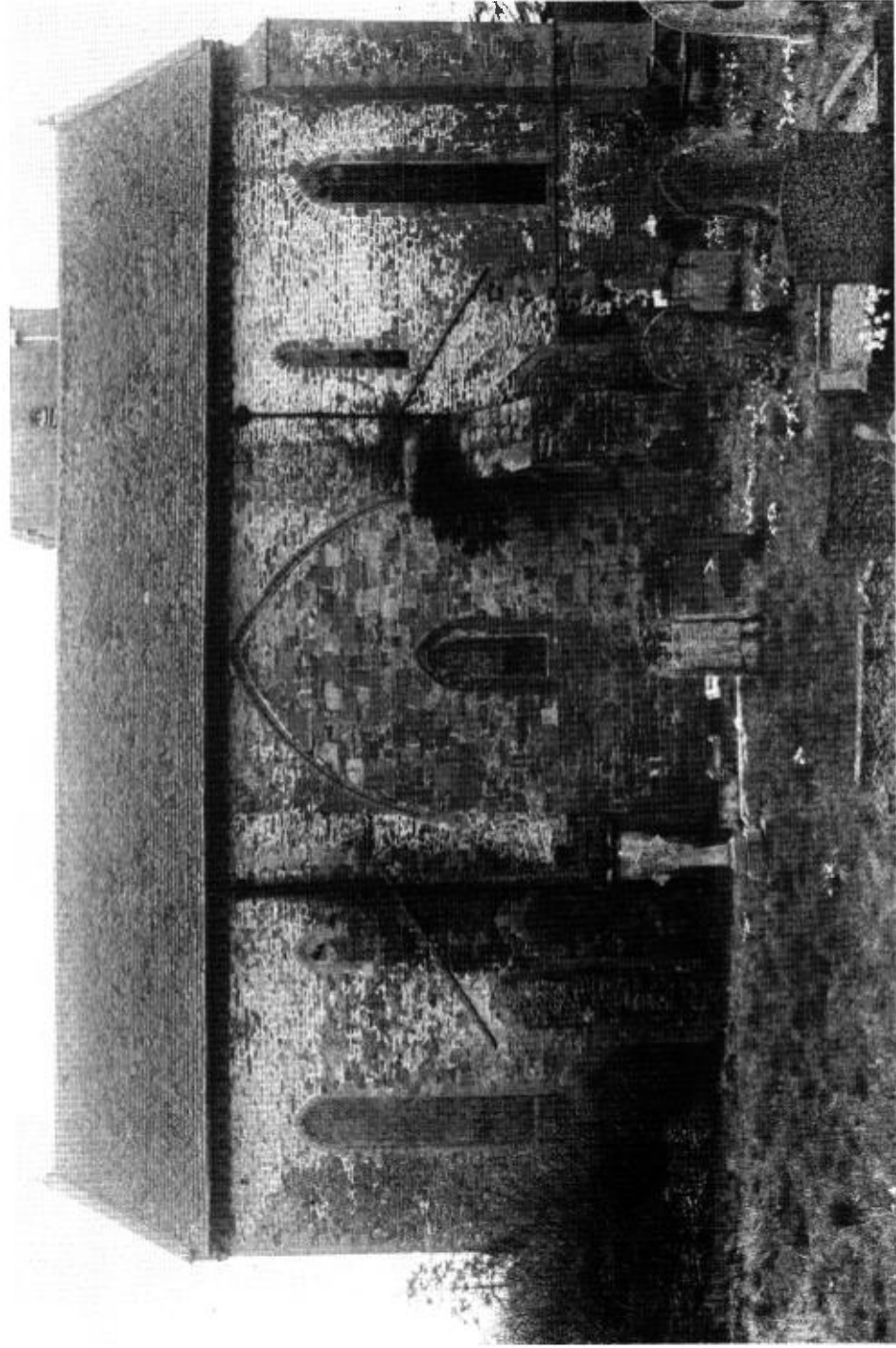
The first of these was in 1587. The crisis was far more extensive geographically than that of 1580. In every parish observed, mortality ranged from two to three times the annual average for non-crisis years. Smith, in reviewing current thinking on the subject, argues that while death from epidemic disease moved in a wave-like motion spreading slowly as the infection diffused from one community to another,⁷ a wide geographic spread of mortality would be indicative of death due to famine. Nationally 1586 was a very bad harvest, if anything, worse in the west due to the exceptionally heavy rainfall of that year.⁸ In a memorandum of 24 April 1586 from the authorities in the city of Gloucester it was stated that 'corne continued at great and highe prices,' this 'extreamitie appeared and remayned more in the countie of Hereford and the Forest of Deane than in the cittie of Gloucester'.⁹ The shortage of corn only being relieved by imports from Danzig and Hamburg. The situation continued into the next year when between Shrovetide and Harvest in 1587 prices were extremely high 'woorke was very skante for poore people, very small utterance of cloth by reason of the warres in Flaunders, so as the poore were miserable distressed in the cuntreyes neare Wales'.¹⁰

It may be that disease exacerbated the effects of a poor harvest. In the Ledbury register it was noted that '15th March died Alice Hall, Wife of Thomas, the younger, Smith. She was the first that died of the new disease this year.' The peak months were May - July with forty-one deaths alone. Shrewsbury gives figures for Leominster that also hint strongly at disease, possibly plague. The annual average for burials in the parish from 1560-1598 was sixty, but in 1587 there were 218, forty-one in October alone.¹¹ All parishes experienced high mortality in the summer months. The presence of famine on the other hand would lead one to expect increased death rates in late winter and early spring, as resources were progressively used up. Because of the extensive nature of the crisis in widely dispersed rural communities one is nevertheless loath to ascribe it to bubonic plague.

It is now known that the population, especially the poorer sections, in Tudor and Stuart England was highly mobile. The economic distress brought about by a series of bad harvests would only have added to this mobility and facilitated the spread of disease, although it must be stated that bubonic plague was unlikely to be dispersed in this way. Whatever the cause, the crisis in



Remains of DORE ABBEY CHURCH in HEREFORDSHIRE.
XIII - Print of Dore Abbey dated 1791 showing the first arches of both the north and south arcades of the nave.



XIV - The present western wall of the parish church showing the infilled arches and the remains of the walls of the nave and north and south aisles (Courtesy of D.O.E.)



XV - Dobunic Staters: Reverse
Left: From Madley Right: From Greyfriars Avenue, Hereford

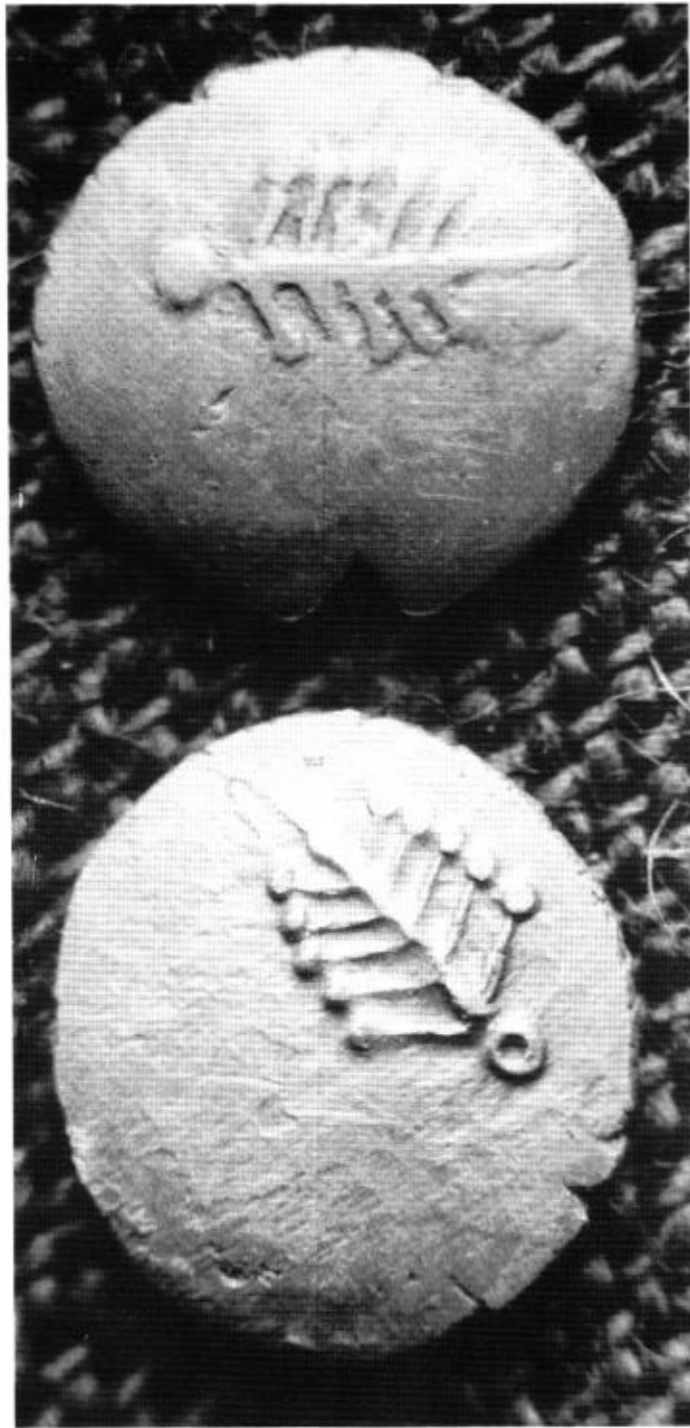
Herefordshire was fortunately short-lived in comparison with the experience of Westmorland and Cumberland where the combination of typhus and famine extended the crisis into the winter months of 1587-8.¹²

The experience of 1597 in many ways resembles that of 1587 except perhaps in its greater intensity. Nationally 1597 was a time of great dearth. The mid-1590s saw a catastrophic run of poor harvests culminating in that of 1596 when Hoskins calculates prices were 83% above his thirty-one year moving average.¹³ Regulations of the corn trade had to be made in Worcester in August of 1597 to stop 'a number of wycked people (who did) most covertously seeke to holde up the late great pryces of corn and all other victuells by ingrossing the same into their private Lands'.¹⁴

The whole county appears to have been adversely affected. Heightened mortality started in the winter of late 1596 and continued into 1598. While the burial series do not in general show any marked seasonal pattern as in 1587, a few parishes such as Pembridge and Dilwyn do show the typical summer peak of plague. Indeed Shrewsbury believes plague may have been present in nearby Leominster in the summer months, although he does not discount other causes following the 'great sickness of smallpox' in 1595.¹⁵ There is however only one mention of smallpox in the sixty-year period covered in this study. The outbreak occurred in Hereford city itself in 1595 when the St. Peter's register notes that 'the small pox began' in July. That fatality was largely confined to young people can be gauged by using Appleby's proxy for age at death when three times as many children as adults were buried during the outbreak in July and August 1595.

There is evidence also that the poorer sections of the population were heavily affected in 1597. Madley register is one that gives full information on the status of the dead. Out of a total of forty burials in that year, fourteen are of what one could term economically marginal people. Between April and December, ten are designated as 'poore wanderer' or 'poore man', three are unknown infants or infants of wanderers, and one is cited as a poor widow. For 1587 the Madley register only mentions two wanderers.

Herefordshire suffered once more from excessive mortality in 1623-4. This occurred at a time of economic recession, following the disastrous harvest of 1622,¹⁶ and coinciding with the lowest wool prices for more than three decades.¹⁷ One is unable however to call this a time of acute demographic crisis when burials only just exceeded baptisms. Indeed a comparison with the north of England shows the most striking characteristic to have been the relative immunity enjoyed by the county from the worst excesses of trade and harvest failure.¹⁸ There is no mention of disease in the registers, and evidence of the cause is inconclusive.



XVI - Dobunic Staters: Obverse
Left: From Madley Right: From Greyfriars Avenue, Hereford.

One could argue that if Herefordshire had suffered previously from widespread food shortage, by this later date it could avoid its most fatal consequences.

In conclusion it is possible to identify epidemic disease, most notably bubonic plague, as the cause behind at least four of the six of the major mortality crises that occurred in this period. The evidence of extensive dearth in the county in 1587 and 1597 suggests that famine was at least a contributory factor in the high mortality of those years, probably exacerbated by epidemic disease in a few centres. Herefordshire was one of the poorer counties in Tudor and Stuart England, yet its reaction to harvest failure would suggest that unlike the north of the country it was able to avoid being 'pushed past the edge of subsistence'.

It might perhaps be pertinent to ask what effect this series of demographic crises had upon the population of Herefordshire in this period. There has been considerable debate about the role of such events on long term population trends. Although the local effect of such crises could be spectacular, more attention has been paid recently to the secular trends in mortality. In order to calculate the crucial demographic statistics such as age at marriage, age at death and life expectancy, it is necessary to use sophisticated techniques such as family reconstitution. In their absence one has to fall back on the crude estimates derived from the aggregative baptism and burial figures.

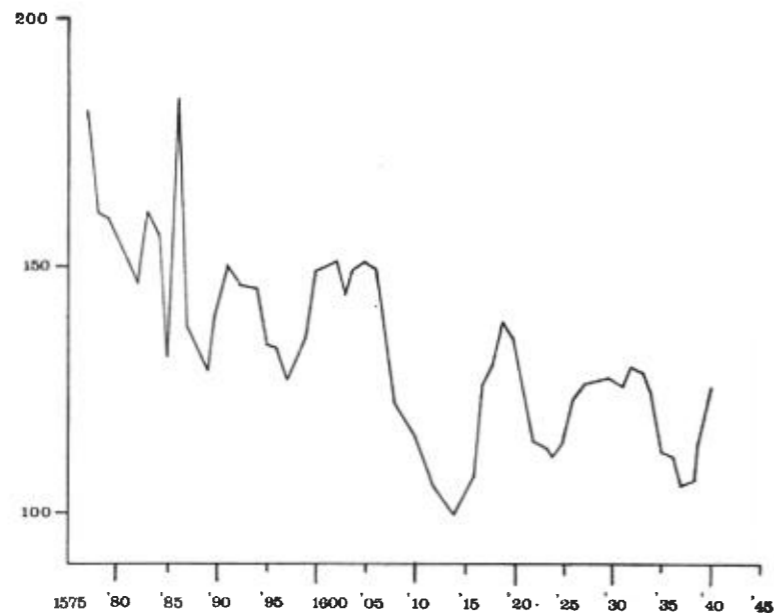


FIG. 2
Baptisms per 100 Burials
(5 year moving average)

It is widely accepted that the 16th century saw a tremendous rise in the population of England. The work of the Cambridge Group for the History of Population and Social Structure suggests an increase from a little over three million in 1550 to nearly five-and-a-half million in 1650.¹⁹ Although small by present-day standards, such growth was rapid in a pre-industrial economy and placed severe strains on the social, economic and political structure of the country. Despite the fact that the series only starts in 1575, FIG. 1 and FIG. 2 suggest that not only had substantial growth occurred in Herefordshire before 1575, but that this growth was slowing down. The calculation of baptisms per 100 burials is the nearest proxy one has to crude birth and death rates. The average for the period 1575-1610 was 140 baptisms per 100 burials. For the latter decades up to 1640 it was 113 baptisms per 100 burials.

Perhaps the strongest point that is made by FIG. 1 and FIG. 2 is that mortality appears to have been the main determinant of population movements. Ronald Lee has suggested that mortality in the 16th century was low relative to preceding and succeeding centuries and remained high into the first half of the 18th century.²⁰ This may be associated with increased exposure in a colonial age to new extra-European sources of infection to which the population of England was not immune. The experience of Herefordshire would appear to reflect this general rise in the secular movement of mortality.

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- For a fuller discussion of the findings and methodology used in this paper, readers are referred to the author's unpublished University of Wales BSc. Econ. Thesis (1978).
- The following parish registers were used: Hereford County Record Office: - Bromyard, Eaton Bishop, Ledbury (transcript), Leintwardine, Pembridge, Upton Bishop, Woolhope, Wigmore, Weston-under-Penyard, St. Martin's Hereford. Gloucester Record Office: - Dymock. Dymock was used as a control parish. Bishops Transcripts are available unlike in Herefordshire, to check the veracity of the original registers. The following remain in the care of the incumbent: - Bosbury, Cradley, Dilwyn, Madley, Much Marcle, St. Peter's and St. Nicholas's, Hereford.
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¹⁰ *Ibid.*

¹¹ J. F. Shrewsbury, *op. cit.* in note 6, 255.

¹² A. B. Appleby, *op. cit.* in note 1, 416.

¹³ W. G. Hoskins, *op. cit.* in note 8, 28.

¹⁴ *Victoria County History, Worcestershire*, IV (1924), 453.

¹⁵ J. F. Shrewsbury, *op. cit.* in note 6, 255.

¹⁶ W. G. Hoskins, 'Harvest Fluctuations and English Economic History 1620-1759', *Ag. Hist. Rev.*, XVI (1968), 15.

¹⁷ Peter Bowden, 'Agricultural Prices, Farm Prices and Rents' in J. Thirsk (ed.), *Agricultural History of England and Wales IV* (1967), 641.

¹⁸ A. B. Appleby, *op. cit.* in note 1; M. Drake, 'An Elementary Exercise in Parish Register Demography', *Econ. Hist. Rev.*, XIV No. 3 (1962), 427-45; C. D. Rogers, *The Lancashire Population Crisis of 1623* (1975).

¹⁹ R. M. Smith, *op. cit.* in note 7, 207.

²⁰ R. Lee, 'Population in Pre-Industrial England—An Econometric Analysis', *Quarterly Journal of Economics*, LXXXVII (1973), 586.

The Parliamentary Enclosure of Much Marcle

By CHARLES WATKINS

INTRODUCTION

THE Much Marcle Enclosure Act was passed in 1795 and the enclosure award is dated 1797. At that time the parish comprised four townships, Marcle, Wolton, Kynaston and Yatton. The enclosure award affected over 4,479 acres, this being the land in Marcle, Wolton and Kynaston. Yatton was omitted from the act and is now a separate parish. The parish can be divided into two main geological zones. The western half is dominated by the dip slope of Marcle, or Ridge Hill which forms the eastern rim of the Woolhope dome, the underlying rock being Silurian Limestone. Part of the western boundary of the parish runs along Ridge Hill, which at its highest reaches 700 ft. The eastern half of the parish undulates around the height of 200 ft., and the underlying rock is Devonian Old Red Sandstone, although this is overlain by thick layers of marl.

Parliamentary enclosure in Herefordshire has been discussed by several authors, and the general background to the enclosure will not be considered here.¹ This paper will deal in detail with a single enclosure and it is hoped that in consequence the factors involved in the enclosure process will be unravelled. Various documentary sources have been used in the compilation of this paper and these will now be outlined. Although there is no map showing the complete parish before the enclosure, George Smyth's map of the Hellens Estate, drawn in 1741, does show the pre-enclosure field pattern for parts of the parish. The accompanying survey describes how the estate was divided up into holdings and gives the names of tenants.²

A second series of maps is attached to the enclosure award of 1797.³ This covers the whole of the area of the townships of Marcle, Wolton and Kynaston, showing the newly-allotted fields and roads. The enclosure award itself, gives details of exchanges and allotments, while the minutes of the commissioners⁴ describe the meetings of the enclosure commissioners. The enclosure bill⁵ and act together with a survey of part of the parish made for the bishop of Hereford in 1790⁶ have also been consulted. Some of the most important and useful information was provided by the papers of Edward Wallwyn, who owned the Hellens Estate. The relevant documents fall into two main groups. First, there are his descriptions of the parish before the enclosure, and second, there are letters received by Wallwyn and, sometimes, his draft replies.⁷ Wallwyn was the promoter of the enclosure bill, and the letters between him and his solicitor, Griffith of Gloucester, give much information on the process of enclosure.

MUCH MARCLE BEFORE ENCLOSURE

The three townships affected by enclosure were dominated in the last decade of the 18th century by two landowners, Mr. Money, who owned the Homhouse Estate, and Edward Wallwyn, Esq., who owned Hellens Estate. For the majority of landholders in Much Marcle there is very little information. Apart from Money and Wallwyn, 40 landholders are mentioned in the bishop's survey of 1790, and of these four held over 100 acres, four held between 50 and 99 acres, while 25 of the holdings were under 10 acres. The two largest estates, however, can be described in some detail.

In 1741, Hellens Estate consisted of about 821 acres. The manor of Marcle D'Audley's had been in the hands of the Wallwyn family since the 14th century. In 1686 John Wallwyn, who was the last male heir of direct line, died, and left the Much Marcle Estate to his daughter, Margaret Noble, who was married to a London mercer. When their son William died in 1739, the estate was divided up between his eight sisters. This division of the estate is important as it resulted in a period of about fifty years when there was no unified control of the Hellens Estate.

One of the co-heiresses' grandsons, Edward Wallwyn Noble, came into his mother's share at some time in the 1780s. This share was increased by the death without issue of four of the co-heiresses. At this time, Edward Wallwyn Noble, who was a member of the Inner Temple, dropped the 'Noble' part of his name, and decided to buy out the remaining share of the other co-heiresses, and their descendants.⁸ It is the notes that Wallwyn made between 1789 and 1795 that have made it possible to describe the pre-enclosure pattern of Much Marcle.

The 1741 survey shows that the Hellens Estate was divided into ten farms, one of which was at Yatton, together with 18 other blocks of land made up of three woods, cottages, and blocks of pasture and arable land. The home farm comprised 235 acres, while the other farms varied from 12 to 95 acres. By 1789, Wallwyn had acquired by purchase and inheritance a total of 710 acres, and the number of farms had fallen to eight. The home farm remained virtually the same size but the other farms had changed considerably. Gatshipping Farm, for example, had doubled in size, and Sand's and Symond's Farms had been amalgamated.

The second principal estate in the parish was Money's Homhouse Estate. At the time of the bishop's survey of 1790 it comprised 1,150 acres. It is not known whether the bishop's survey covered the whole parish and so it is difficult to know whether this figure is reliable. However a list of the acreage belonging to Money made by Wallwyn in 1791,⁹ nearly agrees with the above figure coming

to a total of 1,167 acres. The Homhouse Estate was divided into 18 farms, varying in size from that of Widow Goude, 3 acres 2 roods 30 perches to the Homhouse Farm of over 334 acres. There were four farms of over 100 acres, two of between 50 and 99 acres, and nine of between 10 and 49 acres.

These acreages can be compared with the acreages given in the bishop's survey of 1790, one year earlier. This list names 19 tenants five of whom do not appear on the 1791 list. Also, five of the tenants on the 1791 list do not appear in the bishop's survey. There is not only this difference in the number of tenants, but also in the sizes of the farms of each of the tenants. For the 12 farms which are common to both lists, only one, the Homhouse Farm, stays the same acreage. Even here though, the farm was divided between two tenants, Bradstock and Brown, in 1790, whilst in 1791 it was all held by Brown. This one common acreage does suggest that both Wallwyn, and Harris, the bishop's surveyor, were using statute acres. The rest of Money's farms have mainly either gained or lost only a few acres, such as Moor Court tenanted by James Hooper, which had 107 acres in 1790 and 126 in 1791, though some properties have changed much more. The Noggin, in the 1790 survey had 2½ acres, and was tenanted by Widow Hooper. On the 1791 list, it was tenanted by Mr. Hooper, and extended to 46 acres.

Although these lists do give some idea of the dynamic nature of the size of the tenant farms at this time, it is unlikely that such changes could have taken place so quickly, and more realistic to suppose that either Wallwyn or Harris was describing an older situation than they declare. Of the two, it seems that the bishop's survey is the more likely to have used out-of-date figures, as its acreages do not fit in very well with the various lists and surveys of Hellens Estate. Wallwyn gives Gatshipping Farm, for example, as containing 112 acres 2 roods 37 perches in 1789 and 110 acres 1 rood 12 perches in 1794, while the bishop's survey of 1790 suggests that it was only 18 acres in extent. It therefore seems wisest to use the bishop's survey only with considerable caution.

From this information, we can deduce that the tenant farms fluctuated quite markedly in size through the years, not always becoming larger, although there were some amalgamations. The farms sizes would be tailored to fit the needs of the individual tenant farmer. It must not be thought, however, that these farms were the actual acreages worked by the tenant, for they sub-let some of their lands to subtenants. Also, a tenant might both own freehold land, and lease land from more than one landowner. In 1791¹⁰ for example, Samuel Clinton leased Wolton Brook Farm from Mr. Money, this comprised 154 acres. He also leased Sand's and Symond's Farms off Wallwyn, this being a further 67 acres. The bishop's survey says that Clinton also owned a property called Puckmoor's, of 6 acres. In 1794 Clinton wrote to Wallwyn, giving him a list

of his subtenants of Sand's and Symond's Farm, and the land they held thus: '3 Ackers in Ryemeadow, 1 Pleck as Mr. Tandy have, 2 Ackers in Netchfield as Mr. Maills have, 2 Ackers as John Petts have, 3 Ackers as Mr. John Smith have in Little Marcle Field'.¹¹

In a list drawn up in the early 1790s,¹² the Gatshipping Farm, together with parts of Sand's and Symond's Farm, and other lands were in the occupation of Andrew Mailes, Thomas Harbut, and their under tenants. The intermixed nature of farms, and the fact that the same tenant leased land from different landowners, could lead to disputes as to who owned parcels of land. Before 1790, for example, Francis Bowyers was tenant of both Huntleys Farm, owned by Elizabeth Clifford, and Tomkyns Farm, owned by Mr. Wallwyn. Bowyers quit the latter in 1790, but would not give up a certain 5 acres, which he claimed belonged to Huntleys Farm. The question was referred to two barristers, who eventually decided that the piece of land should be divided, with Edward Wallwyn having an option to buy the second half.¹³

Having discussed the question of land ownership and tenure, it is necessary to consider the field pattern.

The 1741 map indicates that there were two main types of field. First, there were the open arable and open meadow lands, and second there were the old enclosures. Twenty-nine separate names are given to portions of the open fields, but already by the early 1790s, the open field acreage was in a minority. Gray says that there were about 600 acres of open field at Much Marcle, and this agrees with one of Wallwyn's estimates. In another list, however, Wallwyn states that there were 800 acres and upwards of open field. In 1794, Wallwyn wrote that 'There is no waste in the parish of Marcle'.¹⁴ Therefore of the 4,500 acres affected by the act it seems that between one-fifth and one-sixth of the parish was unenclosed, all of this being arable or meadow.

The 1741 map is not of much use in showing the extent of the open fields, as it only includes those strips belonging to Hellens Estate. There is a tendency for the arable parts of individual farms to be concentrated mainly in one of the open fields. The Venning Farm for example, had its arable land concentrated in Netchfield, and the arable land belonging to The Gatshipping, was concentrated in Chronnelfield.

In 1794, Wallwyn made a list of the quantity of Hellens land in the common fields.¹⁵ Altogether there were 156 pieces, making up over 185 acres. A similar list for Money's land showed that he owned 350 acres of common field divided between 20 fields.¹⁶ Unfortunately, the 1741 map does not show the boundaries of the fields, but it does show that they varied greatly in size.

Mr. Money's Wolton Brook Farm, tenanted by Samuel Clinton, shows how intermixed parcels were, and how fragmented a farm could be. The total size of the farm, was 153 acres 3 roods 8 perches. It was made up of 85 different pieces, 41 of which were less than one acre in extent. The smallest piece was of only 18 perches; 41 of the pieces were in the open arable fields, 7 were in Ryemeadows (the open meadow), while the rest were enclosed pasture, orchard and meadow. The ownership of 3 of the pieces was in dispute.

Meadowland was very important in the village economy, and most farms had some land in the Ryemeadow, including Chapel Farm at Yatton, which is about 2 miles distant. Throughout the open fields, it can be seen that piecemeal enclosure was well under way. In Chronnelfield for example, an enclosure, with some buildings, called the Hill Close, had been made. In the Ryemeadow there are enclosures with such names as 'The Five Acres' and 'The Eight Acres'.

The largest area of old enclosures shown on the estate map, is that around the house of Hellens itself. Much of the home farm was made up of large old enclosed orchards and pasture. It is reasonable to suggest that the greatest part of the parish was enclosed like this by 1741.

Although there were at least 600 acres of open fields at Much Marcle in 1741, there is no evidence that there were any rights of grazing over the arable, after harvest, nor any communal organisation of the agriculture, as was typical of the 2 and 3 field systems of the midland zone. One of the factors involved here may well have been the plentiful supply of pasture in the parish, which meant that common rights of grazing on the arable were not necessary. In the 1790s, *A case Relative to the Manor of Marcle d'Audley's* was drawn up¹⁷ for Wallwyn presumably in order to find out what advantages he could gain from being Lord of the Manor. An important passage in this relates to the arrangements made in the Ryemeadow. It tells of 'many encroachments long suffered in the Ryemeadow', and goes on to describe how the properties in the meadow lay in small parcels, and were divided by landmarks. At Old Candlemas it was usual to fasten the gates of the meadow up, until the succeeding Midsummer, when the grass was cut, and 'of late year' the gates were immediately thrown open, and whoever thought fit put in sheep, cattle, geese and pigs. The case goes on to say that this custom was of but modern date, and that when the manorial court met in 1694 and 1707, none but the proprietors and tenants had any right to turn cattle to depasture there.

The document goes on to say that the stint of beasts which a man has a right to put in the meadow should be in proportion to the amount of land he owned, 'but that for many years, its been observed that people turn in as many beasts as they like, this being unfair to the holders of larger acreages'. All

these factors were listed as presentments which suggested that there was a stint. However, three old parishioners were consulted, and they said that every parishioner had always turned in as many beasts and cattle as they pleased. These rights of pasture in the Ryemeadow after the hay harvest seem to be the only existing common rights in the late 1790s.

Wallwyn was not very successful in trying to regain his rights as Lord of the Manor. One of his main problems was that there was no survey showing the extent of the manor. The last manorial court had met in 1738. By the 1790s there were no customary estates, or tenants who held by copy of court roll, the last three estates held so, had escheated about 1730, and had never been regranted afterwards. Many of the freeholders, were however still subject to chief and quit rents, and Wallwyn was still being paid these as late as 1810.¹⁸

The strength of the Lord of the Manor had declined greatly throughout the 18th century, this was probably at least partly due to the fact that there was no lord in residence for 50 years. The document sums the situation up in neat legal jargon: 'The reviving of the court, and the reinvesting of the land in the full enjoyment of his ancient rights and privilege, may be attended with some difficulty'.

In 1790, Wallwyn made some 'notes upon the landed property in Much Marcle'.¹⁹ These are worth quoting in full as they give Wallwyn's impression of the parish, soon after he acquired the estate.

'The estate of Hellens, having been deserted by the family for almost 50 years, it does not at this time by any means carry that might and influence in the parish that it ought to do so. The estates have been badly managed, some too cheap, and others not under proper regulations. The tenancy of both the Homhouse and the Hellens Estate have got too much the ascendancy.

An evil of no small magnitude is the suffering cottages to be erected without sufficient quantity of land being laid to them, to supply a family with necessary vegetables. They must have them somehow, and the farmers field is the place resorted to. The cottages themselves are no better than hogsties, cold, and unwholesome, and the cause of many illnesses and disorders, which, with a numerous family bring heavy charges upon the parish'.

He obviously considers that he and Mr. Money do not have enough power in the parish, and is worried by the number of landless labourers and the burden they will put on the parish.

The landownership and tenure of Much Marcle before enclosure can be summarised as follows. The two main landowners in the townships of Marcle, Wolton and Kynaston owned together about 1,810 acres, leaving about 2,670 acres for the smaller freeholders. The size of farming units varied from time to time, as the needs of the farmer changed. These farms were intermixed and fragmented, making it difficult for farmers to improve them substantially.

Between one fifth and one sixth of the parish was open arable and meadowland. On this open land, the evidence suggests that there were no common rights, except for the grazing of Ryemeadows after the hay harvest, and this was disputed. Each farmer could farm his strips of arable land, as he liked. There was no need for communal grazing of the open arable fields because there was plenty of pasture land in the parish, and there was therefore little need for continued communal control. The importance of the manor, and the manorial court, decreased rapidly throughout the eighteenth century. This decline may have been hastened by the lack of a resident Lord of the Manor of Marcle D'Audley's for 50 years.

THE PROMOTION OF ENCLOSURE

The correspondence between Edward Wallwyn, his solicitor, and other landowners shows a landowner's attitudes to the enclosure, and the reasons for his actions. It also helps to give a detailed picture of the promotion and process of enclosure, which would otherwise be difficult to reconstruct. On the other hand, there is very little information about the attitudes of the smaller landowners and the landless in the parish. Wallwyn put forward the idea of enclosure to Griffith his solicitor, who practised in Gloucester, in a letter dated the 14 April 1784. In his reply Griffith said that Mr. Money thought the idea was a good one, and that 'Mr. Stone will be here upon an inclosure commission next week', and he would tell him to ride over and look at Much Marcle.²⁰ Here we can see that, as a first stage, Wallwyn is getting his solicitor to sound the ground as to his neighbours' opinions of the enclosure. Mr. Stone, who was to become one of the commissioners for Much Marcle, was a professional commissioner.

Wallwyn's reply to this²¹ includes what he thinks desirable to include in the enclosure bill. This was:

- 1) to allot, exchange, and enclose the common field land
- 2) to exchange entire, or enclosed lands, and whole estates if necessary, and
- 3) to allot land in lieu of tithes.

Later on he adds a fourth requirement, that of stopping up all unnecessary roads. He considered that these were all usual practice, other than the third. With respect to this, he wondered whether Parliament would 'even with the consent of the clergy, agree to exonerate the whole of a man's estate from tithes'. Tithes, together with poor and highway rates, were the main outgoings for farmers and landowners in this period.

In this letter, Wallwyn goes on to suggest that the first step must be a survey of the parish, but that also a document should be drawn up, to get people to abide by the decisions of the commissioners. This he thought was necessary because one must have the consent of someone to exchange freehold property. Also, he thought that 'there may be some little freeholders who, if they find a piece of property of some consequence . . . will be likely not to attend to any reasonable offer'.

Griffiths in his reply²² says that 'to discharge from tithes the whole parish old inclosed, and common field, is very common'. He thought the document that Wallwyn proposed to draw up would cause alarm in the village. It was drawn up eventually, but later proved to be unnecessary as the commissioners were empowered to exchange freehold land in the bill.

In June 1794, Wallwyn wrote to Mr. Money, the largest landowner, personally proposing the enclosure act. 'It is only for us, and others interested, to join as common men to carry it into execution for the benefits of all. The present and future generations will approve and applaud the act'.²³ In his reply,²⁴ Money, when talking of the enclosure, said 'I do avowedly prefer myself the friend of order and justice'. The main landowners saw the enclosure as being beneficial to the whole village, and not only to themselves.

In August, the solicitor asked Wallwyn whether there were any rights of common on the open fields, which were exercised by those who did not own land in them.²⁵ Unfortunately, there is no surviving draft reply to this enquiry. As indicated above, however, there is no evidence for any such rights apart from the grazing of the Ryemeadow, and even this was questioned by the proprietors of land in the meadow.

At this stage, the enclosure of the whole parish of Much Marcle, including Yatton, was envisaged. The main landowner in Yatton was the Duke of Norfolk who supported the enclosure, and said he would support it in Parliament. As there was no open field land in Yatton, the Duke was mainly interested in the commutation of the tithes. These were of two sorts. The great tithes of Marcle and Wolton belonging to the Bishop of Hereford, who had leased them to Mr. Hereford for 21 years. Mr. Hereford leased these at rack-rent to Mr. Wallwyn. They were worth £242. The great tithes of Kynaston were worth £60, and were

owned by Mr. Fendall, who owned some land in the parish. The great tithes of Yatton, together with the small tithes of the whole parish, (£80 + £130) belonged to the vicar of Much Marcle, the Rev. James Roberts.²⁶

Unfortunately there was not sufficient open field land in each township that could be allotted in lieu of tithes, and in Yatton there was none. The Bishop of Hereford, Fendall and Wallwyn, preferred a corn rent, instead of land, but Roberts the vicar objected to this. Wallwyn hoped that the Duke, the Bishop and Money the patron, together could pressurise Roberts into accepting a corn rent. However, the Duke considered that the convivence of the vicar was essential. This problem became more important as time progressed.

One of the many criticisms of enclosure made by the Hammonds in *The Village Labourer*²⁷ is that the commissioners were not chosen democratically. This was certainly the case at Much Marcle. In September 1794, Griffith asked Wallwyn whether he would like to name a commissioner, and recommends three, one of whom, Francis Webb 'is without doubt one of the finest commissioners in the Kingdom'.²⁸ In a reply, Wallwyn says that 'the chiefs of us approve Stone for one commissioner'.²⁹ (This being the Mr. Stone, who had ridden over to look at the parish earlier in the year). Money and Wallwyn also approved of Webb, but they thought that they had better let the clergy choose the third. In the enclosure bill, the third commissioner named is John Harris of Wickton, Herefordshire, who later went on to become commissioner at five other Herefordshire enclosures. It seems likely that he was chosen by the clergy, as he was the surveyor who carried out the bishop's survey of Marcle in 1790. The commissioners were chosen by the main parties involved, the small landholders not having any say in the matter. This is consistent with the findings of M. W. Beresford³⁰ in his work on the commissioners of enclosure.

In September 1794, Griffith told Wallwyn that he would go to Much Marcle to visit the principal landholders, and get them to sign the petition for enclosure.³¹ Four-fifths of the landholders, by size of property, had to agree to this. Wallwyn replied³² that the parties most in favour of the enclosure were himself and Money, Mrs. Clifford and T. Powel, who were medium-sized landowners, Clinton, who was a small landowner and large tenant farmer, and Hardwick, who was a cottager. This points to the fact that enclosure was seen to be beneficial, by all types of landowner, but it must be noted that those mentioned were only a small proportion of the total.

By December 1794, it seemed that the bill would reach Parliament without delay. The vicar had told Griffith that he did not mind what mode of compensation was adopted for the tithes, drafts of the bill had been sent to the main parties involved, and Sir George Cornwall had agreed to present the petition in Parliament. It was presented on 3 February.

However, twelve days later, we find that the Bishop refuses to have his tithes commuted. Earlier, Wallwyn had been warned by his cousin that 'the lordships the Bishops are very tenacious about tithes'.³³ As a result, a new clause was added to the bill, saying that the great tithes of Marcle and Wolton were not to be affected.

The bill itself covers the same ground, and is in the same form as the majority of enclosure bills. The commissioners had to swear that they would perform their duties 'without favour, or affection, prejudice to any person or persons whomsoever'. The main clauses in the bill were that all fields and enclosures containing two or more properties within one fence were to be considered as land to be divided. Claims were to be delivered to the commissioners, who were to determine upon them, and no differences were to delay the enclosure. Allotments were to be 'a just compensation for, and equal to the several lands, grounds, rights and interests therein'. Roads were to be forty feet in breadth, and well fenced.

Tithes were to be replaced by corn rents, except for the small tithes of open arable land, which were to be replaced by land. The commissioners had power to make exchanges between owners. All leases at rack-rent, except for one between James Hereford and Edward Wallwyn of the great tithes of Marcle, were to be made void, by order of the commissioners after the payment of such satisfaction as they thought fit. During the course of the enclosure, the commissioners were to order and direct the course of husbandry to prevent the waste of destruction by farmers giving up land.

The cost of enclosure was to be paid by the owners and proprietors of the parish in such proportions as the commissioners deemed most just and reasonable. The bill recognised that some people may have needed to borrow money to pay their enclosure expenses, and so they were allowed to mortgage their properties. The vicar did not have to pay for the enclosure of the land he was allotted in lieu of tithes.

Altogether, it can be seen that the commissioners would wield considerable power in the parish throughout the course of enclosure. The bill was being prepared throughout late 1794, and the first few months of 1795. During this time, Wallwyn borrowed many enclosure bills from a cousin of his in London, so that he could check that the Marcle Bill was complete.

In March 1795, Griffith visited Much Marcle several times, to get people to sign a consent bill, showing they agreed to the enclosure. He came across several problems. Arthur Ellis, who was a tenant of Money, was worried that his lease for life would become void, and Griffith had to assure him that this was not the case. Mrs. Clifford, the owner of Huntleys Farm, which is situated

in the more fertile eastern half of the parish was 'much poisoned with the idea that lands in Ryemeadow would be taken from her, and land on Marcle Hill given in lieu'.³⁴ The soil on the hill was poorer than that in Ryemeadow, and of much less value. It was also much further from her farm. Mrs. Clifford also objected to the power of the commissioners to make exchanges without the consent of the proprietors. She decided not to sign the consent bill until she had talked with Money.

Roberts the vicar signed the consent bill, though he still did not agree to the inclusion of Yatton. Griffith had, at this stage, already obtained the consent of four-fifths in value, as rated to the land share, exclusive of Yatton, and thought it 'better to defer applying to those freeholders at Marcle who I did not see last week, until the bill is printed'. The consent of these small freeholders, was not necessary for the success of the bill.

In March, Wallwyn went to London, and the bill went into the House of Commons on 12 March. Printed copies were sent to the larger landowners. On the following day we hear of the first outright opposition to the bill, when Wallwyn writes to Griffith: 'I have lately heard that there is a person or two in Marcle . . . [who] . . . have attempted to throw a damp on our proceedings . . . It shall be right to suppress them as occasion shall offer'.³⁵ In his reply Griffith says that the opposition 'can have no great effect in point of property, as our consents already stand very high in that respect'.³⁶

When Griffith tried to obtain more signatures for the consent bill, he could not get anyone to sign. He said that ' . . . there are several . . . who have not the least objection to the measure, but decline signing because they will not subject themselves to the abuse of their neighbours, who are by no means sparing of it to Clinton'.³⁷ These are the only hints we get, in the evidence, as to the amount of the opposition to the enclosure. These opponents were probably the smaller landowners, and perhaps some of the landless who used the right to graze the Ryemeadows. The only opponent actually named, however, was Mr. Powell of the Welsh Court, Yatton, and he owned over 50 acres.

More worrying to Wallwyn at this time, was the fact that the vicar had decided not to consent to Yatton being included in the bill, even though the Duke of Norfolk agreed to the enclosure. The vicar retained Mr. E. Daniel M.P. to oppose the complete bill in Parliament.³⁸ Griffith told Wallwyn that the bill must not go into committee without this problem settled.³⁹ At the end of March, Wallwyn told Griffith, that if the tithes of Yatton were not to be commuted, then that township should be struck out of the bill.⁴⁰ The Duke agreed to this measure, and in April it was done.⁴¹

The bill then went into committee under the chairmanship of the bishop of Bangor, and a new clause was added which restricted the vicar from leasing all his glebe, and said that he had to keep ten to fifteen acres near to the vicarage.⁴² When Wallwyn heard of this he was furious, as it meant that he himself would have to lose some of his old enclosures. Writing to Money, he said 'This I protest against most strongly, and cannot suffer, because it will spoil my homestead, and affect my plans for a new house'.⁴³ He suggested that the vicar's allotment, in lieu of small tithe of the open field, should be made out of the closest common field to the vicarage. However, the vicar, according to Griffith, required 'the piece of ground in dispute in particular',⁴⁴ and anyway, the matter was now out of Wallwyn's hands. On 5 May 1795 the Much Marcle Enclosure Bill received the Royal Assent.

What can we conclude from this evidence? First, the speed, with which the bill was formulated, and the act passed, must be noted. It took only just over a year from the time Wallwyn first promoted the idea, to the Royal Assent of the act. From the evidence one can deduce that all the large landowners, most of the larger tenant farmers, and a few of the smaller landholders, were in favour of the enclosure. However, it must not be forgotten that the evidence is biased in this respect, and that we have no information directly relating to the smaller landowners, or the landless labourers. A few of the letters, as has been shown, suggest that there were a number of villagers who opposed the enclosure.

What stands out most from the correspondence is the strength of the church and the large landowners. They decided which commissioners to have whereas the small landowners had no say in this matter. It was only the differences between the church and the main landowners which at any time threatened the success of the bill. The actual content of the bill was decided upon by Wallwyn and Griffith, and was amended to suit the church. The smaller landowners had very little say in the enclosure, but this does not necessarily mean that the bill was to their disadvantage. The attitude of the large landlords was that the enclosure would be for the good of the whole parish.

ENCLOSURE AND ITS EFFECTS

Only ten days after the Royal Assent, the commissioners of enclosure held their first meeting at the Swan Inn, Tewkesbury, when they appointed their surveyor, Clark, to draw a map of the parish. Although the commissioners sometimes met at relatively long distances from Much Marcle; at Malvern, and Upton-on-Severn for example, they usually held the meetings where the attendance of the proprietors of land was necessary, at either Much Marcle, or Ledbury. Meetings were always well advertised, either by notice on the church door, or in the *Hereford Times*.

The minutes of the commissioners are quite brief, giving little detail, and generally, an impression of fairness is gained from them. Proprietors were given plenty of time to deliver their claims, and appeals were always scheduled after the routes of new roads were drawn up and allotments made known. There still seems to have been opposition, or at least non-cooperation from some of the landholders. Letters had to be written, for example, to 27 people, to remind them to send in their claims to the land they wanted.

One clause of the Act was that all leases held at rack-rent that is, the full economic rent, should cease and be void after the payment of such compensation as the commissioners ascertained to be reasonable. On 31 March 1796 the commissioners met to ascertain the compensation due to six tenants, but two of these tenants claimed that their leases were not at rack-rent, and so the commissioners postponed their consideration of these. The commissioners eventually decided that Samuel Clinton's lease was not at rack-rent, and so his lease for 21 years from Money continued. On 4 April, the commissioners decided that 29 of those people who held land at rack-rent should receive no compensation but that they should be paid only for such acts of husbandry as they had done in compliance with the orders of the commissioners. The people paid no compensation were those who held small amounts of land at rack-rent. In the enclosure award, four people are awarded land 'as lessee' of a landowner. Samuel Clinton was one of these, and Ellis was another. Ellis had been told by Griffith that his lease for life would not be made void. The other two were Thomas Hill, and Roberts, the vicar. It seems likely that land so awarded was held for life, or lives.

About the 24 June, the allotments were set out by Clark. Only one landholder, Thomas Phelps, who was awarded just over 21 acres, refused to accept his allotment, though 'several proprietors . . . complained of their allotments, but were, on the explanation of the commissioners, completely satisfied'. The award was eventually executed on 20 June 1797.

Parliamentary enclosure caused a dramatic change in the landscape of parishes which previously had a large amount of open field land. In Much Marcle however, there had already been much piecemeal enclosure, and only between one-fifth and one-sixth of the parish was physically enclosed by parliamentary means. Even in the open fields, the change in the landscape was probably not great, as several old enclosures had previously been made in them. Throughout the parish, though, important changes had been made. Some obsolete roads were blocked up, and new ones were made. Perhaps most important, was the grouping of an individual's allotments in one block, as far as possible.

There was only one common right, that of the grazing of the Ryemeadow. It is impossible to find out whether the commissioners gave any compensation for this. The loss of this right may have adversely affected the small landowners, and the landless. As land was only given in lieu of the small tithes of the old open field land there was a fairer allotment of land than in many enclosures, as only about 22 acres were awarded in this way.

The total area under the award was 4,479 acres 2 roods 39 perches, and all together, there were 95 allotments. These have been divided up into various size groupings in Table I. Here for the first time, we get accurate figures for the sizes of all the holdings.

TABLE I—Allotments Divided into Size Groupings

Size Grouping	No. of Allotments	Acreage			Percentage of Total Acreage
		a.	r.	p.	
0 — 2 acres 3r. 39p.	47	50	3	1	1.13
3 — 4 acres 3r. 39p.	11	47	1	23	1.06
5 — 9 acres 3r. 39p.	10	66	1	31	1.48
10 — 19 acres 3r. 39p.	5	95	0	3	2.12
20 — 49 acres 3r. 39p.	11	356	3	3	7.96
50 — 99 acres 3r. 39p.	2	118	3	25	2.65
100 — 199 acres 3r. 39p.	4	597	2	7	13.34
200+	5	3,146	3	26	70.25
	95	4,479	2	39	100.00

Forty-seven of the allotments were under three acres, making up altogether 1.13% of the total acreage, while five allotments were over 200 acres, these forming 70.25% of the total. Some changes in the acreage of individual landowners were considerable. Money's estate, for example, increased in size from 1,150 acres before enclosure, to 1,449 acres afterwards. This increase of about 300 acres was because Money was awarded a large acreage on Marcle Hill, where the land was of less value.

The general costs of enclosure work out at 15s. per acre on average, which together with the road rate of about 1s. 6d. per acre, makes a total of 16s. 6d. This is low compared to other enclosures, but does not include the cost of the fencing which individual proprietors had to construct around their allotments.

The cost for some landholders could be great. In January 1796, Bradstock, who was awarded 340 acres, wrote to Wallwyn saying 'I am aware that the burthen will be great, even if lopped of every excess'.⁴⁶ In the following June, three landholders had warrants of distress signed against them, because they had not paid their rates.

One clause in the act seems to have been unfair to the tenants. This said that all leases at rack-rent should be made void by the commissioners. Some of the landowners did not think this clause should have been included. The Duke of Norfolk thought that it was unjust, and Wallwyn considered that the leases should continue as beneficial as they were before enclosure.⁴⁶ Griffith, however, noted that there could be no middle way in the matter, and that 'the idea of assigning other lands of equal value to the tenants, for the remainder of their leases, will not do, as Mr. Money will most probably be inclined to very materially alter the arrangement of the farms'.⁴⁷

Compensation was paid for the loss of lease in some cases, but for 29 individuals it was not. It is doubtful whether the amount of money given was enough to provide full compensation. The one note of dissension given in the minutes of the commissioners, is that William Fawk had to be ordered by the commissioners to accept five guineas as compensation for the loss of a lease.

The reason for the inclusion of the clause was, as can be seen from the above quote, that Mr. Money wanted to increase the size of his farms and improve their layout. Unfortunately there is no information as to the size of Money's farms after enclosure, but it seems likely that he would have consolidated his rented plots, and let out large blocks of land as single farms. There are few examples in Much Marcle of the construction of new farmsteads as a result of enclosure, though on one large allotment, made out of part of Nutal Common Field, Nutal Farm, of late-18th/early 19th-century date, has been built. Here enclosure had a direct effect upon the settlement pattern.

Comparison of farm sizes on the Hellens Estate before and after enclosure, suggest that there was a general trend towards larger farms, but this did not mean that there was any decrease in the number of smaller plots rented out. In 1789, Hellens Estate was let out in 21 different pieces, seven of which were over 20 acres (excluding a farm at Yatton and woodland).⁴⁸ By 1832, the number of separate pieces let had risen to 24, but the number of pieces over 20 acres had fallen to five.⁴⁹ Over the same period, the mean size of the farms increased from 86 to 120 acres. This shows a substantial rise in the average size, although, these figures do not necessarily represent the actual areas farmed by the tenant. This increase in size was not a direct result of enclosure, but simply illustrates the trend during this period towards larger, more economic farms.

CONCLUSION

The immediate cause of the enclosure of Much Marcle was the fact that Edward Wallwyn wanted to improve the estate he had recently built up in the village. He was an outsider, who would have noticed more clearly than those landholders who lived in the village, the intermixed nature of the farms, and the very small size of the open field strips. The manorial system had broken down completely in the 18th century. The old system of land distribution was an anachronism. Wallwyn promoted the enclosure bill, the largest landowners, and many others, agreed with this, and the enclosure bill was passed successfully. Most tithes were commuted, and new roads were made improving the local communications. Most important was the fact that an individual's fields were now, as far as possible, in one contiguous block.

Obviously such change could not be brought about without there being unfairness to some people. As the enclosure took place in the late 18th century, it is not surprising to find that it was the tenant with the loss of his lease agreement, perhaps not covered by adequate or in some cases, any, compensation, and the poor, losing the right to graze animals in the Ryemeadow, who suffered. As a result there was some opposition to the enclosure in the parish. It is difficult to tell, however, to what extent this opposition was due to conservatism rather than to any loss of right or property. What is surprising, is the fairness of the procedure, considering the abuses that could have taken place. This agrees with the general bulk of the evidence for the rest of the country. The large landowners certainly did not see themselves gaining at the expense of anyone else, but simply out of the reorganisation of property in the parish.

Why was the parish not enclosed before 1797, by agreement between the landowners? Before parliamentary enclosure became the usual form of enclosure, parishes with a small number of landowners, would be more likely to be enclosed (by agreement), than parishes with a relatively large number of landowners. Much Marcle not only had a large number of landowners, but was also a large parish. These two factors made the necessary exchanges, and property reorganisation, very complicated. Such a process had to take into account widely varying land values, and the differing views of 95 landowners. As a result, it was necessary for an innovator such as Wallwyn to promote enclosure by parliamentary means before reorganisation could take place.

ACKNOWLEDGEMENTS

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Past Aurelians and Lost Butterflies

By B. E. MILES

*'Time like an ever-rolling stream bears all its sons away;
they fly forgotten, as a dream dies at the opening day'.*

Isaac Watts

INTRODUCTION

HEREFORDSHIRE butterfly records are meagre and intermittent, with much of the county neglected. In the last century there were few reporters and no official recorders even though there were doubtless many more netters, breeders and collectors than there are today. The precise location and density of finds were seldom given.

Records of course tell us more about the distribution of reporters than the distribution of butterflies. Communication must have been difficult.

Then, there is the credibility of reports; even experts are not immune from wishful thinking, and equally, hubris may explain the rejection of some genuine discoveries. Further, some of our best aurelians have understandably been more concerned with their researches than in popularising their observations.

Lepidopterists seem so often to graduate from butterflies to macro-moths to micro-moths as others may progress from Gilbert and Sullivan to Puccini to Bach. Indeed, Dr. Wood writes scornfully of the 'gaudy day-flying insects which appeal to the embryo lepidopterist', so there may well have been a relative neglect of butterflies by our best entomologists.

The *Transactions of the Woolhope Naturalists' Field Club (WCT)* are the main source of information about early records though invariably vague.

The first 'Herefordshire Lepidoptera' in 1866 (39 species)¹ was compiled by Alfred Purchas from the Ross district and the Rev. T. Hutchinson from the Leominster district. Then, in 1870 we have F. E. Harman's list from Whitfield,² followed by the 1887 'Herefordshire Lepidoptera' (which surprisingly includes the 1892 addenda) by Thomas Hutchinson from the Leominster district and Dr. J. H. Wood from the Tarrington district (44 species).³ Among these is a Marbled White from Malvern; J. B. Pilley's record of the same butterfly seen at Rotherwas is acknowledged in Hutchinson's preamble.

In this century there are some diverting natural history notes by A. B. Farn during the first world war, a few, mainly superficial reports from official recorders, and a single paragraph in the 1954 Centenary volume of the Woolhope Club by H. D. Hallett in his otherwise excellent entomological contribution.⁴

It is likely that J. B. Pilley, for many years assistant secretary, acted as unofficial butterfly recorder for the club, but the first official recorder was the Rev. Prebendary S. Cornish Watkins in 1917—a keen aurelian though with the usual complaint that 'entomology has so few followers'; his reports are mainly concerned with ornithology.

Sectional recorders have had a frustrating task, frequently without any reports and their records confined to moths, trivial or absent, though M. W. Pryce, a professional entomologist, has made useful contributions in the last decade.

Other interesting information has come from the following sources: -

Edward Newman's *Illustrated Natural History of British Butterflies and Moths* (1870).⁵

T. P. Newman's *Memoirs of the Life and Work of Edward Newman by his Son* (1876).⁶

Rev. E. Horton, 'The Entomology of the Malvern District' (before 1870).⁷

W. Edwards' and R. F. Towndrow's *Butterflies and Moths of Malvern* (1899)⁸ and their other contributions in the *Transactions of the Malvern Field Club*.

Dr. J. H. Wood's list in the *Victoria County History* (1908)⁹ (46 species)—if we add the obvious oversight of the Red Admiral (*V. atalanta*).

Rev. S. Cornish Watkins' Diaries, now in the Woolhope Club Library, and his annotations in Newman's book, also donated there.

A. Leeds' Diaries (1928-36) from the 'Ross area'. (From Dr. Harper).

J. S. Hopton's Paper from the 'Hereford area' (1946-51).¹⁰

John E. Knight's article on the Lepidoptera near Ross-on-Wye (1947-57).¹¹

David Parker's widespread butterfly records when undertaking a Dragon-fly survey (*WCT* 1977). (From Dr. Harper).

Dr. M. Harper's impeccable personal records and others sent to him, notably by M. Young (1967-75) and Dr. C. W. Walker from the Hereford area.

The *Monks Wood Composites* which classify reports from Herefordians and visitors by 10 km. squares, for the periods before 1940, 1940-1960, and 1961 to date, from the Biological Records Centre, Monks Wood, Huntingdon, unfortunately giving no indication of prevalence or the names of reporters, but a useful check on local records.

By the time of the *Victoria County History* (1908), Wood's total of 46 species rises to a respectable total of 48 if we add the White Admiral (*L. camilla*) reported to and accepted by Towndrow in 1861 at Cradley, with a further undated report of the same species by Edwards at Croftbanks (very probably our present Cotherwood Nature Reserve)⁸ and the controversial Large Blue (*M. arion*) 'caught' by Harman sometime before 1870.⁵

Since then there have been no additions apart from a confident but unconfirmed report of a Swallowtail (*P. machaon*) by Mrs. Bannerman at Broxash Court, near Lyonshall (? 1941)¹² possibly a migrant or introduction—and two accounts of the European Map Butterfly (*A. levana*) introduced at the Great Doward about 1912 with ten caught by Farn in 1914 (*WCT*) and a subsequent introduction of the same butterfly by Dr. Langdale-Smith at Tarrington which survived for only a year or so (*WCT* 1967).

PAST AURELIANS

EDWARD NEWMAN, F.L.S., F.Z.S. (1801-1876)

His parents, members of the Society of Friends, came to Leominster when he was 25 years old. Edward writes, 'I had a very, very early predilection for butterflies, I may say from my nurse's arms'. Whether he ever lived in Leominster is doubtful but he certainly spent long visits there. His natural history interests were wide. He started a Fernery there in 1826 which he later transplanted, with his brother, into a Fern garden in 1837, adding a few extra specimens from Wales. He travelled widely throughout the British Isles and spent a large part of his life in scientific study. An entertaining description is to be found in the *Entomological Magazine*¹³ of his visit to Leominster and Wales in 1832, with 'nearest friend and second self', Edward Doubleday, entomologist and Quaker and brother of Henry whose collection of Lepidoptera was perhaps the finest in the country. They travelled by night for fourteen hours in continuous drizzle on the roof of the Worcester Mail and then after breakfast proceeded 'where we sate silent, dripping, weary, mopish, sleepy and uncomfortable, until we reached Leominster'. The account of their subsequent ascent of Snowdon, etc, reveals their extraordinary and extensive knowledge of entomology but we are here more concerned with their finding on their return to Leominster of a rare butterfly on his father's farm, 'Olden Barn'.

He is perhaps best known for his wide literary and editorial pursuits. His authorship at the age of 70 of *The Illustrated Natural History of British Butterflies and Moths* has the special merit of recording in some detail the counties and places where the various species have been reported, though some of his 'Herefordshire' references are now from inside Shropshire.

ALFRED PURCHAS (-1901)

An enthusiastic aurelian with a fine collection consisting of eight handsome cases of butterflies and moths (not all local) which he exhibited in 1866 when he read his paper on 'The Lepidoptera of Herefordshire' to the Woolhope Club.¹⁴

In the same number of the *Transactions* his Lepidoptera from the Ross area were combined with those of the Hutchinson family from the Leominster area.¹ The only butterfly not mentioned by the latter was the Grayling (*H. semele*) which he said (p. 221) was to be found in the northern part of the county. His other contribution was a short paper on the Green Oak moth (*T. viridans*) in 1881 (*WCT*).

He was outshone by his botanist brother, the Reverend W. H. Purchas, whose 'Summary of the geographical distribution of plants in Herefordshire' occurs in the same 1866 *Transactions*, but he was certainly an excellent all round lepidopterist.

THE HUTCHINSON FAMILY

EMMA SARAH GILL (1820-1905) moved from Llyswen, Breconshire, to Kimbolton when she was 12 and remained there for the rest of her long life.

In 1847 she married the Rev. Thomas Hutchinson, Rector of Kimbolton, and a keen botanist. His aunt, Mary, had married the poet Wordsworth, whose visits to Brinsop Court where her brother lived have been narrated in our 1888 *Transactions*.

They lived at Grantsfield where she bore him three sons and four daughters. It might have been supposed that her interest in butterflies and moths had been inspired by Newman, a frequent visitor to Leominster, but, at that time, their social circles were probably different.

Evidently, it was her eldest son, Thomas, who in 1853 at the age of five started her interest with his capture of the large and handsome Swallowtail moth (*O. sambucaria*). Suffice it to say she became a nationally famous lepidopterist with a remarkable collection of 15,000 specimens, shown on more than one occasion to the Woolhope Club, and now in the British Museum. She accomplished much original work, notably on the rearing of moths, and in truth compiled the 1866 and 1887 lists in our *Transactions*. She was constantly consulted by leading entomologists of the day, including Newman. Wood's 'In Memoriam' notice¹⁵ does fuller justice than I can to this remarkable woman.

In the preamble to our 1866 list from the Hutchinson family, the proud father writes, 'Tom we hope will become a really great naturalist. The ease with which he finds larvae and his power of knowing insects on the wing by the slightest peculiarity in their mode of flying is very surprising. He is the great taker of our treasures, but a few also go to the other children and all are equally fond of the study'.

The Entomological Notebooks and Diaries of Mrs. Hutchinson from 1859-98 now in the Woolhope Club Library, faithfully record the finds of each of her children and the gradual development of a novice to become one of the most respected lepidopterists in Britain.

THOMAS HUTCHINSON (1848-1916). The eldest child of the Rev. Thomas and Emma Hutchinson of Grantsfield was as noted a precocious entomologist and became an enthusiastic Woolhopian. He lived mostly in Hereford city and, apart from his 1887 list with Wood and 'Herefordshire Lepidoptera' 1892,¹⁶ wrote on many other topics, especially ornithology.

JOHN MONKHOUSE HUTCHINSON (1857-1945) made a great reputation for himself with a remarkable butterfly collection in Natal.¹⁵ On return home he played some part in Woolhope Club field meetings and lived at Grantsfield with his sister. He was blind for several years before he died.

EMMA HUTCHINSON (-1939) was mistress of Grantsfield until her death. She maintained the family tradition, entertaining the Woolhope Club in 1911 with her brother, John. In 1919 Cornish Watkins notes her finding on *Delphinium* at Grantsfield the larvae of the Golden Plusia moth, then a newcomer to the county, and successfully breeding from them, and in 1927 describes her as 'our best, almost our only, local authority on matters entomological'.

I have not been able to trace the rest of this talented family. The parents and the three children mentioned are all buried in Kimbolton churchyard.

JOHN HENRY WOOD, M.B. (1841-1914)

Spent his medical life in Tarrington, his father and brother practising in Ledbury. He was a superb naturalist, perhaps best known for his collection of Diptera and his work on Micro-lepidoptera for which he was internationally respected. Both collections are now in the British Museum. His diary for 1890-1894 in the Woolhope Club Library reveals his remarkable all-round interest in natural history. It is our loss that, whereas he wrote 45 scientific papers in the *Entomological Magazine*, there are only five in our *Transactions*. In 1908 he

recorded our Lepidoptera in the *Victoria County History*. His 1332 species are astonishing for the extraordinary number of Microlepidoptera—mostly of his own finding—many new to the county and some to Britain, the identification often assisted by his microscope. His reputation was international but his researches were restricted to Herefordshire.

In the year of his death, though by then having for many years devoted himself to Diptera, he read a short paper in his usual felicitous prose on two micro-moths of the genus *Argyresthia*, new to the county.¹⁷

He was a friend of Dr. Chapman and his diary relates how these two bachelors in their fifties thought nothing of catching the train to Hay, walking up the Cusop Dingle to the head of the Olchon Valley and then, after a long search for beetles and moths, strictly within the county border, walking to Pandy to catch the late train to Hereford, whence, no doubt, he cycled back to Tarrington. He was an enthusiastic rider to hounds.

F. E. HARMAN, M.R.A.C. (Dates unknown)

Is the most elusive of our lepidopterists. He seems to have been resident in Herefordshire in the late 1860s and farm manager to the Rev. Archer Clive. In 1870-71 he was a member of the Woolhope Club.

That he was an experienced aurelian there can be no doubt after reading his introduction to the 1870 list of lepidoptera from Whitfield. He also made short contributions to Newman's *Entomologist* when at Whitfield in 1870 and 1871. He figures prominently too in Newman's book on British butterflies, with several records from Oakley Park and Hunter's Gate—now in Shropshire—where he seems to have worked before coming to Whitfield.

Of major interest is his finding of the Large Blue (*M. arion*) near Hereford.⁵

THOMAS ALGERNON CHAPMAN, M.D., F.R.S. (1842-1921)

The son of a well known entomologist, he came to Herefordshire in 1872 as the first Medical Superintendent of our County Asylum, where he remained for 25 years, and from his annual reports to the Committee of Visitors one can only be impressed by his enlightened reign. There were more than 400 patients, as Herefordshire had always had a higher proportion of lunatics to population than any other county.

Unlike Wood, he was an enthusiastic Woolhopian, once president and a member for 52 years, despite the fact that his interests were by no means parochial.

His articles in our *Transactions* are unsurpassed, then mainly about beetles but he was already making original contributions on Lepidoptera, notably about the egg and larva of the Orange-tip butterfly (*A. cardamines*) and the flight of the Ghost Swift moth (*H. humuli*).

After an early retirement he worked chiefly on the continent where he elucidated the life cycle of several butterflies especially among the *Lycaenidae*, including an aspect of the unique association of the Large Blue (*M. arion*) with a specific ant, demonstrating by microscopical analysis of the intestinal contents of a Cornish caterpillar that its 'mysterious winter food was the larvae of its ant hosts themselves'.

He discovered for the first time the larvae of several 'Blues'. Chapman's Blue (*P. theristes*) was named after him as the result of his differentiation from similar species by microscopic examination of their genitalia. He also discovered in the south of France a new butterfly (*C. avis*) like our Green Hairstreak (*C. rubi*) but 'abundantly distinct' and now known as Chapman's Green Hairstreak.¹⁸

He exemplifies what can be accomplished after retirement. Financially well endowed, certainly, and like Wood, a bachelor, though Mrs. Hutchinson and Dr. Bull, for instance, show us what can be achieved by the prolific.

Both he and Wood would be strong candidates to be Herefordshire's greatest naturalist.

W. EDWARDS (1828-1923) and R. F. TOWNDROW (1845-1937)

Mention must be made of these two splendid aurelians from Malvern, both of whom achieved remarkable old age. In 1899 they together wrote *The Butterflies and Moths of Malvern* with some additions in 1911. Their records of butterflies in the east of our county, several of the greatest interest, seem to have been unnoticed or ignored by members of the Woolhope Club.

I have been unable to ascertain whether Edwards ever lived to the west of the Malvern Hills; he certainly lived in Malvern from 1901 until his death, but so many of his observations come from Cradley, West Malvern, Cowleigh and Eastnor. He spent many nights in Cowleigh Woods with Towndrow, sugaring trees. He was also interested in ornithology and a taxidermist.

For many years he was secretary of the Malvern Field Club. From 1895-1912 he was curator of the Hasting's Museum in Worcester and for over 50 years curator of the Malvern College Museum. It was said that 'his wide knowledge of natural history . . . had been a great help and inspiration to many generations of Malvern boys'¹⁸ (though not noticeably to my father!).

Towndrow, a grocer from Malvern Link, wrote on a wide range of topics and was a first class botanist.

J. B. PILLEY (1835-1918)

A dedicated Woolhopian and assistant secretary from 1887-1911, was from an early age interested in the study of entomology and ornithology. His collection of birds' eggs was left to the Hereford Museum.

Thomas Hutchinson in 1887 notes that 'Mr. James Pilley has also assisted me with the names of a few rarities he has met with', and Wood in the *Victoria County History* acknowledges that 'Mr. Pilley has furnished many of the particulars of the Hereford captures', but his records were not always included in their lists though he was indisputably a keen and experienced aurelian.¹⁹

A. B. FARN (1841-1921)

This distinguished lepidopterist joined the Woolhope Club in 1907 and was shortly made president. He had retired to Hereford, 'chiefly with the hopes of turning up, in some of its old haunts, the now supposed extinct Mazarine Blue', but without success. He then moved to Ganarew by the Monmouth border near the Doward.

Besides his official duties as Examiner and Administrator of Vaccine he was one of the most learned students of British entomology and formed one of the finest collections in the country, especially of butterfly variations. He was also a keen ornithologist and ardent sportsman, who on one occasion killed 30 snipe with 30 shots, and later landed many a fine Wye salmon.²⁰

His 'Nature Notes', easily overlooked in the 1913-8 *Transactions*, are of great authority, interest, and charm.

In 1916 he records, 'this year has been a very bad year for butterflies—in fact it was the worst I ever experienced during the 70 odd years I have collected . . . I might have done more but for ill health'. He was then 75 and clearly an enthusiast from youth!

In 1918 he reported via our club recorder, Cornish Watkins, the first dates of appearance of the Dark Green Fritillary (*A. aglaja*), the High Brown Fritillary (*A. adippe*), the Marsh Fritillary (*E. aurinia*), the Marbled White (*M. galathea*), the Grayling (*H. semele*) and the Green Hairstreak (*C. rubi*).

THE REV. PREBENDARY S. CORNISH WATKINS, M.A. (1871-1935)

Was a gifted all-round naturalist, interested in birds, butterflies, bees and mammals, as is shown by his Natural History Diaries, his annotated volume of Newman's book on butterflies, and his Lepidoptera collection, presented to the Woolhope Club Library and Museum by his nephew, M. P. Watkins, who has himself made interesting butterfly reports from the Doward. His collection

contains many specimens from Devon and Cornwall but a list indicates some of the ones captured in Herefordshire. Dr. Wood acknowledged his good work among the 'macros' of Kentchurch. He was president of the Woolhope Club in 1913 and 1914 and our first sectional recorder in 1917 for Ornithology, Entomology and Mammology, but after 1920 solely for Ornithology.

His eldest brother said, 'Sid was one of the laziest fellows I ever knew'; but in natural history and his parish duties he was tireless.

He came to Kentchurch in 1885 where his father, a keen naturalist, took the living. From 1893-7 he was in Cornwall, returning to Herefordshire to become Curate at Kington for five years. After a year at Ballingham as Rector, he became Vicar of Staunton-on-Arrow, where he remained from 1903-31. He was appointed Prebendary in 1920, resigning in 1934.

LOST BUTTERFLIES

MAZARINE BLUE (*Cyaniris semiargus* '=' *Polyommatus acis* Schiff)

We have records from only two sites:

1832 Near Kimbolton (SO 548614): Edward Newman and Edward Doubleday obtained five specimens of the Mazarine Blue in a rich meadow on a hillside—the Horse Leasow meadow at Olden Barn (Howden) Farm now Olden Farm near Kimbolton. It belonged to Newman's father but was rented to a tenant farmer.¹³

Newman says, 'I have repeatedly found it since and my nephew has taken two, but many years ago'.⁵ Hutchinson in 1887³ records, 'Although we have often hunted, we have never met with it'.

1855 Near Croft Farm, West Malvern (SO 7546),⁸ on the Herefordshire-Worcestershire border, and very likely at our Cotherwood Nature Reserve, is our only other site, presumably the one referred to by Day (1911)²¹ when he said, 'the Mazarine Blue is almost if not quite extinct, Edwards took one of the last recorded specimens some time ago'.

There is doubt about the last truly British specimens—possibly the two caught in north Wales in 1906. Recent captures elsewhere are assumed to be migrants from the continent, where it is still not uncommon.

In the early years of this century Farm, as mentioned, failed to find it in its former localities.

No mention of Edwards' report is to be found in our *Transactions* or in the *Victoria County History*.

The reason for its disappearance is conjectural, a problem discussed at length by Allan.²² Chapman believed that Red Clover was its chief larval food plant and that the mowing machine, appearing for the first time in about 1850, completed its extinction.

Allan had great reverence for Chapman, 'So distinguished, so erudite, so perspicacious a lepidopterist . . .', but he was critical of the Red Clover argument and himself believed that the Mazarine Blue was one of several casualties caused by climatic changes. Between 1850 and 1900 there was a rise in mean winter temperature of 3°C associated with steady west and south west winds.

BLACK-VEINED WHITE (*Aporia crataegi* L.)

There have been several early records:

1855 Grantsfield: T. Hutchinson—one.³

1860 Grantsfield: Two taken and two or three more seen.³

Before

1870 Eton (Eaton) Wood, near Leominster: Newman⁵—I have seen it in cloudy weather settled almost by hundreds on the blossoms of the Great Moon Daisy (*C. leucanthemum*).

Before

1870 Cradley Woods: Horton⁷—scarce.

1876 Near Cradley: Edwards—'Brood of larvae feeding on Hawthorn . . . bred a fine series'.⁸

1877 Near Cradley: Edwards—'Two . . . none since'.⁸

1887 Since 1860 'not occurred at Grantsfield nor has it been taken as far as I am aware in any other part of the county': T. Hutchinson.³

It seems to have been a common butterfly, eschewing woods and occurring principally in open country among orchards and fields and rough uncultivated land where there was a profusion of wild flowers.

The disappearance of this butterfly resembles that of the Mazarine Blue to a remarkable degree, both as regards its last habitations in the county and thereafter its loss from the country as a whole, despite in both instances its widespread persistence on the continent.

Once more the possible causes of its disappearance are dealt with at length by Allan²³ and I quote him freely: 'It is a hardy species accommodating itself on the continent from the snows of Switzerland to the suns of the Mediterranean. Chapman found it not scarce in Norway.

Repeated attempts at reintroduction have all proved vain. It is plain that by the end of the last century *crataegi* found our humid winters beyond endurance as Tutt himself testified. In July 1895 Chapman sent him some eggs of the Black-veined White from Zurich and Tutt wintered the larvae in his garden in south London. "I am astonished", he wrote the following June, "at the great death rate, considering the mild winter. . . I computed that not more than five to ten per cent have survived".

Allan went fully into other possible causes of its demise, but the climatic hypothesis seemed the only tenable one.

Once again the Woolhope Club and Wood⁹ seem not to have been aware of the activities of the Malvern Field Club and the vigilant Edwards.

LARGE BLUE (*Maculinea arion* L. '=' *Lycaena arion*)

We have only a single reference:

Late
1860s Hereford (SO 533438): Newman records 'taken near the aqueduct at Hereford, but rare, F. E. Harman'.⁵ The original report has not been found; subsequent references probably stem from Newman.

The site one assumes is where the Gloucester-Hereford Canal once crossed the river Lugg about 500m. below Wergin's Bridge near Sutton St. Nicholas. Little now remains of this aqueduct but traces can be seen when the river is low.

Such a distinctive butterfly especially when 'taken' could not have been misdiagnosed by a capable aurelian which Harman undoubtedly was. Why then no mention in the 1887 Woolhope Club list or by Wood in the *Victoria County History*? As a member of the Woolhope Club he would surely have mentioned the discovery to the Hutchinsons unless he was trying to preserve the site from collectors, in which case Newman certainly let him down.

The butterfly now seems to be extinct in Britain. In the past it has been found in at least 14 counties but in this century was virtually restricted to Cornwall, Devon, Somerset and Gloucestershire.

The causes of its decline have been carefully considered by Spooner²⁴ and more recently by Thomas.²⁵ Many in the past have thought that the cupidity of collectors was the main factor. Certainly disgraceful over-collecting occurred. At a newly discovered Cornish locality, for instance, 'more than 2660 specimens were killed, single collectors in one or two cases taking from 500 to 600 each', and Baron Bouck, a private collector, was found to have amassed 770 specimens.

Nevertheless Spooner concluded that other explanations were more important, partly because disappearances from many localities occurred before collecting was the vogue and partly because of its persistence in areas where ruthless collecting was rife.

The Large Blue is partial to south-facing slopes with plenty of wild Thyme (*Thymus serpyllum*), its larval food plant, and Gorse. It also requires the ant, *Myrmica sabuleti*, as it spends the latter part of its larval and all its pupal life in their nests. With infinite wisdom the butterfly lays its eggs on Thyme in their close vicinity.

Spooner believed that farming practices, either by neglect or over-enthusiasm, were mainly to blame for its demise. In the first case there is loss of habitat from crowding out of the Thyme by heather, bracken, bramble, thorn or scrub, and in the second destruction of habitat through land reclamation by fertilizers, excessive burning and over-intensive grazing. But other influences seem to have been even more important. Thomas considers that under-grazing (assisted by the decline of the rabbit through myxomatosis) has allowed coarse grasses to flourish and so eliminate this particular ant.

SMALL BLUE (*Cupido minimus* '=' *Polyommatus alsus*)

We have at best four records:

- Before
1870 Herefordshire, as it is not in Newman's list of counties without reports.
- 1887) Burghill gravel pits (SO 482452): Wood says discovered by Chapman and
1908) in 1908 'still exists'.

Subsequent repeated visits to these extinct gravel pits in 1980 have failed to find it, or indeed its food plant, the Kidney Vetch (*Anthyllus vulneraria*).

- 1899 Near the Wyche: Edwards and Towndrow—'local, rare'. (Probably just in Worcestershire.)
- 1911 Colwall: Day—'The little blue does occur yet, as far as I know, in one spot, perhaps 50 yards long, at Colwall'.

According to Howarth,²⁶ 'it is widely distributed, from Devon to Caithness, but very local'. It is still to be found in two or three places in Worcestershire. The Kidney Vetch is now rare in our county, which may be the main reason for its disappearance, but we do not know when this occurred at Burghill.

SILVER STUDDED BLUE (*Plebejus argus* L. = *Lycaena aegon* D & S)

Our records are confusing:

- 1870 Ascent of Black Mountains and elsewhere: Newman, who writes, 'I have repeatedly taken it in Herefordshire when eager to net every Blue in the hope of seeing the Mazarine Blue and have thus obtained a knowledge of its presence'.

- 1875 'Titley': Percy Horne (untraced, not a Woolhopian)—'taken'.⁹

approx.

- 1887 Litley and elsewhere: Pilley—'taken'.³

'Hereford' in the combined Hutchinson and Wood list. Could this be near Litley Court or a typographical error?

- 1899 Doward and District: E. Osier—'caught' at a field club meeting, not indubitably in Herefordshire (WCT).

In the same year it was described as unknown by Edwards and Towndrow in the east of the county.

- 1908 Wood refers only to the 1875 record.

There are no subsequent reports.

At present it persists in heather-clad districts of Surrey and Hampshire, but there are sub-species with different larval food plants. Details for the Herefordshire variety have not been ascertained, nor has the reason for its disappearance.

BROWN HAIRSTREAK (*Thecla betulae* L.)

Seldom observed in Herefordshire:

- 1850 Llangrove Common: W. H. Purchas.⁹
approx.

It is surprising that his brother, Alfred, made no reference to this record in the Ross list of our 1866 *Transactions*.

- 1899 Eastnor, Cowleigh and Birchwood: Edwards and Towndrow—'rare'; but without dates or details.

There have been no subsequent reports.

Although the butterfly is easily recognisable, it is seldom seen on the wing and may be overlooked due to its secretive habits. Howarth remarks that the simplest method of confirming its presence is to beat the smaller bushes of Blackthorn for larvae in June, but to the discerning eye the white eggs, laid singly may be seen throughout the winter on Blackthorn twigs.

Since 1960 it has been recorded in Worcestershire (1980), Gloucestershire and Wales, so it may still be here in areas where Blackthorn flourishes, though few good, old Blackthorn thickets remain.

CAMBERWELL BEAUTY (*Nymphalis antiopa* L.)

We have only two records of this splendid migrant though doubtless hundreds have flown over the county undetected.

About

- 1845 Grantsfield: Rev. T. Hutchinson and Rev. Miller.²⁷ (1846 was a good migration year.)

About

- 1870 Grantsfield (probably): T. Hutchinson.²⁷

- 1911 Bodenham, Dewdales Hope Dingle: Wood²⁷—captured 'with ease'. One can only feel sympathy with this particular butterfly confronted by such a formidable adversary'.

The Camberwell Beauty is not thought to breed in this country but may occasionally hibernate as an adult and be seen in the spring. Our migrants are probably from Scandinavia which would explain its most frequent occurrence in the eastern counties, though it has been recorded in most of the British Isles. There were some fairly good migration years in the late 1940s, and 1979.

Reasons for its apparent decline this century are perhaps to be sought in Scandinavia though one would suppose its food plants, various Willows, Birch and to a lesser extent Elm, to be freely available. Climatic changes may be the main determinant.

PALE CLOUDED YELLOW (*Colias hyale* L.)

This migrant has only four county records:

- 1836 Ross: Hallett (source unknown).
 1868 Leominster district: W. M. Hutchinson (*WCT* 1870 and 1901).²⁸
 1900 Eastnor: Edwards—'captured'.²⁸
 1900 Nr. Ledbury: Edwards.²⁸ Probably reported erroneously by Wood as 1904/5^a.

As is the case with migrants, there are good and bad years. According to Howarth, good years were 1868 (312), 1892 (588), 1900 (2203), 1901 (409), 1945 (318), 1947 (870), 1948 (310) and 1949 (530). Reports in brackets doubtless give only the crudest indication of prevalence.

Newman notes that at the end of July and beginning of August 1868, 'This was the commonest butterfly to be seen at Marsh Bay, Margate, where the butterflies were flying by hundreds'.

Pilley read a paper to our Club on its abundance in England in 1900.²⁸

MARSH FRITILLARY (*Euphydryas aurinia* R. '=' *Melitaea artemis* WV)

This has never been a common butterfly in our county. There are the following records:

- 1866 Leominster district: Rev. T. Hutchinson.
 1870 Leominster: Mrs. Hutchinson—'not common'. Newman—'I have met with it in all the damp meadows near Leominster, but not abundantly . . . particularly in the Caswell fields' (presumably where there is now a housing estate to the south of Etnam Street).
 1887 Leominster district: T. Hutchinson.
 Tarrington district: Wood.
 1899 Cowleigh Park (just in Worcestershire) and other marshy places: Edwards and Towndrow—'getting scarce'.

- 1908 Leominster and Woolhope districts: Wood—'very local and often shifting habitat'.
 1917 Ganarew: Farn (*WCT*).
 1919 Staunton-on-Arrow: Cornish Watkins—collection in Hereford Museum.
 1949 Castle Frome quarry: Hopton—one (nine miles distant from a large colony in Haind Wood, Dymock, in Gloucestershire).
 1954 Canon Frome: Hallett.
 Hough (Haugh) Wood: Both probably via Langdale-Smith.

Late
 1950s Wigmore, near Chapel Farm: W. J. Norton, F.R.E.S.²⁹

- 1975 Ledbury, Frith Wood: P. Garnett—one male. Report unconfirmed but accepted by Harper.

The butterflies are to be found in damp meadows where their food plant, Devil's Bit Scabious (*S. pratensis*) is plentiful. Howarth warns, however, that it does not necessarily occur wherever its food plant is abundant, as the butterfly sometimes wanders. The caterpillars are gregarious and spin for themselves a web from which they feed but it does not prevent them from being destroyed in great numbers by Hymenopterous parasites, chiefly *Apanteles*. Land drainage and intensive farming are probably more important causes of its decline.

LARGE TORTOISESHELL (*Nymphalis polychloros* L.)

The status of this butterfly in Herefordshire is uncertain. We have the following records:

- 1858/9 Near Leominster: Mrs. Hutchinson.⁵
 1866 Leominster district: Rev. T. Hutchinson.
 Ross District: Purchas.
 1869/70 Whitfield: Harman.
 1887 Leominster: T. Hutchinson.
 Tarrington: Wood.
 1888 Kentchurch: Cornish Watkins (collection, Hereford Museum).
 1899 Mathon and Cradley, occasionally elsewhere: Edwards and Towndrow—'rather rare'.

- 1908 Wood—irregular in its appearance.
- 1969 Marden, 300m. below the Lugg Bridge: Alan Fairhurst, F.R.E.S.,³⁰ a visitor. Vouched for by J. Heath and recorded in the *Monks Wood Composites*. Not a woodland district, but many Elms, its favourite food plant, have doubtless since perished. It may have been a migrant.
- According to Howarth²⁶ it has periods of comparative abundance followed by years of great scarcity. It seems to have been numerous in many areas prior to 1900 and between the two world wars, also in Kent and elsewhere in the 1940s and early 1950s. It has been scarce again since then.
- Its decline, if temporary disappearance, can hardly be due only to loss of its larval food plant as eggs are laid on several varieties of trees. Parasites could be one explanation as wasps and flies are known to cause havoc among its pupae and larvae. Subtler reasons are no doubt more important.
- PURPLE EMPEROR (*Apatura iris* L.)
- Britain's most magnificent butterfly has had several sites in Herefordshire in the past:
- 1841 Brinsop copse: Humphreys and Westwood.³¹
- 1864 West Malvern, Parkwood: Edwards and Towndrow.⁹
- 1866 Brinsop copse: Purchas.¹⁴ 'This has long been known as a Herefordshire butterfly', (but not I think seen by Purchas and not mentioned in his 1866 Herefordshire list).
- 1865/6 Eastnor: Edwards—'took several specimens'.⁹
- 1887 Tarrington district: Wood—'capture'.
Dinedor: 'Taken'.
Aconbury: 'Seen'.
Backbury: 'Seen'.
Near Ross: 'Seen'. Pilley reports the last four.
- 1899 Doward: 'Seen' on each side of the river—A. E. Boycott (later M.D., F.R.S.)—field meeting of Woolhope Club.
- 1901 Eastnor: Edwards.

- 1908 Doward: 'Of regular occurrence'.
Eastnor: 'Perhaps'.
Middle of Cowarne: 'Rarely'.
Pontrilas: 'Rarity'. Wood.
- 1915/16 Ganarew: Farn—two near the Doward, the second by his home (*WCT*).
- Before
- 1940 SO 56 (which includes Kimbolton and Grantsfield): *Monks Wood Composites*. No details discovered, perhaps last century.
- 1976 Great Doward, near our Woodside nature reserve: M. P. Watkins—'unconfirmed'. A female was apparently seen on three occasions and the tree on which she was first observed was her larval food plant, the broad-leaved Sallow (*S. caprea*). Watkins had not seen the butterfly before, but the circumstantial evidence was persuasive. (From Dr. Harper.)
- Andrew Pinches, a research worker for the Nature Conservancy Council, also reported sightings of Purple Emperors in the Forest of Dean in 1980. The Rev. Reynolds, an experienced lepidopterist with an outstanding collection, who was a close neighbour of Watkins on the Doward, had not seen it there between 1964 and his death in 1977. Nor is it recorded closer than about 120km. away, in Oxfordshire and Hampshire, in the *Monks Wood Composites* (1961-79).
- It was formerly present in the Reddings Inclosure of the Monmouthshire part of the Forest of Dean only 2km. away across the Wye, but not since the last war. Dr. Neil Horton has informed me that since then this part of the Forest has been practically 'clear felled' and replanted mainly with conifers and that little Sallow remains.
- The virtual disappearance of this butterfly from many of its previous haunts particularly in the west of the country, can only partly be explained by the loss of Oak forest and Sallow. Interestingly its apparent reappearance on the Doward in the hot summer of 1976 was accompanied by the emergence of the White Admiral (*L. camilla*) in several places in the county, including the Doward, where it was not known to exist. The Purple Emperor may still be lingering unrecognised in very small numbers.
- DUKE OF BURGUNDY FRITILLARY (*Hamearis lucina* L.)
- There is surprisingly no mention of this butterfly in the 1866 list in our *Transactions* but there are a few subsequent records:
- Before
- 1870 Briarly Wood, 'near Leominster': Newman.

- 1887 Tarrington district: Wood.
Haugh Wood: Pilley—'taken'.
- 1908 Woolhope district: Wood—'common'.
- 1941 Haugh Wood: Langdale-Smith—'several' (*WCT*).
- 1954 Haugh Wood:
Stoke Edith: Hallett (almost certainly via Langdale-Smith, but when?).
- 1973 Snodhill, near the Black Mountains: Pryce—'one'. Unconfirmed but from our entomological recorder (*WCT*).
- 1980 Great Doward: Watkins—unconfirmed report. There has been no other record from this area though the larval food plants are plentiful. It was not seen by an excellent aurelian, the Rev. Reynolds, who lived there from 1964-77, or by experienced visitors since.

These records are remarkable for their intermittency. Its food plant is the Cowslip (*P. veris*) and sometimes the Primrose (*P. vulgaris*).

Apart from Lancashire and Yorkshire, its distribution is now mainly confined to central southern England. Its decrease is no doubt in part due to the gradual disappearance of its food plants. Although still quite common, the Cowslip has suffered from modern farming methods.

DISCUSSION

Review of our county records for the past 130 years has shown how rare were lepidopterists of national distinction. Of the dozen or so mentioned in the brief biographies, only six would assuredly qualify: Newman, Mrs. Hutchinson, Chapman, Wood, Edwards and Farn, and of these only two, Mrs. Hutchinson and Wood, were essentially Herefordians.

Distinction in entomology demands special gifts usually emerging at a very young age and frequently with familial association. It requires consuming dedication, a phenomenal memory and an exceptional linguistic talent, enabling the recall of hundreds of barely pronounceable words of Latin and Greek extraction both for insects and their food plants. It may be significant that the most distinguished of all, Chapman and Wood, were bachelors. Married entomologists need spouses of saintly disposition.

The twelve lost or nearly lost butterflies selected can be divided into two groups:

Eight not reported since the 1914-8 world war—

Pale clouded yellow
Black-veined White
Brown Hairstreak
Small Blue
Silver-studded Blue
Mazarine Blue
Large Blue
Camberwell Beauty

and four, lost recently, or at best on the point of extinction—

Duke of Burgundy Fritillary
Purple Emperor
Large Tortoiseshell
Marsh Fritillary

In the first group, all hope must be abandoned for three—the Black-veined White, the Mazarine Blue and the Large Blue—but there is slight hope of the others turning up as rarities.

The migrants, Pale clouded yellow and Camberwell Beauty, could have another 'good year'; in fact the latter was reported as near as Ludlow in 1979.

The Brown Hairstreak, Small Blue and Large Tortoiseshell still linger on in nearby counties and the Silver-studded Blue still exists in Gloucestershire and at isolated stations in Wales.

Modern farming, Water Board and Forestry practices seem only to have played the major rôle in the demise of the Duke of Burgundy Fritillary and the Marsh Fritillary. Climatic and other changes have accounted for the others.

Nor can these practices be held responsible for the imminent threat to the White Letter Hairstreak (*S. w-album*) through the decimation of its favourite larval food plant, the Wych Elm (*U. glabra*), and its alternative, the Common Elm (*U. procera*), by the current fungal epidemic spread by their bark beetle. Only one such butterfly was reported in 1980 and none in 1981.

Yet it would be folly to suppose that modern farming and forestry practices do not present a grave and immediate threat to our butterflies. That they have been mainly responsible for the loss of only two species, so far, is dangerously misleading. There has been a widespread overall decline in the number of butter-

flies not reflected by national or county records; many species, formerly common, can still be found in a few isolated pockets, but if, in these enclaves, they fail to survive an adverse season, from where can they be replenished? Inevitably, but gradually, they will vanish forever. Perversely, many naturalists are more excited by a rare species than a common one.

Unfavourable changes in farming methods include the system of ley farming (regular ploughing and resowing) which has resulted in the loss of innumerable wild flowers and insects, so well portrayed in William Condry's *Natural History of Wales*, an outstanding addition to the 'New Naturalist' series. Other practices, no doubt with economic justification but injurious to wild life, are the uprooting of hedges, drainage of wet lands, the use of herbicides on meadows and road verges and the intensive cultivation of marginal land which used to provide oases of suitable butterfly habitat; and alternatively the neglect of uneconomic land, often from diminished grazing abetted by the decline of the rabbit, so that important habitat is crowded out by bramble, gorse, bracken and scrub.

Most born since the second world war are unlikely to have seen old-fashioned hay meadows, full of beautiful flowers of every description and alive with all manner of butterflies and other insects, unless they have been fortunate enough to go to the continent where 'primitive' agriculture still awaits 'development'.

These changes in farming methods threaten the Dingy and Grizzled Skippers (*E. tages* and *P. malvae*), the Brown Argus (*A. agestis*) and Common Blue (*P. icarus*), both Pearl-bordered Fritillaries (*B. selene* and *B. euphrosyne*) and perhaps the Marbled White (*M. galathea*).

From the forestry point of view the situation is as serious; the supplanting of deciduous by coniferous trees and the mowing of grass verges along forest rides once lined with appropriate flowers and their attendant butterflies.

The Wood White (*L. sinapis*), the High Brown and Dark Green Fritillaries (*A. adippe* and *A. aglaja*) and the majestic Silver-washed Fritillary (*A. paphia*) which lays its eggs on trees, often oak, within easy caterpillar walking distance from its food plant, the Dog Violet (*V. riviniana*), all could be diminished perhaps to the point of extinction. Another, the White Admiral (*L. camilla*), a forest butterfly which depends upon Honeysuckle (*L. periclymenum*), has always been scarce in Herefordshire; to nature lovers its loss could be tragic.

'The graceful elegance displayed by this charming species when sailing on the wing is greater perhaps than can be found in any other we have in Britain.

There was an old aurelian of London so highly delighted at the inimitable flight of camilla, that long after he was unable to pursue her he used to go to the woods and sit down on a stile for the sole purpose of feasting his eyes with her fascinating evolutions'.³²

The outlook is gloomy but there are signs of hope. Increasing awareness of the need for urgent action to counter current trends. Widespread goodwill of landowners, several of whom are leaders in the cause of conservation and eager to preserve areas on their property where wild life may flourish. Sympathy with conservationist views by Water Authorities and the Forestry Commission when courteously approached and, not least, the upsurge of concern about our dwindling heritage and the growing enthusiasm for the activities of the County Nature Trust.

In Herefordshire we are particularly fortunate in the dedicated Trust members who are doing their utmost to establish and manage an increasing number of Reserves for the protection of endangered species and equally in the growing pressure from our members who strive to mitigate the menace to our wild life.

Only a few are obsessed by the extraordinary life history of butterflies, for intellectual or deeper reasons often incomprehensible to themselves, most enjoy butterflies for their colourful, diverse and enchanting ways.

ACKNOWLEDGEMENTS

I shall always be indebted to Dr. Michael Harper for awakening my interest in Lepidoptera. In the early stages of this paper he detected several errors which I have tried to rectify.

The staff of the Hereford City Reference Library have been consistently helpful.

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Editor's Note

This paper was received in June 1981, and records events up to that time.

A Medieval Vineyard in West Herefordshire?

By MIRIAM VAN LAUN

DURING the dry summer of 1979 a series of rectangular parch marks were revealed in a field adjacent to the medieval borough at Longtown in west Herefordshire.

They occur in field number 1339 (O.S. 25 in. map) which was formerly known as Cae Mawr (Big Field), (5.078 acres). They extend from above the 500 ft. contour line but their full extent is indeterminable, although over 200 rectangles were counted.

It was decided to excavate a typical example. This lay in the middle of a group of parch marks (O.D. 157.69 m.). It was found that the example chosen revealed bedrock at approximately 0.14 m. depth with a channel 0.11 m. wide cut to a depth of over $\frac{1}{2}$ m. The channels were extremely neatly cut with no evidence of pick marks. The bedrock was found to be cut into rectangles measuring 1 m. along the slope and 1.4 m. down the slope. It was noted that the channels had mainly east/west (down the slope) and north/south (along the slope) orientations. The closeness of these channels and the precision with which they are cut is puzzling. In the example chosen the channel running along the slope was found to be chamfered on the uphill side.

The purpose of these channels is by no means clear. Their proximity to a castle, borough and deserted medieval village leads to speculation that they were created at that time. It has been suggested that the rectangles were caused either by quarrying or to facilitate drainage. The former would seem possible as the rock occurs very close to the surface. The practice of cutting the rock into manageable sizes and leaving the rock to break up by weathering was well established by this time. However, the extent of the workings would appear to defeat this possibility as no rock other than the channels has been removed. One would expect that quarrying by this fashion would be to prepare a piece of ground and remove it before carrying on to the next area.

The latter possibility seems more likely. The rock lying close to the surface shows the effects of soil erosion here. The channels would have carried surface water away most effectively. The soil within the channels shows no difference from that at the surface. However there was no evidence of capping the channels in the example chosen and this would seem a necessity for effective drainage.

The above possibilities are here discounted and a more likely purpose may lie in the common practice in west Herefordshire of using heavy sandstone slabs laid in the upright position as field boundaries. These could be equally well used, when laid along the slope to form terraces, soil being accumulated behind the slab on the uphill side. At a later period these slabs could have been removed to allow general cultivation.

The removal of these might account for the chamfering. It is likely that removal would take place uphill to obtain a better purchase. The heavy slabs being manouvred out of their upright position could scar the rock.

However the evidence for terracing is far from conclusive. For instance this still does not explain the reason for the grooves down the slope.

The enormous amount of work involved points to an elaboration by our agricultural forebears which could only be justified by their desire to keep the cultivation of fields as close to home as possible.

Reports of Sectional Recorders Archaeology, 1981

By R. SHOESMITH

THE CITY OF HEREFORD ARCHAEOLOGY COMMITTEE

THE first volume of the report on Hereford city excavations, *Excavations on Castle Green*, has sold well and only a few copies are left with the publishers, the Council for British Archaeology. The second volume, *Excavations on and close to the defences*, should be ready by April 1982. The third volume which contains the finds and environmental evidence, will go to the printers during 1983.

Archaeological conditions have been included in several planning approvals granted by the City Council. These include the demolition of the derelict dispensary at Greyfriars Surgery; household extensions at 34 Park Street, close to the Rowe Ditch; land at the junction of Mill Street and St. Owen Street and Hereford Glass Works in West Street.

Several parts of the Ancient Monuments and Archaeological Areas Act of 1979 have now come into force. The remaining part, which provides for the designation of Areas of Archaeological Importance in which there will be a statutory right for archaeological examination prior to development or redevelopment will probably enter the statute book in 1982. The Department of the Environment has said that it will begin by designating only a few areas, which will be selected for their high academic importance to archaeology, high level of development and redevelopment activity with its consequent threat to buried remains, past experience of difficulties in creating adequate access to sites for archaeological investigation, and the existence of a potentially suitable body that could be appointed Investigating Authority under the Act. The Department has approached local councils of ten historic towns which they feel should become designated Archaeological Areas and Hereford is one of these. Of the ten, only three, of which Hereford is one, owe their foundations to the post-Roman period. The City of Hereford Archaeology Committee has been suggested as the Investigating Authority.

The committee has been mainly concerned with post-excavation work during 1981 but has organised watching briefs and small excavations on several city sites. At the County Hospital a hand-dug trial excavation to the north of the area excavated in 1978 (Shoemith, 1978, 281) exposed further skeletons associated with St. Guthlac's monastic burial site. The final design of the underground ducting in this area has not yet been agreed.

In July 1981 a small hole appeared on Castle Green between the Nelson Memorial and the river and directly above the line of the main sewer which crosses the Green. A small area, surrounding the subsidence, was excavated by hand and a metal surface, probably associated with the Castle, was found at 0.2 m. deep. The hole cut through this surface and was almost exactly circular. It was probably originally dug for a maypole or flagpole in either the late 19th or the early 20th century.

A small rectangular underground ice-house was found in the grounds of Wargrave House, St. Owen's Street, during demolition of an old boiler house and this will form part of the national survey of ice-houses which is in progress.

A report and photographic survey of the Blackfriars Preaching Cross was prepared for the City Council with a recommendation that repair works be carried out urgently.

After many years of delay final plans have now been agreed for the development of Sector A/B, the area between Bewell Street and the city wall. This is to become the site of a superstore for Tesco's and archaeological excavations are to continue over the winter months. It is hoped to find traces of the houses and shops which were situated on the north of Bewell Street and probably fronted onto the market area in the 11th and 12th centuries. The opportunity is also being taken to examine the tail of the pre-city wall gravel rampart and establish any industrial uses in this part of the city.

In the county area the committee has been mainly concerned with the problems of unused, redundant and derelict churches. Advice has been obtained for Letton Church, where the roof of the chancel was seriously damaged by a falling tree and other building works are urgently required. It is hoped that the parish will be able to raise sufficient money to carry out the repairs rather than the only other alternative which is that the church be made redundant.

During the summer the committee carried out both excavation and survey work at Urishay Chapel as a continuation of the 1979 programme (Shoesmith, 1979, 69-71). Work has only just finished and a full interim report is not yet available but it is now obvious that the plan illustrated (*ibid.*) is an oversimplification of the historical development of this building. It has now been demonstrated that the original church had an apsidal east end and probably continued further to the west than the present building. Further work is probable in 1982 when a full report will be presented.

A collection of 17th and 18th-century pottery from a stream bed above Chanstone Farm, Vowchurch, which was brought to the attention of the committee by the Ancient Monuments Warden, has been shown to include kiln debris. The precise site of the kiln has not yet been established.

There have been two coin hoards found in Herefordshire during the last twelve months both of which were examined by Martin Rhodes of Hereford City Museum and reported to the Coroner who held inquests.

The first hoard came from near Welsh Bicknor and was found as a result of ploughing. The area was archaeologically examined and coins and fragments of lead and copper were found over several square metres where they had apparently been scattered during ploughing. The lead fragments apparently represent a vessel which had been broken at an earlier date and probably originally contained the coins (FIG. 1). It is 10.3 cm. diameter and 9.5 cm. deep with a fitting lid 2.1 cm. deep. A total of 151 silver and three gold coins was found and a full list has been presented to the Woolhope Club Library. The coins were as follows:

Eward VI	Shilling	1 specimen
Mary	Angel	1 specimen
Elizabeth I	Shillings	20 specimens
	Sixpences	34 specimens
James I	Half-laurel	1 specimen
	Quarter-laurel	1 specimen
	Half-crown	2 specimens
	Shillings	11 specimens
	Sixpences	5 specimens
Charles I	Half-crowns	36 specimens
	Shillings	40 specimens
	Sixpences	2 specimens

The coins were probably deposited shortly after 1643 and probably relate to Civil War activities in the area.

The second hoard of coins was found a week later near Glewstone in the side of a drainage trench. There was no archaeological evidence whatsoever to indicate how the coins were originally deposited and there were no traces of any container.

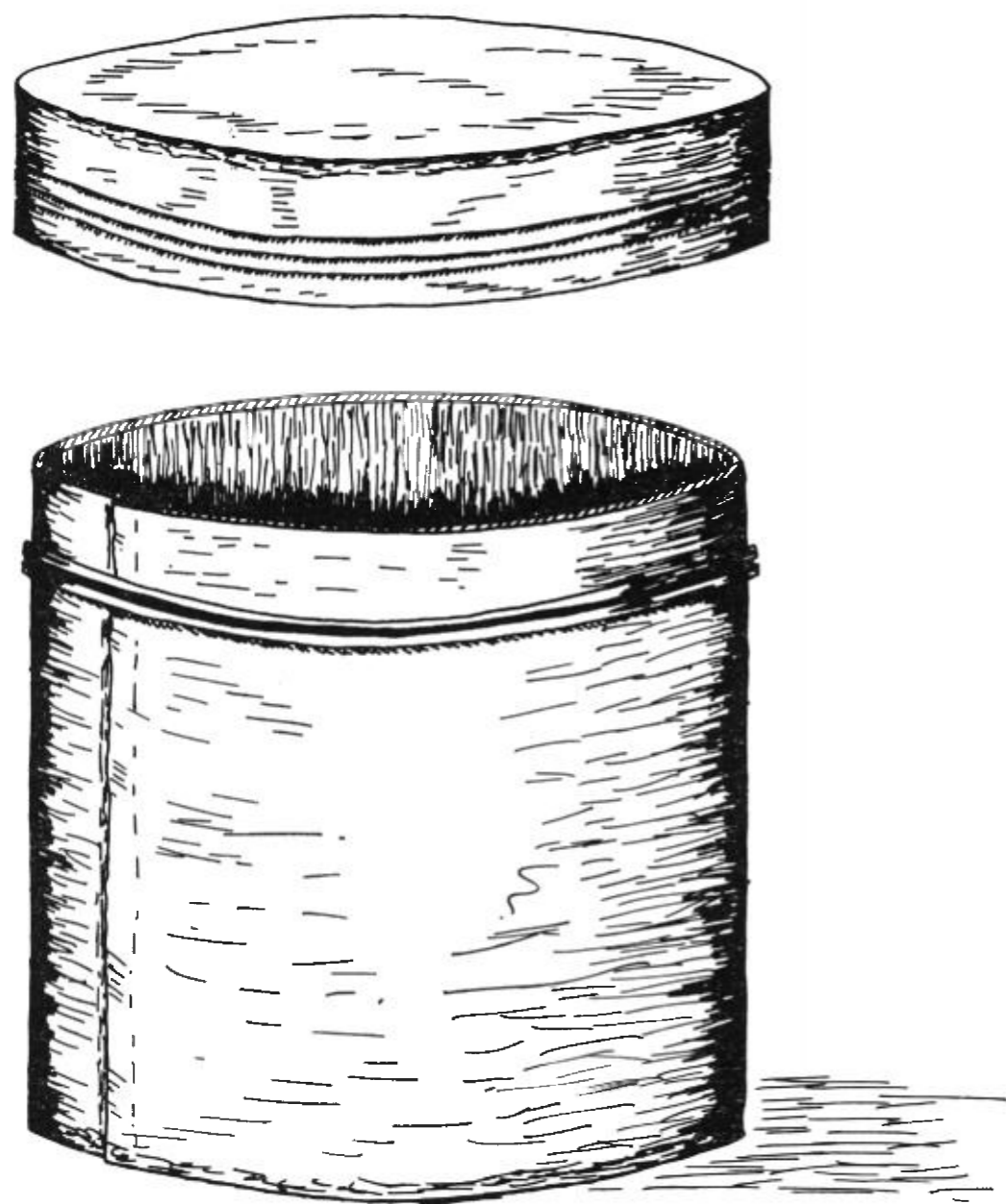


FIG. 1

Lead container for coins found with the Welsh Bicknor hoard. 10.3 cm. diameter, 9.5 cm. deep

A full list of the coins is deposited in the Woolhope Club Library.

Edward VI	Shilling	1 specimen
Phillip and Mary	Sixpences	1 specimen
Elizabeth I	Shillings	20 specimens
	Sixpences	9 specimens
James I	Shillings	21 specimens
	Sixpences	2 specimens
Charles I	Half-crowns	12 specimens
	Shillings	19 specimens
	Sixpences	2 specimens

The latest coins can be dated to between 1641-3 and it is probable that they were deposited around this date. There was considerable activity in the area in which the coins were found during the Civil War between the king and Parliament and in 1646 Goodrich Castle was submitted to a long siege by Colonel Birch.

Two Dobunic gold staters have been examined by Martin Rhodes of the City Museum during 1981. Both are similar (PLS. XV and XVI) with a fern-like object or decorated ear of corn on the obverse and a disjointed, triple-tailed horse to the right with a wheel below and other ornaments on the reverse. Both should be dated to between 30 B.C. and 10 A.D. The first one was found near Madley Airfield close to the line of the Roman road and the second came from Greyfriars Avenue in the City. Full details are deposited in the Woolhope Club Library.

Several similar coins have been found in Herefordshire and are recorded in the *Transactions* (Leach, 1968, 367).

THE COUNTY ARCHAEOLOGICAL SERVICE

The rebuilding and enlargement of the abbatoir at the rear of 22 High Street, Leintwardine encroached onto part of the scheduled ancient monument and an excavation was directed by John Sawle during the autumn of 1980. A total area of 500 sq. m. was fully excavated and an interim report is deposited in the Woolhope Club Library.

The excavation was designed to examine the postulated line of the *via principalis* and any structures along its northern side (Stanford, 1968 and 1972). In the event, no trace of laid gravel was seen anywhere within the 8m. width of the 1980 excavation and it would seem unlikely that the *via principalis* ran on this postulated line. The Roman features which did survive were concentrated at the southern end of the site and consisted of the remains of a timber building and several pits. The initial pottery analysis indicates a date range for all the material found from the mid-2nd to early 4th-century.

The northern part of the area excavated contained no Roman features apart from pits. This could be a result of erosion caused by ploughing and Roman buildings may have originally existed here.

As a result of this recent work it is clearly necessary to re-evaluate the status of the Roman settlement at Leintwardine. The apparent absence of features which should be present within the central area of a Roman fort inevitably raises the question of whether the settlement was a defended civilian site rather than a fort. (Abstracted from interim report by J. Sawle).

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Buildings, 1981

By J. W. TONKIN

AS explained previously these reports tend to get shorter as more of the county is covered by the Old Buildings Recording Group. This year it has been working in the Wigmore Hundred and a report of its findings will appear in due course. As in the past we are once again indebted to the University of Birmingham and the W.E.A. for encouraging this work.

A week-end school with the writer as tutor was based on Weobley and Pembridge.

The Club protested about the proposed demolition of Bewell House and a section of the City Walls and I am glad to be able to report these are now safe.

In the notes below information in the R.C.H.M. Inventory has not been repeated, though sometimes the two need to be read together.

EYE, MORETON AND ASHTON

BURNS CROFT COTTAGE, MORETON. SO 503641 (R.C.H.M. 10)

This house is of much more interest than the one-line R.C.H.M. entry would suggest. There are three cruck trusses in the centre of the present house and it appears to have been a two-bay open-hall with a two-storey bay to the north. The southern bay appears to be an addition of c. 1800. The cruck truss between it and the hall block finishes before reaching the apex, probably indicating that the original roof was hipped at that end.

The open-hall appears to have been divided into two storeys and four rooms early in the 16th century, the beams and remaining joists having a hollow chamfer combined with a roll moulding and long stops at the ends. The central truss has peg-holes for arch-bracing which has disappeared.

There is some evidence against the central cruck of the seating for a louver, but this has been replaced by two diagonally-set fireplaces.

There are hop-treading holes in the original block and in the added bay.

FELTON

ROSEMAUND. SO 564480

A building account of 1721 led my wife and me to this fine brick farmhouse which is an excellent example of early 18th century building. The kitchen and hall wing of the house are still very much 17th-century in their plan and

appearance with a lobby entrance opening into the hall on one side of the central stack and the kitchen on the other; whereas the parlour wing with its central stairway looks forward to the Georgian which began to develop from about this time. It is interesting to note that this quite substantial farmhouse cost £180 to build plus three oak trees which had been felled already and materials from an older house which had stood on the site.

KINGSTONE

DUNSWATER. SO 427352

From the front this house at first appears to be brick in Flemish bond, but some of the original timber-framing is still evident at the rear. It appears to be an early 17th-century house of parlour, entry with stairwell behind, hall and service cross-wing. The original entrance is now blocked and the entrance hall used as a dining-room. This and the parlour have beams with chamfers about 2 ins. wide with ogee stops, but the hall beams have wide chamfers, slightly hollow, with plain stops. There is a cellar under the parlour, while the service-wing has its own stairway. The modern entrance is from the side between the parlour and a brick addition. The upper floor has short, deep, crescent-shaped carpenters' assembly marks, while the ground floor has marks about 5 ins. long differenced with a circle.

ROSE COTTAGE. SO 423356 (R.C.H.M. 9)

The hall block next to the almshouses is now a workshop and appears to have been much restored, perhaps at about the time the land was granted for the almshouses in 1711. The cellar is beneath this block, which is unusual, and has a doorway, now blocked, at its western end.

WHITEHOUSE FARM. SO 426358 (R.C.H.M. 5)

The parlour has chamfered joists, the plan being of the typical 17th-century pattern with a big central stack in the main block serving both hall and parlour. The former is typical of a certain type of farmhouse, with the entry directly into it and the stairs and cellar steps in it as well. Such rooms must have been draughty and the family presumably used the parlour for much of the time.

PEMBRIDGE

BRIDGE STORES (OLD STEPS). SO 390581 (R.C.H.M. 24)

There is little to add to the R.C.H.M. account except that the carpenters' assembly marks are 8 and 9 ins. long. The house is reputed to have been the rectory, in which case it may well have been built soon after the Reformation for a married priest.

WEST STREET. SO 388581 (R.C.H.M. 34)

This cruck-hall and cross-wing house shows evidence of the wealth of the market town of Pembridge c. 1400. The front part of the first floor of the cross-wing appears to have been the great chamber, but the jettied projection seems to be an addition of the later 16th century.

In the main block the wind-braces go over the backs of three purlins before meeting just above the third, thus giving us passing wind-braces in the same manner as at Maholland, showing that this house is probably earlier than most of our remaining cruck buildings.

There is much cusping on the wind-braces and the central truss of the cross-wing and this with the loftiness of the crucks in the hall block indicates the wealth of the builder of this house.

During the year 55 planning applications were received. As usual most were for minor alterations and additions, but as reported earlier there was the protest about Bewell House in Hereford.

As in the past my thanks are due to a number of people especially Mr. and Mrs. E. J. Coleman, Mr. C. H. I. Homes and Mr. and Mrs. R. C. Perry.

Industrial Archaeology, 1981

By C. H. I. HOMES

THE WATER-MILLS OF HEREFORDSHIRE: AN INTERIM REPORT

FOR many years I have been interested in the water-mills of the old county of Herefordshire, especially the weirs and mill-races carrying the water to the mills.

Earlier this year I made a list of all known mill sites in the county which so far totalled 350. At many of these the mill or its remains still stands, the site of the weir can be located and the mill-race can be traced. Others are just a name on a map e.g. Mill Farm or Mill Plock. Experience has shown that most of these are doubtful sites. A close study of the area, at various times of the year will indicate the site of the mill, the weir and the mill-race. It now remains for me to visit all these sites and list what remains today.

Points which emerge from preliminary searches are:

In the northern half of the county water is always taken from the main stream by using a weir to divert it into a mill-race, surplus water flowing over the weir.

In the south of the county at many mills the whole stream is diverted into a wide mill-race dug along the contour to the mill, the old course of the stream being blocked off. At the mill surplus water passes over a weir back to the original stream.

The weirs in the county can range from a line of stones across the stream bed to massive masonry structures. In some cases natural waterfalls have been used.

The mill-races of the county conveying the water from the weir to the mill range in length from a few yards up to two miles. On average they are about half a mile long. Many of them show great skill in surveying and excavating.

Few Herefordshire mills have large mill-ponds. Generally they are nothing more than a widening of the mill-race at the mill.

The small volume of some of the mill-streams means that many mills could have only worked in the winter and then for only an hour or so at a time.

Depending on the head of water available the water-wheels used were over-shot, breast or undershot, in a wide range of sizes. The early water-wheels would all have been of wooden construction but surviving wheels are a mixture of cast iron and wood or all iron.

All the surviving mill buildings appear to be 18th century or later. One would expect this because owing to floods, poor foundations and vibration most mills require rebuilding at frequent intervals. Many of the surviving mills in the county were rebuilt during the 19th century.

Most of the machinery has now been removed, but what remains shows that the layout was the normal one of a bevel drive to a vertical wooden shaft, with a large spur wheel driving up to three sets of stones, all mounted on a wooden hurst frame. In the early mills the gear wheels were of wooden construction. In later mills they were cast iron with wooden teeth. Quite a few examples of both types still exist.

This layout meant that only three pairs of stones could be driven from one wheel. To get over this some mills installed an extra water-wheel to drive additional stones at the other end of the mill enabling it to increase its daily output and cope with a wider range of corn. By the mid-19th century lighter, faster-running water-wheels had been developed. These usually had a large gear wheel bolted to the rim, driving a long shafting with bevel drive to each pair of stones.

Many of the county's mills were rebuilt and refurnished with this modern machinery during the 19th century. By the late 19th century water turbines and roller mills had become available. Some mills installed these, thus increasing their daily output. Other mills which were short of water installed steam engines.

In addition to producing grist and flour, water-mills were used for many other purposes. At least one 18th-century water-powered cotton mill was built in the county. The walk mills were used to finish woollen cloth. Leather mills were used in the tanning and leather trade. Oil mills produced colza oil for lighting as well as linseed oil. There were also a number of paper-mills producing paper from rags and straw.

The county's only heavy industry, the iron industry, used water to blow its furnaces and forges and to work its trip-hammers.

Today no mills are grinding flour. A few water-wheels have been restored, but few of them are doing any useful work. Many of the buildings have been turned into private houses.

Mammals, 1981

By W. H. D. WINCE

FOR reasons given in earlier reports the otter (*Lutra lutra*) remains a rare animal in the county. One animal was seen some miles to the north of Hereford and the track and spraints were found in the north-west of the county.

At the time of the Norman Conquest roe deer (*Capreolus capreolus*) were probably abundant in Herefordshire, and Whitehead (*Deer of Great Britain and Ireland*, 1964) mentions three Hays for taking young roe deer at Lingen at that time. Roe probably became extinct in the 15th century in this county though persisted in Wales till the time of Queen Elizabeth I. For the past ten years there have been unconfirmed reports of roe in the region of the Wigmore Rolls. Recently Forestry Commission stalkers stated they had seen 23 animals there, these are very probably descendants from introduced deer, the nearest roe area being in Gloucestershire. The district is very suitable for roe with good cover and good browse. Roe do considerable damage to young forestry plantations and it is the policy of the Commission to exterminate these deer, whether this will be effective remains to be seen, deer counts are notoriously inaccurate and it is very likely that there are considerably more animals at Wigmore.

REPORT ON THE STATUS OF AMPHIBIA IN HEREFORDSHIRE

In view of the declining numbers of amphibia in Britain as a whole it was decided in 1978 to try to find out, through the members of the club, whether amphibia are in decline in Herefordshire as well. The survey was carried out on very simple lines, members being asked to report whether they had seen frogs, toads or any species of newt in their gardens in the last five years. Members of the Herefordshire and Radnorshire Nature Trust also sent in information.

The reports came from 38 different parishes in the county which is about one sixth of the total number. More reports were from the west than from the east. 75 people replied and of these, 41 reported frogs, 33 toads and 16 newts.

Since it is in the east of Britain that there has been a serious decline in amphibia in recent years the Herefordshire results were examined to find if a similar trend was present within the county. The number of records were too few to justify the plotting of distribution maps so the county was divided into two halves taking the grid line SO 50 as the boundary between east and west.

Grouping all amphibia together there were 64 positive records and 65 negative from west of the line but only 26 positive and 70 negative from east of the line. When analysed statistically the difference between east and west was highly significant and thus indicates a real shortage of amphibia in the east of the county as compared with the west.

The same exercise was carried out dividing the county north and south at the line SO 30. In this case there was no significant difference in the proportion of positive replies from the north or the south.

When the three sorts of amphibia were looked at individually it was found that the east-west difference in distribution applied to frogs and even more to toads but did not apply to newts.

In their letters members sent a good deal of extra information from which two points stood out clearly. Firstly several people who had lived in the same area for a long time said that frogs and toads used to be common in places where they now only see an occasional one. Secondly it was apparent that garden ponds, however small, were very valuable for the breeding of amphibia.

To sum up, although the survey was carried out in a very rough and ready manner it has produced evidence that there are fewer frogs and toads in the east of the county than in the west and that this difference is probably due to a decline in recent years. Herefordshire is thus following the same trend as the country as a whole.

(Dr. A. D. Brian)

Ornithology, 1981

By C. W. SHELDRAKE

Rarities visiting Herefordshire:

Great Grey Shrike—Grifton Ford Bridge.

Redpoll on Wapley Hill ringed in Belgium 20 October 1973.

Mediterranean Gull—Ballingham area.

Hoopoe at Lyde.

THE most significant event this year was the late snow lasting over 24 hours on 25/26 April. Migrants had arrived and many residents had already built nests. From records of the Nest Box Scheme of the Nature Trust, clutches of Blue and Great Tits were as low as two, three and four, whilst other females continued to lay throughout the snow and produced normal clutches. On the whole lower clutches were laid this year. Dormice have increased to use nest boxes and were recorded on three sites. The final figures for the scheme on 30 sites are as follows:

Total boxes	...	...	...	973
Boxes used	...	...	...	611
Percentage used	...	...	...	62.7%

	1981		1980	
	Nests	Fledged	Nests	Fledged
Pied Fly Catcher	225	789	187	897
Blue Tit	172	984	161	1247
Great Tit	170	732	154	1034
Marsh Tit	6	50	7	58
Coal Tit	7	44	8	66
Redstart	6	32	8	30
Nuthatch	14	76	7	38
Wren	5	10	7	32
Others	6	12	7	9*

From three sites nest box material has been examined and ten species of moss have been used of which up to four occurred in one nest. Badger hair was present in one box.

*This figure should also read 9 in VOL. XLIII, 233.

Natural History Section, 1981

By C. W. SHELDRAKE

THIS year two indoor meetings and seven outdoor meetings were held. The two indoor meetings included the Annual General Meeting when Dr. Wince gave a talk, with slides, on the Seychelles.

21 February. This was a joint meeting with the Wye Valley Beekeepers at Holme Lacy School of Agriculture. Dr. Brian gave a talk about the pollination of flowers.

11 April. A walk led by Mr. Robert Ellis took place on Westhope Hill with the Friends of Westhope to identify and record flowers etc.

9 May. A visit was made to the National Nature Reserve, North Meadow, Cricklade, Wiltshire. This site consists of 44 hectares of ancient meadow grassland. This contains 80% of the British population of *Fritillaria meleagris*. The management of this site has been unchanged for the past 800 years and the warden outlined that to date the meadow contains 210 varieties of plants; there are 28 species of grass, 7 species of sedges, 3 species of rush and hedgerow trees and bushes. Also recorded are five species of Damsel Fly and four species of Dragon Fly.

The party also visited the Gloucester Nature Trust Reserve at Barnsley Warren where Pasque Flowers and Orchids were seen.

6 June. All day visit to Bircher Common and Fishpond Valley.

8 July. A meeting led by Mr. Richard Green took place at the Herefordshire & Radnorshire Nature Trust Nupend Reserve at Fownhope on spiders. 16 species were found.

5 September. At a meeting at Dr. & Mrs. Wince's home at Lady Grove, the party was able to see Autumn Crocus in bloom growing naturally. Longworth mammal traps were set and during the period of two days four species of mammals were recorded, although only one species was in a trap at the time of the meeting.

17 October. A fungus foray took place at Queens Wood, Dinmore, led by Mr. & Mrs. P. Thomson.

31 October. A meeting led by Dr. R. Cameron took place at Herefordshire & Radnorshire Nature Trust, Monument Hill and Lea & Pagets Wood, on slugs and snails. Approximately 25 varieties were found.

A list of Slugs and Snails recorded 1 November 1980.

Species	Motlins Hole	Romers Wood
<i>Carychium minimum</i>	x
<i>Carychium tridentatum</i>	x
<i>Cochlicopa lubrica</i>	x
<i>Columella edentula</i>	x
<i>Vertigo substriata</i>	x
<i>Lauria cylindracea</i>	x
<i>Acanthinula aculeata</i>	x
<i>Punctum pygmaeum</i>	x
<i>Discus rotundatus</i>	x
<i>Arion ater</i>	x
<i>Arion subfuscus</i>	x
<i>Arion circumscriptus</i>	x
<i>Arion hortensis</i> agg.	x
<i>Vitrina pellucida</i>	x
<i>Vitrea crystallina</i>	x
<i>Vitrea contracta</i>	x
<i>Aegopinella pura</i>	x
<i>Aegopinella nitidula</i>	x
<i>Oxychilus cellarius</i>	x
<i>Oxychilus alliarius</i>	x
<i>Limax cinereoniger</i>	x
<i>Limax marginatus</i>	x
<i>Deroceras reticulatum</i>	x
<i>Euconulus fulvus</i>	x
<i>Cochlodina laminata</i>	x
<i>Trichia hispida</i>	x
<i>Cepaea nemoralis</i>	x
	25 species	25 species

The two woods are nearly identical in their lists. There are probably a few more species to be found in each. The lists are typical of deciduous woodland without actually lime-rich soils, but has a number of uncommon species which suggests both woods have been in existence for quite a long time in some form or other.

(Dr. R. A. D. Cameron)

Weather Statistics, 1981

Month	Sunshine hours	Days with sun	Max. Temp. °F Screen	Min. Temp. °F Screen	Nights Air Frost	Nights Ground Frost	Rain ins.	Max. in. one day	Days with rain over 0.005 ins.
January	41.3	21	55	30	1	4	0.67	0.18	10
February	73.3	20	56	22	6	14	1.40	0.73	6
March	74.9	23	60	33	—	—	3.29	0.82	22
April	94.5	22	68	32	—	3	1.84	0.80	11
May	114.1	28	74	35	—	—	2.37	0.33	15
June	146.3	30	78	43	—	—	1.26	1.00	7
July	171.7	31	80	48	—	—	0.45	0.16	6
August	203.7	29	82	45	—	—	1.29	0.69	4
September	142.3	27	76	43	—	—	5.23	0.68	15
October	111.5	27	66	31	1	3	2.51	0.76	21
November	64.3	25	62	31	1	3	1.34	0.30	13
December	32.3	14	55	15	16	20	5.11	0.98	17
Total	1270.2						26.76		

I.—That the Society be known as the "WOOLHOPE NATURALISTS' FIELD CLUB (HEREFORDSHIRE)" for the practical study in all branches of the natural history and archaeology of Herefordshire and the district immediately adjacent.

II.—That the Club shall consist of ordinary members (ladies and gentlemen) and such honorary members as may from time to time be admitted; from whom a president, four vice-presidents, honorary treasurer, honorary secretary, field secretary and editor shall be appointed at the annual winter meeting to be held in Hereford in the latter part of each year, and they shall hold office for one year beginning at the next annual spring meeting. The club may also accept for affiliation as approved such societies or groups as exist for the furtherance of similar purposes to those of the club. Each group shall be entitled to have one representative at all meetings of the club, to receive copies of the *Transactions* and generally be treated as one ordinary member.

The Club shall admit junior members between the ages of 14 and 18. Such junior members may become full members at the latter age, but those who are bona-fide full-time students may remain junior members until the age of 21. Nobody of the age of 18 or over may be elected a junior member.

III.—The management of the club shall be in the hands of a central committee consisting of the said nine officers *ex-officio* and twelve other members elected by ballot at the annual winter meeting. Each elected member of committee shall hold office for three years from the next annual spring meeting and four shall retire each year but be eligible for re-election. Every candidate for election to the central committee shall be individually proposed and seconded at the annual winter meeting and no proposal for election or re election *en bloc* shall be accepted. In the event of ties the president or the chairman of the meeting shall have a casting vote. Casual vacancies may be filled at any general meeting and any member then elected shall hold office until the date when the term of office of the member whom he or she succeeds would have expired. The central committee shall be empowered to appoint an assistant secretary; its duties shall include making all arrangements for the meetings of the year. Seven shall form a quorum.

IV.—That the members of the club shall hold not less than three field meetings during the year, in the most interesting localities for investigating the natural history and archaeology of the district. That the days and places of two at least of such regular meetings be selected at the annual winter meeting, and that ten clear days' notice of every meeting be communicated to members

by a circular from the assistant secretary; but that the central committee be empowered upon urgent occasions, to alter the days of such regular field meetings, and also to fix special or extra field meetings during the year. The president shall have the privilege of choosing the place of one field day during his year of office. The committee shall also arrange such indoor meetings and lectures during the winter as they find possible.

V.—That the annual subscription for members and affiliated societies be £3.00, payable on the 1 January in each year to the honorary treasurer or assistant secretary. The subscription for additional adult family members of the same household may at their option be reduced to £1.00 each, but those paying this reduced sum shall not be entitled to receive the publications of the club. The annual subscription for a junior member shall be £1.00. This shall not entitle such member to a copy of the *Transactions*, but he may receive these on payment of an additional sum to be decided by the committee for the time being. Each member may have the privilege of introducing a friend to any field meeting of the club, but the same visitor must not attend more than two such meetings in one year. Members availing themselves of this privilege will be required to pay a capitation fee of 50p. for a full day meeting, or 25p. for a half-day meeting, in respect of each visitor.

VI.—That the president be requested to favour the club with an address at the annual spring meeting on the proceedings of the year, together with such observations as he may deem conducive to the welfare of the club, and the promotion of its objects.

VII.—Every candidate for membership of the club shall be proposed and seconded by members. The central committee shall elect or reject the candidate and one black ball in five shall exclude.

VIII.—That members finding rare or interesting specimens or observing any remarkable phenomenon relating to any branch of natural history, or making or becoming acquainted with any archaeological discovery in the district, shall immediately forward a statement thereof to the honorary secretary or to the appropriate sectional editor.

IX. That the club undertake the formation and publication of correct lists of the various natural productions and antiquities of the county of Hereford with such observations as their respective authors may deem necessary.

X.—That any member whose annual subscription is twelve months in arrear shall not be entitled to any of the rights and privilege of membership, and that any member whose annual subscription is two years in arrear may be removed from the membership of the club by the central committee.

XI.—That the assistant secretary send out circulars ten days at least before the annual spring meeting to all members who have not paid their subscriptions and draw their particular attention to Rule X.

XII.—That no addition to or alteration of the rules of the club be made except at a general meeting, after notice has been given of the proposed addition or alteration at a previous meeting, and the general purport of such addition or alteration has been circulated to all members with the notice of the general meeting.

XIII.—That no grant of money from the funds of the club exceeding £5 may be voted for any purpose, unless notice of such proposed grant has been given at a previous meeting or has been approved by the central committee.

XIV.—That these rules be published in each volume of the *Transactions*.

LIST OF PRESIDENTS

1851	Club formed in the winter months	1905	BAYLIS, Mr. Phillip M.A., LL.M., F.Z.S.
1852	LINGWOOD, Mr. R. M.	1906	WARNER, Rev. R. Hyett, M.A.
1853	LEWIS, Rev. T. T.	1907	RANKIN, Sir James, Bart., M.A.
1854	SYMONDS, Rev. Wm. S., B.A., F.G.S.	1908	MOORE, Mr. H. Cecil and RANKIN, Sir James, Bart., M.A.
1855	CROUCH, Rev. J. F., B.D.	1909	WILLIAMSON, Rev. Preb. H. Trevor, M.A.
1856	WHEATLEY, Mr. Hewitt	1910	FARN, Mr. A. B.
1857	LINGEN, Mr. Charles	1911	PHILLIPS, Mr. E. Cambridge
1858	BEVAN, G. P., M.D.	1912	STOOKE-VAUGHAN, Rev. F. S., M.A.
1859	BEVAN, G. P., M.D.	1913	WATKINS, Rev. S. Cornish, M.A.
1860	BANKS, Mr. R. W.	1914	WATKINS, Rev. S. Cornish, M.A.
1861	LIGHTBODY, Mr. Robert	1915	WOOD, Mr. J. G., F.S.A.
1862	HOSKYNS, Mr. Chandos Wren	1916	JACK, Mr. G. H., M.INST.C.E., F.S.A., F.G.S.
1863	HOSKYNS, Mr. Chandos Wren	1917	GRINDLEY, Rev. H. E., M.A.
1864	CROUCH, Rev. J. F., B.D.	1918	BANNISTER, Rev. Canon A. T., M.A.
1865	STEELE, Mr. Elmes Y.	1919	WATKINS, Mr. Alfred, F.R.P.S.
1866	BULL, H. G., M.D.	1920	HUMFRYS, Mr. W. J.
1867	HOSKYNS, Mr. Chandos Wren	1921	JAMES, Mr. Francis R.
1868	McCULLOUGH, D. M., M.D.	1922	MARSHALL, Mr. George, F.S.A.
1869	RANKIN, Mr. James, M.A.	1923	BRADNEY, Colonel Sir Joseph A., C.B., M.A., D.LITT.
1870	COOPER-KEY, Rev. H., M.A.	1924	DURHAM, Herbert E., D.S.C., M.B., B.CH., F.R.C.S. (ENG.)
1871	CAM, Mr. Thomas	1925	MACKAY, Mr. J. C.
1872	STEELE, Mr. Elmes Y.	1926	SCOBIE, Colonel M. J. G., C.B.
1873	DAVIES, Rev. James, M.A.	1927	DAY, Rev. E. Hermitage, D.D., F.S.A.
1874	DAVIES, Rev. James, M.A.	1928	SYMONDS, Mr. Powell Biddulph
1875	ROBINSON, Rev. C. J., M.A.	1929	SMITH, The Right Rev. Martin Linton, D.D., D.S.O., Lord Bishop of Hereford
1876	CHAPMAN, T. A., M.D.	1930	GILBERT, Captain H. A.
1877	MORRIS, Mr. J. Griffiths	1931	SYMONDS-TYLOR, Lt.-Col. R. H.
1878	PHILLOTT, Rev. H. W., M.A.	1932	SWAYNE, Lt.-Col. O. R., D.S.O.
1879	ARMITAGE, Mr. Arthur	1933	HAMILTON, Brig. General W. G. C.B., C.S.I., D.S.O.
1880	KNIGHT, Mr. J. H.	1934	WALKER, C. W., M.C., M.D., CH.B.
1881	LEY, Rev. Augustin, M.A.	1935	ELLISON, Captain F. B.
1882	BLASHILL, Mr. Thomas, F.R.I.B.A.	1936	ROBINSON, Mr. R. S. Gavin
1883	PIPER, Mr. George H., F.G.S.	1937	MORGAN, Mr. F. C., F.L.A.
1884	BURROUGH, Rev. Charles, M.A.	1938	BETTINGTON, Mr. E. J., F.R.S.A.
1885	MARTIN, Mr. C. G.	1939	BENN, Mr. C. A., O.B.E., M.A., F.G.S.
1886	PIPER, Mr. George H., F.G.S.	1940	BENN, Mr. C. A., O.B.E., M.A., F.G.S.
1887	ELLIOTT, Rev. William, M.A.	1941	MARTIN, Rev. Preb. S. H., M.A.
1888	ELLIOTT, Rev. William, M.A.	1942	MARTIN, Rev. Preb. S. H., M.A.
1889	SOUTHALL, Mr. H., F.R.MET.SOC.	1943	WATERFIELD, The Very Rev. R., D.D., Dean of Hereford
1890	CROFT, Sir Herbert, Bart., M.A.	1944	TEMPLER, Mr. P. J. T.
1891	CORNEWALL, Rev. Sir George H., Bart., M.A.	1945	TEMPLER, Mr. P. J. T.
1892	BARNEBY, Mr. William Henry	1946	RICHARDSON, Mr. L., F.R.S.E., P.A.INST.W.E., F.G.S.
1893	LAMBERT, Rev. Preb. William H., M.A.	1947	WINNINGTON-INGRAM, The Venerable Archdeacon A. J., M.A.
1894	DAVIES, Mr. James	1948	GILBERT, Captain H. A.
1895	WATKINS, Rev. M. G., M.A.	1949	WALLIS, Captain O. B., M.A., LL.B.
1896	MOORE, Mr. H. Cecil		
1897	MOORE, Mr. H. Cecil		
1898	MARSHALL, Rev. H. B. D., M.A.		
1899	BEDDOE, Mr. H. C.		
1900	LEIGH, The Very Rev. The Hon. J. W., D.D., Dean of Hereford		
1901	BLASHILL, Mr. Thomas, F.R.I.B.A., F.Z.S.		
1902	CORNEWALL, Rev. Sir George H., Bart., M.A.		
1903	SOUTHALL, Mr. H., F.R.MET.SOC.		
1904	HUTCHINSON, Mr. T.		

LIST OF PRESIDENTS

1950	CLARKE, Rev. B. B., M.A., M.Sc.	1965	POWELL, Mr. H. J., F.R.I.B.A.
1951	MORGAN, Mr. F. C., F.S.A., F.L.A., M.A.	1966	KENDRICK, Mr. F. M.
1952	SALT, Major A. E. W., M.A.	1967	TONKIN, Major J. W., B.A.
1953	COHEN, Mr. I., M.I.MECH.E.	1968	CURRIE, Mrs. D. McD.
1954	JOHNSON, Colonel T. W. M.	1969	HILLABY, Mr. J. G., B.A.
1955	MOIR, Rev. Preb. A. L., M.A., F.R.HIST.S.	1970	O'DONNELL, Mrs. Jean E.
1956	WINNINGTON-INGRAM, The Venerable A. J., M.A.	1971	POWELL, Mr. H. J., F.R.I.B.A.
1957	KENDRICK, Mr. F. M.	1972	HOMES, Mr. C. H. I.
1958	LANGFORD, A. W., M.D., B.CHIR., M.R.C.S., L.R.C.P.	1973	TONKIN, Major J. W., B.A.
1959	LEEDS, Mrs. Winifred, F.R.P.S.L.	1974	TONKIN, Mrs. Muriel, J.P.
1960	MACLEAN, Rev. D. A. L., of Dochgarroch, M.A.	1975	PERRY, Mr. R. C.
1961	STANFORD, Mr. S. C., B.A., F.S.A.	1976	HAYNES, Rev. W. B., B.A.
1962	ZIMMERMAN, Mr. A. U.	1977	WINCE, Dr. W. H. D., M.B., B.S., M.L.Biol.
1963	COLEMAN, Mr. V. H.	1978	PAGE, Mr. R. A.
1964	NOBLE, Mr. F., B.A.	1979	GARNETT, Mr. A. T. G., L.D.S., R.C.S. (Eng.)
		1980	KENDRICK, Mr. F. M.
		1981	VOSS, Mrs. Marjorie M., B.A.

LIST OF MEMBERS AS AT 31st DECEMBER, 1981

HONORARY MEMBERS

LEEDS, Mrs. W., Lynstead, Ryefield Road, Ross-on-Wye HR9 5LS.
 MARTIN, Mrs. C. H., 90 Faithfull House, Suffolk Square, Cheltenham.
 WEBSTER, Dr. G., F.S.A., The Old House, Chesterton, Harbury CV33 9LF.
 WHITEHOUSE, B. J., Hereford Library, Broad Street, Hereford.

INSTITUTIONAL MEMBERS AND AFFILIATED SOCIETIES

ABERYSTWYTH: The Library, Hugh Owen Building, Penglais SY23 3DZ.
 BANGOR: Serials Acquisitions, University College of North Wales, C/O Science Library,
 Deiniol Road, Gwynedd LL57 2UN.
 BIRMINGHAM: Reference Library, Ratcliffe Place, 1.
 BIRMINGHAM: Dept. of Extramural Studies, University of Birmingham, P.O. Box 363,
 B15 2TT.
 BIRMINGHAM: The Library, University of Birmingham, Edgbaston, 15.
 BOSTON: British Library Lending Division, Boston Spa, Wetherby, Yorkshire LS23 7BQ.
 BRISTOL: Central Library, College Green BS1 5TL.
 BROMYARD: Bromyard and District Local History Society.
 CARDIFF: The Main Library, Arts Periodicals, University College Cardiff, P.O. Box 78
 CF1 1XQ.
 EXETER: Periodicals Dept., University Library, Prince of Wales Road EX4 4PT.
 GLOUCESTER: City Museum and Art Gallery, Brunswick Road.
 HEREFORD: Headmaster, The Bishop of Hereford Bluecoats School, Tupsley.
 HEREFORD: Botanical Society, Great Oak Corner, Eardisley, Hereford.
 HEREFORD: The Librarian, Dean & Chapter of Hereford Cathedral.
 HEREFORD: Ornithological Society.
 HEREFORD: Educational Development Centre, College Road.
 HEREFORD: Headmaster, Whitecross School, Bagallay Street.
 HEREFORD: Principal, Technical College, Folly Lane.
 HEREFORD-WORCESTER: County Libraries, Divisional Headquarters, College Road.
 KIDDERMINSTER: Hereford and Worcester County Museum, Hartlebury Castle DY11
 7XZ.
 KINGTON: Kington History Society.
 LEDBURY: Ledbury Naturalists' Field Club.
 LEICESTER: The University Library.
 LEOMINSTER: Leominster Historical Society.
 LIVERPOOL: The University Library, 3.
 LLANDRINDOD WELLS: County Library Headquarters, Cefnylls Road LD1 5LD.
 LONDON: British Museum (Natural History), Cromwell Road SW7 5BD.
 LONDON: Geological Society of London, Burlington House W1V 0JU.
 LONDON: Institute of Geological Studies, Exhibition Road SW7.
 LONDON: Public Record Office, Chancery Lane WC2A 1LR.
 LONDON: Society of Antiquaries, Burlington House W1V 0HS.
 LONDON: Society of Genealogists, 37 Harrington Gardens SW7.
 LONDON: The Library, University of London, Senate House, Malet Street, WC1E 7HU.

- MONTREAL: Sir George Williams University Library, Acquisitions Dept., 1445 De Maisonneuve Blvd., W.
- NEWPORT: Central Public Library, John Frost Square NPT 1PA.
- NEW YORK: Central Serial Record Dept., Cornell University Library, Ithaca 14850.
- PRINCETON: Serials Division, Princeton University Library, New Jersey 08540.
- SALT LAKE CITY: Genealogical Society, 50 East North Temple Street, Utah 84150.
- SHREWSBURY: Salop County Library Headquarters, Column House, 7 London Road SY8 6NW.
- SOUTHAMPTON: Archaeology Division Library, Ordnance Survey, Romsey Road SO9 4DH.
- SWANSEA: The Library, University College of South Wales, Singleton Park SA2 8PP.
- SYDNEY: Serials Dept., 10057, Fisher Library, University of Sydney.
- WALSALL: West Midlands College of Higher Education WS1 3BD.
- WIGMORE: Headmaster, The High School.
- WISCONSIN: Serials Dept., Memorial Library, University of Wisconsin, 728 State Street, Madison, Wisconsin 53706.
- WOLVERHAMPTON: Reference Dept., Central Library, Snow Hill WV1 3AX.
- WORCESTER: City Library, Foregate Street.
- WORCESTER: County Library, Love's Grove, Castle Street.

Members' names and addresses redacted.

SOCIETIES WITH WHICH TRANSACTIONS ARE EXCHANGED

Birmingham Archaeological Society
 Bristol and Gloucestershire Archaeological Society
 British Mycological Society
 Cambridgeshire and Huntingdonshire Society
 Cardiff Naturalists' Society
 Architectural and Archaeological Society of Durham and Northumberland
 Essex Archaeological Society
 Essex Field Club
 Hertfordshire Natural History Society
 Kent Archaeological Society
 Lichfield and South Staffordshire Archaeological and Historical Society
 North Staffordshire Field Club
 Offa's Dyke Association
 Oxoniensia
 Powysland Club
 Radnorshire Society
 Shropshire Archaeological Society
 Somerset Archaeological Society
 Surrey Archaeological Society
 Worcestershire Archaeological Society
 Worcestershire Naturalists' Field Club
 Yorkshire Archaeological Journal

THE FOLLOWING PUBLICATIONS ARE PURCHASED

Antiquaries Journal
 Archaeologia
 Cambrian Archaeological Society
 Harleian Society
 Journal of Industrial Archaeology
 Journal of the Society for Medieval Archaeology
 Mammal Society
 Midland History
 Prehistoric Society

