TRANSACTIONS

OF THE

WOOLHOPE NATURALISTS' FIELD CLUB

HEREFORDSHIRE

"HOPE ON"

"HOPE EVER"

ESTABLISHED 1851

VOLUME XLI 1973

PART I

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PART I

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LIST OF ILLUSTRATIONS

LIST OF OFFICERS

1972 - 1973

President - - - -	Mr. C. H. I. HOMES
President-elect - - -	Mr. J. W. TONKIN
Vice-Presidents - - -	Mr. H. J. POWELL Mrs. JEAN E. O'DONNELL Mr. J. G. HILLABY Mrs. DIANA C. D. CURRIE
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Archaeology - - -	Mr. R. SHOESMITH
Botany and Geology - -	Mr. F. M. KENDRICK
Buildings - - - -	Mr. J. W. TONKIN
Deserted Medieval Villages -	Miss R. E. HICKLING
Entomology - - -	Dr. H. G. LANGDALE-SMITH
Mammals and Ornithology -	Dr. W. H. D. WINCE

Address of Hon. Secretary:	*Address of Hon. Asst. Secretary:*	*Address of Hon. Editor:*
Mr. V. H. COLEMAN	Mrs. M. TONKIN	Mr. J. W. TONKIN
Stromness	Chy an Whyloryon	Chy an Whyloryon
Hereford Road	Wigmore	Wigmore
Weobley	Leominster	Leominster
Hereford	HR6 9UD	HR6 9UD

Articles intended for inclusion in future issues of the *Woolhope Club Transactions* should be submitted to the editor whose address is given under LIST OF OFFICERS. *Notes for Contributors to the 'Transactions'* will be sent on request.

Proceedings, 1973

SPRING MEETINGS

FIRST MEETING: 20 January: The President, Mr. C. H. I. Homes, in the chair.

Sectional Recorders for Archaeology, Botany, Buildings, Deserted Medieval Villages, Entomology, Mammals and Ornithology gave their reports for 1972 which are printed on pp. 391-408, Vol. XL.

SECOND MEETING: 17 February: The President, Mr. C. H. I. Homes, in the chair.

An illustrated lecture on "Medieval and Modern Tewkesbury" was given by Mr. J. G. Hillaby, B.A. and Mr. D. A. Whitehead, B.A. Mr. Hillaby spoke about the town's history up to *c.* 1500 pointing out its position at the confluence of the rivers Avon and Severn and its development under the shadow of the abbey. A market was established between 1066 and 1083 and by 1327 there were 114 burgages and at least 136 in the early 16th century indicating that the town had grown. Three medieval streets are Barton Street, Oldbury Street and Church Street. The abbey completed by 1123 has 14th-century additions and in 1542 was sold to the borough of Tewkesbury and it was heavily restored in 1849. The nave is the parish church. The lordship of Tewkesbury passed through the hands of powerful people such as Queen Maud, the de Clares, Despensers, Nevilles and George, Duke of Clarence, the last great lord who died in 1478 not long after the battle of Tewkesbury in 1471.

Mr. Whitehead took up the story of the town's history and said that Tewkesbury was a boom town in the middle of the 17th century. He referred to the density of building on the burgage plots forming alleyways which later became areas of squalor. Two industries, malting and leather-making, helped to make Tewkesbury prosperous. The Civil War brought its hey-day to an end but Non-conformity, Baptists, Quakers and Congregationalists, were evident in the later 17th century.

THIRD MEETING: 17 March: The President, Mr. C. H. I. Homes, in the chair.

Dr. G. R. Coope gave an illustrated lecture on "Some Aspects of the History of Insect Fauna of the British Isles". He explained that the results of his research in extracting beetle remains from fossils of different periods found in gravel pits and archaeological sites showed that during the last six thousand years there had been no revolutionary changes in beetles. He explained how climatic changes over the ages had caused great movements as to where beetles were to be found. Dr. Coope said that by human activities and land usage our rich natural history had been either destroyed or changed. One very interesting point was that in Moccas Park because of its unchanged natural woodland two very early species of beetle remained.

SPRING ANNUAL MEETING: 7 April: The President, Mr. C. H. I. Homes, in the chair.

The President said a letter proposing a change in the constitution would be circulated to all members.

Dr. H. G. Langdale-Smith after many years service to the club had resigned as Recorder of Entomology and Mrs. M. W. Pryce had agreed to take his place.

The assistant-secretary reported that the club now had 715 members.

The President briefly reviewed the year's activities and paid tribute to 21 years' service to the club by Mr. V. H. Coleman who was now retiring as secretary.

The President gave his address "Medieval Vineyards in Herefordshire" which is printed on pp. 9-13.

Mr. J. W. Tonkin was installed as President for 1973-74. He thanked Mr. Homes for his work for the club during the year and said he was pleased to be the club's President for a second time.

FIELD MEETINGS

FIRST MEETING: 12 May: TEWKESBURY

This meeting was a follow-up to the talk given the previous February by Mr. Hillaby and Mr. Whitehead and was led by them. The first visit was to St. Giles parish church at Little Malvern which has in it the remains of the monastic church of the Benedictine priory founded there in the 12th century as well as Perpendicular work of 1480-82. Standing to the west of the priory cloisters members visited Little Malvern Court where Mr. Tonkin explained that the guesten hall was the only surviving medieval building forming part of the house. It has a fine medieval roof and spere-truss at the screens end. It has been the home of the Berrington family since the 18th century.

At Tewkesbury members visited the Benedictine abbey which was largely Norman with 14th-century windows and 14th-century chapels around the east end with the choir rising above. From the top of the tower the town plan and the development on the burgage plots could be seen. Members also viewed the stained glass of *c.* 1340 to be seen in the clerestorey windows. Visits were also made to a 15th-century cottage and a weaver's house which had been restored, and to the 17th-century Baptist church.

At this meeting members agreed that the editor and field secretary should become ex-officio members of the committee and that Rules II and III should be amended accordingly.

SECOND MEETING: 2 June: BLACK MOUNTAINS AREA

At St. Margarets church Mr. Tonkin pointed out the 12th-century chancel arch, the 14th-century chancel, the 16th-century nave roof, the 13th-century south doorway and in particular the screen of *c.* 1520 which is comparable with those at Patrishow, Llananno and Llanfilo.

At a small quarry Mr. Kendrick pointed out the Dittonian sandstone beds from which roofing tiles and flagstones were quarried.

The next stop was at the 13th-century church of Llanveynoe which had been restored in the 19th century. Here Mr. Tonkin spoke about the four dark ages and medieval crosses and the nearby Celtic cemetery. He also referred to the methods of farming in the Olchon valley, the enclosure and to the houses which can be seen from the churchyard.

Mr. Kendrick speaking about the geology and botany of the area said that the Black and Red Darens with a cwm between them were formed during the last ice age: the glaciers built up in the Olchon valley and shaved away the sides forming the Cat's Back. Pencil cranesbill grew on Blaen Olchon and mossy saxifrage on Black Daren.

At Longtown Mr. Tonkin spoke about the houses in the village, the 12th-century castle and the borough lay-out, and Air-Cdre. Moore about the Roman remains. The borough was founded by the de Lacy family which had set up one at Weobley.

The last visit was to the mid-12th-century church at Rowlestone where Mr. Tonkin pointed out the early 16th-century barrel roof, the tower of *c.* 1600, the tympanum which is similar to those at Shobdon Arches, and St. Giles Hospital, Hereford, and the late 15th-century iron brackets which are said to be unique; the cocks on the north and possibly hens not swans, as usually referred to, on the south. Are these due to the Welsh custom of males and females sitting on opposite sides in church?

THIRD MEETING: 30 June: BRISTOL

After coffee at Tintern members journeyed via the Severn bridge and Avonmouth to the Cumberland basin in Bristol to visit and see the restoration project of the S.S. *Great Britain*. The *Great Britain*, built by Brunel, was launched from here on 19 July 1843 and after her life as a passenger and cargo ship having been sunk in Sparrow Cove in 1937, she was in 1970 towed 7,500 miles back to her present position for restoration.

The next visit was to Dyrham Park which was built, 1692-1704, by William Blathwayt. It incorporates a small part of an earlier Tudor house and it is said that it was designed by Talman. At Tetbury members visited the church which was originally Norman but rebuilt in 1777 by Francis Hiorn of Warwick. It is unusual in style having a seven-bay nave with an ambulatory all the way around and gallery. The pillars are of wood with a hardwood core. It is said that some have an iron core similar to those of Telford's church at Madeley in Shropshire.

FOURTH MEETING: 26 July: STROUD AREA

The main object of this field meeting was to visit Woodchester to view the Roman pavement which is only uncovered every ten years or so. The room containing the pavement is one of 64 rooms forming part of the Roman villa. The pavement on the Orpheus theme is the largest and most elaborately decorated mosaic north of the Alps. It is thought to be of the second quarter of the 4th century.

At Minchinhampton Church Mr. Tonkin pointed out the 14th-century tower and north transept, the early 14th-century south transept with a stone roof, not real vaulting but like some seen in timber and buttressed on the outside, and the early tombs to the de la Mere and Hampton families. The nave and chancel were rebuilt in 1842 and the rood-screen was designed by F. C. Eden. The market hall in the town was built in 1698.

A visit was made to Coates to see the south-east portal of the derelict Sapperton tunnel of the Severn and Thames canal built in 1789. In the Stroud valley a number of mills were seen and other buildings such as a lengthman's round house, reminders of the Industrial Revolution.

The final visit of the day was to Frocester tithe barn which until the Dissolution had belonged to the monks of Gloucester. In 1554 the lands were purchased by the Huntley family and until 1922 formed part of the Woodchester estate. The Court is a medieval house enlarged *c.* 1554 and again in the 18th century. The gatehouse dates from *c.* 1600. The barn, 186 ft. by 30 ft., consists of fifteen bays with fourteen pairs of raised base-crucks dating from 1284-1306.

FIFTH MEETING: 16 August: WESTON-UNDER-PENYARD AREA

On Howle Common Mr. Homes explained that where the cultivated fields were twelve months earlier there was opencast coal-mining. Speaking about the geology of the area Mr. Kendrick said that the coal seam was only 3 to 4 feet down and was about 2 ft. 3ins. thick.

A stop was made to view Euroclydon the one-time seat of Thomas Bennett Brain, a colliery proprietor. Mr. Homes said the house built in 1867 was of brick with rusticated quoins and a stone plat-band. The site of its gasworks was pointed out.

At Hope Mansell Church Mr. Tonkin pointed out the 14th-century scissor-braced roof, the 12th-century north wall of the nave and the 13th-century windows in the east wall.

At Weston-under-Penyard Church Mr. Tonkin pointed out the unusual 14th-century scissor-braced roof, the 12th-century nave and north aisle and the 13th and early 14th-century chancel.

A number of fine houses such as Lower Weston of *c.* 1600, Street early 17th-century remodelled in 1711, the rectory late 17th-century and Bollitree early 18th century built on to a timber-framed one which was encased *c.* 1750-70 were all referred to by Mr. Tonkin.

SIXTH MEETING: 15 September: CLUN, KNIGHTON, RADNOR AREA

Up the Clun valley Lower Spoad farmhouse was visited to see the fine carved wooden lintel over the main fireplace. The house is of cruck construction with a cruck outbuilding at right angles to it.

A picnic lunch was eaten on a good stretch of Offa's Dyke on Spring Hill. Proceeding down the Teme valley the church of Llanvairwaterdine was visited to see the remains of the carved, 15th-century screen now forming part of the communion rails and the names of the farmhouses on the pews. In the churchyard the Romany tombstone was viewed.

Moving over into the Lugg valley a brief stop was made near Pilleth Church in the area where the battle of Pilleth was fought in 1402 between Owen Glyndwr and Edmund Mortimer.

At Old Radnor Church the two 13th-century windows and piscina in the chancel, the early 15th-century north aisle, the chancel and nave of *c.* 1480 and the early 16th-century south aisle were pointed out. Special attention was drawn to the fine screen of *c.* 1500, the unrivalled Gothic organ case of the early 16th century and carved ceilings of the same date.

At New Radnor the earth embankments and the remains of the town walls, probably built in the early 14th century, were pointed out. At Kinnerton members walked to the Four Stones where Mr. Tonkin suggested that the three larger stones may well have supported the capstone of a cromlech.

DURHAM VISIT: 22-29 August

Forty-three members travelled via Abbots Bromley, Ashbourne, Matlock and Scotch Corner to Hatfield College, Durham, and on the way visited Newby Hall near Ripon, a brick house built in 1705 with wings added by Robert Adam in 1767-80. The Adam interiors are among the finest of their time in Europe.

On Thursday morning Dr. C. W. Gibby took the party on a tour of the streets and buildings in the vicinity of the college, castle and cathedral. A visit was made to the Gulbenkian Museum, a purpose-built museum displaying oriental art. The afternoon was spent at the open-air museum at Beamish Hall which illustrates the way of life in the north of England. The remains of the Benedictine, Finchall Priory founded by St. Godric *c.* 1110 were also visited. In the evening Dr. Gibby gave an illustrated talk on the "City and County of Durham".

The whole of Friday was spent on Hadrian's Wall with Dr. D. J. Smith, F.S.A., keeper of antiquities, university of Newcastle, as guide. Corbridge, Chesters and Housesteads were visited, and over half the party walked along the Roman wall, some three to four miles, from Housesteads to Steel Rigg.

In the evening Dr. B. Roberts of the university geography department gave an illustrated talk on "Village Plans in County Durham".

On Saturday morning members visited Durham Castle which contains work from the 12th to 16th centuries and Durham Cathedral which is largely Norman with Early-English additions and good monastic remains such as the monk's dormitory now used as a library and museum.

In the afternoon Washington Old Hall, the early home of the Washington family, Jarrow Church founded by Benedict Biscop in 684 and Monkwearmouth also founded by him *c.* 675 were visited. Both are famous for their associations with Bede.

Sunday morning was free and in the afternoon Seaton Delaval built by Vanburgh, 1718-29, was visited.

Monday was spent in Weardale and Allendale visiting Langley Castle, an impressive pele-tower of *c.* 1350, Hexham Abbey dating from *c.* 1180-1250 and 1850-1910, and Blanchland, a planned village of the 1750's.

On Tuesday members looked around the market town of Barnard Castle and its ruined castle; the Bowes Museum, one of the great national collections including Spanish art, furniture and ceramics; Raby Castle mainly of the 14th century; and the early Saxon church at Escombe.

On the return journey on Wednesday Sudbury Park, a brick house of the Vernon family built in the 1660's with good plaster ceilings was visited.

AUTUMN MEETINGS

FIRST MEETING: 6 October: The President, Mr. J. W. Tonkin, in the chair.

Mrs. M. Tonkin gave a talk on "Genealogy—How and Where". She said that genealogy was not a new subject and attempted to explain how to compile a family pedigree. To do this she referred to the various records and documents needed and where they are to be found. Mrs. Tonkin illustrated her talk by giving some examples which showed some of the difficulties likely to be encountered.

SECOND MEETING: 27 October: The President, Mr. J. W. Tonkin, in the chair.

This was an open meeting held in the Town Hall as the eighth annual F. C. Morgan lecture. Mr. A. H. A. Hogg, C.B.E., F.S.A., who had recently retired as secretary of the Royal Commission on Ancient Monuments (Wales), spoke on "Hill-forts and Herefordshire". He explained that the majority of the hill-forts are west and south of a line from the Dee to Dungeness; that many of the hill-forts in a wide belt from the Dee to the Isle of Wight have square buildings in them, whilst outside this belt all have round buildings; that in this same belt are found integral guard chambers and larger hill-forts than elsewhere. His lecture is printed on pp. 14-21.

THIRD MEETING: 17 November: The President, Mr. J. W. Tonkin, in the chair.

The Sectional Recorders for Archaeology, Botany, Buildings, Deserted Medieval Villages, Entomology, Geology, Industrial Archaeology, Mammals and Ornithology gave their reports for 1973 which are printed on pp. 120-138.

WINTER ANNUAL MEETING: 8th December: The President, Mr. J. W. Tonkin, in the chair.

Officers for 1974 were appointed. The accounts for the year ending 31 December 1972 were presented and adopted. These are printed on p. 8. A long-throw lens for the projector has been purchased. Mr. Tonkin in paying tribute to Mr. Coleman for his twenty-one year's service to the club said that members had contributed approximately £100 to a presentation fund. Mr. Coleman

accepted a set of woods and bag, an all-wave radio and a cheque, and in his thanks recalled some of the events in the club's history.

The President also announced that Mr. V. H. Coleman and Mrs. W. Leeds had been made honorary members of the club.

Mrs. S. Morrill gave a talk on the "Poor Law in Hereford, 1836-51". She said that as a result of the passing of the Poor Law Amendment Act in 1834 a new workhouse to house 250 people to replace the three already existing in Hereford was built on the site of the old St. Guthlac's Priory. The architect was Mr. Ploughden of Oxford and it was built by Johnson and Treherne and opened in 1838. It is hoped to publish her talk at a later date.

WOOLHOPE NATURALISTS FIELD CLUB

Honorary Treasurer's Cash Account for the year ended 31st December 1972

RECEIPTS

1971			£	£
		Balances, 1st January 1972		
		Cash at Bank:		
		Current Accounts—		
183		General	610.25	
734		Subscriptions	645.06	
		Deposit Accounts—		
2,646		Subscriptions	3,676.28	
273		George Marshall Fund ...	291.72	
		Excavations Account		
—		(Ministry)	110.50	
123		Herefordshire Flora ...	128.20	
		Hereford City		
430		Excavations	448.25	
		Archaeological		
21		Research Group ...	26.35	
4,410			5,936.61	
3		*Less* Due to Secretary ...	1.97	
4,407				5,934.64
900		Grants		2,600.00
		Interest on Investments		
	33	3½% War Stock ...	32.64	
		Herefordshire County		
	62	Council Loan ...	53.37	
	165	Bank Deposit Interest ...	205.87	
260				291.88
		Subscriptions		
	900	General	890.51	
	10	Archaeological Group ...	26.02	
910				916.53
—		Croft Ambrey Excavation Fund		43.94
25		Bequest		—
269		Sales of Offprints etc. (Net)		265.24
283		Income Tax Refunds ...		—
47		Field Meetings (Net) ...		68.80
—		Royalties		51.80
—		Donations for Chairs ... (£82.50 donations for chairs has been included in sale of offprints figures		18.00
£7,101				£10,190.83

PAYMENTS

1971			£	£
20		Insurance	22.45	
		Printing and Binding		
275		Transactions	1,426.68	
95		Printing and Stationery ...	60.46	
71		Postage and Telephone ...	123.15	
29		Subscriptions and Donations	34.57	
12		Expenses of Meetings ...	37.05	
532		Excavation Expenses ...	2,481.85	
		Archaeological Group		
6		Expenses	19.91	
10		Sundry Expenses	16.38	
75		Honoraria to Assistants ...	75.00	
41		Expenses of Covenant Scheme	25.00	
—		Chairs	92.25	
1,166				4,414.75
		Balances, 31st December 1972		
		Cash at Bank:		
		Current Accounts—		
610		General	296.75	
645		Subscription	611.48	
—		Excavations	130.50	
		Deposit Accounts—		
3,676		Subscription	3,534.74	
292		George Marshall Fund	307.48	
		Excavations Account		
111		(Ministry)	9.40	
128		Herefordshire Flora ...	133.20	
		Hereford City		
448		Excavations ...	565.97	
		Archaeological Research		
27		Group	31.81	
—		Woolhope Leintwardine Dig	156.60	
5,937			5,779.93	
2		*Less* Due to Secretary ...	1.85	
5,935				5,776.08
£7,101				£10,190.83

NOTE: The Club owns £932.70 3½% War Stock and £1,040 Herefordshire County Council Loan Stock.

Auditor's Certificate

I have audited the above Honorary Treasurer's Account and certify it to be in accordance with the books and vouchers of the Woolhope Naturalists Field Club.

(*Signed*) HERBERT S. WIDGERY,
Chartered Accountant.
Hereford.
17th May 1973.

Presidential Address

Herefordshire Vineyards

By C. H. I. HOMES

THERE is little evidence of early vineyards in the county. Yet farm names of The Vineyard, Vinetree and Vinesend and field-names of The Vineyard, Wine yard and Vinings seem to indicate that at one time, vineyards were scattered all over the county.

The following list of possible sites has been obtained from the list of field-names, as given in the Tithe Apportionments of the county, 1835-1845. All available apportionments in the County Record Office have been checked through. The list is presented in the following order:

Present name of parish
Tithe Map number (not O.S. number)
Field-name
National Grid Reference

LIST OF POSSIBLE MEDIEVAL VINEYARD SITES IN HEREFORDSHIRE

Bishops Frome
No. 917 and 918 Vineyard SO 666470
A north-facing sheltered site. On opposite side of road to Lower Vinetree Farm. There is also an Upper Vinetree Farm about half a mile away.

Bosbury
No. 917 The Vinens SO 690435
An open site south-west of The Merins. Close to site of the bishop's palace.

Bridstow
No. 104 Vineyard SO 587240
On right bank of the Wye below Wilton bridge.

Burrington
No. 292 Vineyard SO 442725
A sheltered south-facing site north of the village.

Cradley
Two sites in the parish.
(1) No. 1629 Great Vineyard Wood and No. 1634 Little Vineyard Coppice SO 7447
It was not possible to locate exact site owing to poor state of the Tithe Map but think they were on a south-facing site north of Upper and Lower Vinesend farms.
(2) Mr. Vaughan tells me that the field at SO 747504 has always been called The Vineyard.

Dilwyn
No. 100 Winyard Croft SO 388555 and No. 102 Winyard Orchard SO 388556.
An open site west of Luntley Court.

Donnington
No. 1579 Vineyard Bank SO 719335
A south-facing slope opposite The Vineyard Farm. Traces of terracing (now removed) are mentioned as possible vineyard in *R.C.H.M.* Vol. II for Herefordshire.

Various old books mention the 13th-century bishop's vineyard planted by Bishop Cantilupe "South of the Wall hills" which yielded seven pipes of good quality white wine in 1289.

This site is about four miles south of Wall Hills and used to be in Ledbury parish.

Dorstone
No. 499 Roberts Vineyard SO 3041
Unable to locate exact site owing to poor condition of Tithe Map. A high open site south-west of Dorstone.

Hereford
Vineyard Parish SO 523392
A small extra-parochial parish reputed to be the site of the bishop's vineyard.

A south-facing slope on the north bank of the river Wye downstream of Eign Road railway bridge.

Holme Lacy
Two sites in the parish.
(1) No. 227 and 228 Vineyard SO 549355
No. 226 Vineyard Orchard SO 549355
Three adjoining plots opposite Bogmarsh turn.
(2) No. 464 Vineyard SO 560332
A north-facing site in south of the parish on road to Bolstone.

Hope-Under-Dinmore
No. 239 Vineyard SO 503524
A sheltered south-facing site south of Bury Farm.

Leintwardine
No. 896 Vineyard SO 401747
A high open site north-west of the village.

Leominster
No. 966 Vineyard SO 479554
No. 967 Upper Vineyard Orchard SO 480554
An open site south of Ivington Park.

Little Cowarne
No. 100, 101 and 102 Wynyard SO 603514
Three adjacent plots opposite drive to Meadow Court.

Llangarron
No. 669 and 670 Vineyard SO 530187
Sheltered south-facing slope south of Llangrove.

Llanwarne
Two sites in this parish.
(1) No. 241 and 242 Vineyard SO 496257
A high open site on side of main road near St. Weonards.
(2) Have been told by a local resident that the field which is the rickyard at Llanwarne Court has always been called The Vineyard SO 504275.

Middleton-on-the-Hill
No. 709 Vineyard Orchard SO 546634
South-east facing slope to the north of Moor Abbey.

Moreton Jeffreys
No. 57 Wineyard SO 603484
An open site between the church and the Court.

Munsley
No. 118 Vineyard SO 661418
A sheltered south-facing slope on the parish boundary.

On a farm agreement of 1906 it is called Wine Piece and is shown as being the other side of the hedge.

Pencombe
Mrs. P. Williams informs me that in the manorial records 1341-42 there is a reference to a Vineyard.

Pipe and Lyde
No. 100 Vineyard SO 501444
A sheltered site facing south-east.

St. Martins, Hereford
Lower Vineyard SO 505387
Taken from particulars of sale of Hinton Court Estate 1892.

Sellack
No. 70 Vineyard SO 586279
A high open site south-west of Sidona House.

Staunton-on-Wye
SO 354457. Mr. Skyrme told me that the field behind the rickyard at Handmore has always been called The Vineyard.

Tarrington

At the Hereford County Record Office there is the Tithe Apportionment but no Tithe Map.

No. 340 Vine Nap No. 341 Vine Orchard

There is a Vine House in the Parish.

No. 412 Wine Orchard. No. 264 Wine House Orchard. No. 424 Vineyard.

Tedstone Delamere

No. 120 Part of Vineyard SO 692591

An open south-facing site south of Tipton Hall.

Walford

No. 1461 The Vineyard SO 6120

Difficult to locate owing to the poor state of the map but appears to be a high open site south of The Vineyard Farm.

Walterstone

SO 346242. Two farms in the parish called Little Vineyard and Vineyard. No field-name of Vineyard.

Welsh Bicknor

No. 72 Park Ford and Vineyard SO 584175

A south-east facing riverside site.

Weston Beggard

No. 63 Vineyard Orchard SO 589427

A sheltered south-facing slope east of Shucknal Spout.

Whitbourne

No. 655 Vinings SO 724563

South-facing sheltered slope close to site of the bishop's palace known locally as The Vineyard.

Winforton

No. 138 Vineyard SO 295469

Open flat site west of the Court.

Certain house names such as Vine Cottage or The Vinery which appear to be of the 18th and 19th century have been omitted.

This list is by no means complete as only one source of information has been used e.g. Tithe Maps and Apportionments. Some parishes never had a Tithe Map, while in others it is missing. In some cases only a few field-names are given and in many parishes there are tithe free fields which are not listed.

The thirty-four possible sites listed are evenly spread all over the county and show that vineyards must have been a feature of medieval agriculture.

Their situation does not seem to have been influenced by physical features such as soil, aspect or altitude but they are all small plots ranging from a quarter of an acre to two acres.

It is known that there were vineyards in the county in the 13th century but there is little evidence of when or why they were abandoned. No doubt the reasons were many, but I think one was climatic change. There is ample evidence of a cold period from the mid-16th century to the mid-19th century with very cold winters. Winter frosts would not harm vines, but if accompanied by late spring frosts or early autumn frosts the crop would be lost or in severe cases the vine would be killed.

Today with winters geting warmer, rivers no longer freezing over, no skating on the ponds and ice houses no longer any use, vines are being grown again in the county at Almeley, Kington, Whitbourne and other places.

Hill-forts and Herefordshire

By A. H. A. HOGG

FOR any archaeologist concerned with the settlements of the pre-Roman Iron Age, Herefordshire is now one of the most important parts of Britain. There is a lot of information available about the Iron Age in this county, but this is largely the result of one man's work. Any attempt at a detailed study of hill-forts *in* Herefordshire would have been almost entirely a re-hash of Dr. Stanford's results; so I thought that it would be preferable to consider how this region now stands in relation to the Southern British Iron Age as a whole, with particular reference to hill-forts.

I must emphasise that what I have to say is a personal interpretation of the evidence, and is to some extent conjectural; it would be easy to pick holes in the argument at many points. The phrase "the present evidence seems to me to indicate that" should be understood to precede most statements.

To appreciate the revolutionary change in outlook to which Dr. Stanford's work has very largely contributed, we need only to look back a dozen years. In about 1960, Professor Hawkes published his 'ABC of the Iron Age', and we were able to feel that all the major problems of that Age had been resolved. In broad outline, very generalised and leaving aside detailed chronological and territorial subdivisions, the scheme was based on three cultural phases, entering Britain on the south and east and pushing back the earlier cultures to the north and west. The first arrivals (A), about 500 B.C., introduced the idea of univallate hill-forts, together with the wide-spread use of iron. Later, about 250 B.C., there was a second wave of influence (B), their major features being the use of the sling and thus the introduction of multiple ramparts. Finally a third wave (C) introduced wheel-turned pottery and coinage. Indeed, the identification of these A, B and C cultures, and their detailed territorial subdivisions, depended to a great extent on pottery styles. Chronologically, a very important feature implicit in this scheme was that everything which happened in the north and west must be two or three centuries later than corresponding events in the south and east. Another element of the accepted dogma at that time concerned the types of buildings. All dwellings were round, and associated with them were small four-post structures which were granaries. This view was so firmly held that one very distinguished archaeologist felt that Wheeler's identification of some rectangular houses at Maiden Castle had to be explained away as a misinterpretation of the evidence!

The belief that all Iron Age houses in Britain were round carried with it another implication, that *all* the 'invaders' who brought new fashions from the continent were few in numbers; for so far as we know, the prevailing type of dwelling of that period in Europe is square. The continued use, in this country, of the round dwellings characteristic of the Bronze Age thus implies massive survival of the earlier inhabitants.

I have gone into some detail about the views held in the late '50s, because it is necessary to know the background in order to understand the astonishment, and indeed disbelief, which greeted the results of work at Croft Ambrey.[2] This contradicted practically every article of faith.

First of all, every structure in that hill-fort was a small 'four-poster', and these were arranged neatly in rows. So according to the accepted interpretation, Croft Ambrey contained an enormous number of granaries and no dwellings at all. Second, the sequence of reconstruction at the gateways carried the original foundation of the defences back to about 500 B.C. Remember, according to orthodox doctrine, that was just about when the earliest invaders landed in Kent!

Subsequent work in other parts of Britain has shown that 'four-posters' are widely distributed, both by themselves and in association with round buildings and more elaborate rectangular buildings; and that some hill-forts at least go back nearly to 1000 B.C., and must be accepted as formally of Bronze Age date, so at 500 B.C. Croft Ambrey is quite a recent foundation. Nevertheless, if one had to name one investigation in particular as having opened the way to a break with the older ideas, it would be the excavation of that Herefordshire site.

At about the same time, the accepted dogma suffered another blow. Dr. Peacock demonstrated that some, at least, of the pottery of the period had been made at definite centres and distributed by trade; so pottery-styles can no longer be accepted as corresponding reliably to particular cultures.[3]

We are therefore at liberty to take an entirely fresh look at the evidence; and one aspect of it to which relatively little attention has been paid is the distribution of hill-forts. Hill-forts are just as much artifacts as are pots or pieces of metalwork, and compared to such objects they have certain advantages: the great majority of them still exist—probably well over four-fifths of those ever made, as against an infinitesimal fraction of the pottery; and one can feel reasonably confident that the find-spot of a hill-fort was also its place of manufacture. On the other hand, very nearly every excavated fort proves to have had a long and complicated history, and they were built over a period of nearly a millennium; so any distribution map almost certainly contains serious anachronisms. Nevertheless, provided these reservations are kept in mind, the results obtained by a study of distribution patterns can be of interest.

First, consider simply the position of Herefordshire relative to the distribution of hill-forts in Southern Britain. These are not scattered uniformly. The great majority lie in the west. Indeed, out of 1,394 hill-forts known to occur on the area covered by the Ordnance Survey map of Southern Britain in the Iron Age, 1,304 lie south-west of a line joining the estuary of the Dee to Dungeness.

This is a convenient line to draw, as these two features are easily recognisable on any map; but there is no special significance in it, and so far as one can define a boundary between the two types of distribution, the dividing line seems to be rather concave towards the south-west. Herefordshire lies near the middle of the 'frontier'.

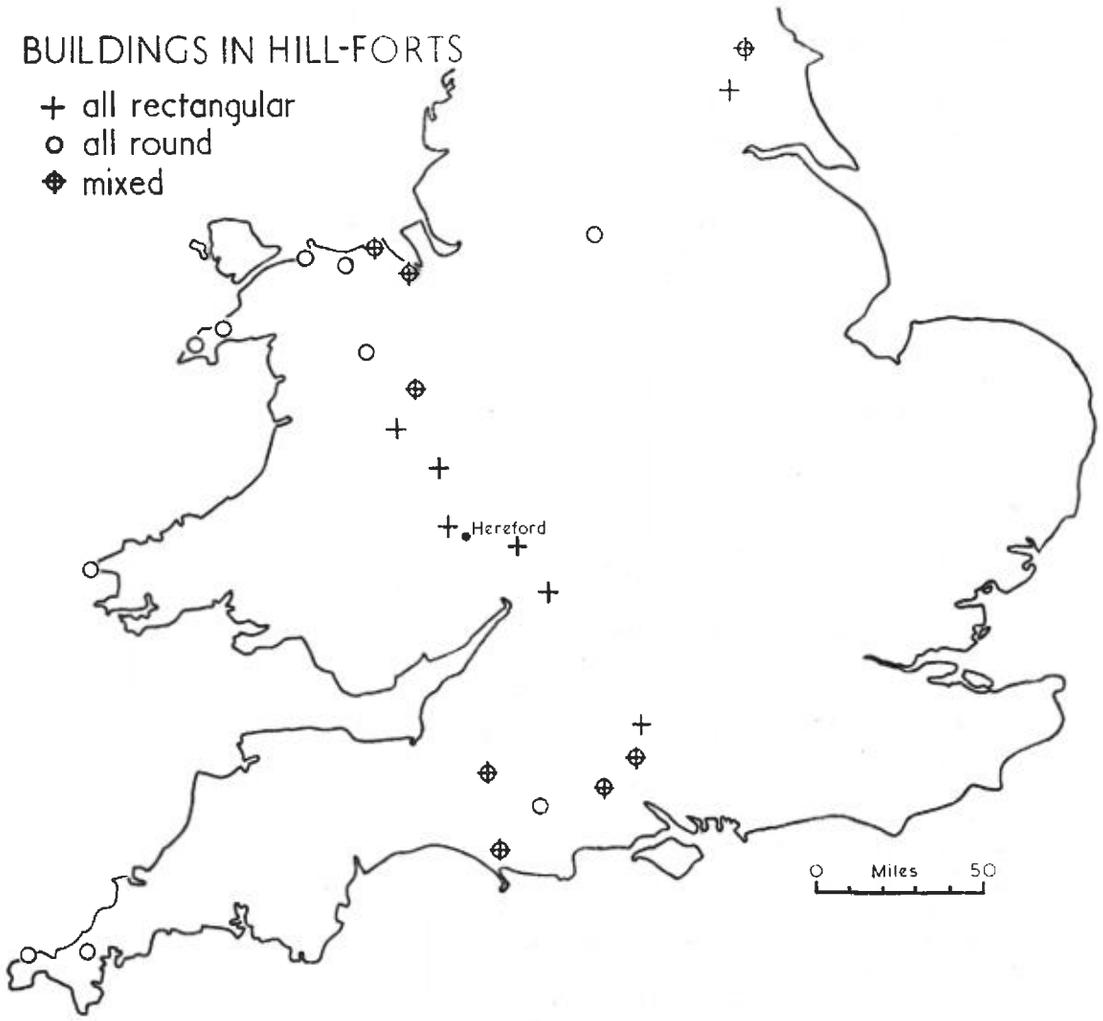

FIG. 1
Buildings in Hill-forts

So much is obvious, but any attempt to interpret this distribution runs into difficulties, for many possible explanations can be devised. Moreover, there is a considerable risk that by using a modern term one will impose its present significance on a situation where it is inappropriate, which is why the word 'frontier' is in inverted commas.

It is certainly tempting to regard this distribution as corresponding to some sort of political or cultural boundary, but the facts may turn out to be explicable on a purely topographical basis; and it is a sound rule in archaeology always to choose

the least exciting explanation. My own view (but I would emphasise that not everyone would agree) is that although there were probably local rulers who would for a time have claimed to exercise some sort of nominal control over a region and the hill-forts in it, such a political entity would be very transient, and is most unlikely to have influenced the choice of sites for hill-forts. I do not think that there is much chance of defining a confederation of this kind archaeologically. The fact that in this region *all* the settlements, so far as known, are fairly strongly defended, suggests that the risk of a raid was always present, from neighbours almost as much as from people living afar off. One may perhaps envisage a state of affairs similar to that on the Scottish borders in the late middle ages.

I believe, therefore, that it would be unprofitable to look for any indication of political organisation, which would presumably manifest itself by the strategic siting of hill-forts. On the other hand, as you will see later, I do think that the general distribution arises from cultural differences, though the boundaries of the appropriate regions are not at all sharply demarcated. Topography alone does not offer a sufficient explanation.

One would like to be able to link the cultural evidence to tribal names; but I don't propose to attempt to do so, for even as late as the Roman period the territorial boundaries of tribes remain very ill-defined indeed. So I shall limit my discussion to the archaeological evidence, and leave the actual people concerned anonymous.

What evidence is available? As I mentioned earlier, until recently pottery styles were regarded as a cultural characteristic; but Dr. Peacock has shown that the distribution, in some cases at least is the result of trade. So at present our evidence must be almost exclusively based on hill-forts. Only a few have been excavated, so for most of them the information is limited to their siting, area, and arrangement of defences, though in some cases the dwelling-sites remain visible.

Nevertheless, although our knowledge of the dwellings used is so limited, they are perhaps the most interesting and instructive items, and deserve to be considered first. I ought really to say structures rather than dwellings, for one can seldom determine for certain what any particular building was used for. Indeed, just as in modern farms, an old dwelling may have been re-used as a byre or a barn.

The revolution in outlook produced by the proof that at Croft Ambrey the 'four-posters' must in many cases have been dwellings has led to their recognition on a great many other sites. In fact, knowing what to look for, they can now sometimes be observed even without excavation. No doubt the distinction between round and square buildings with no other discrimination is much too simple, and it is risky to attempt a distribution map. None the less, bearing in mind those risks there does seem to be some sort of pattern emerging (Fig. 1). The 'four-posters', either alone or mixed with round buildings, seem restricted to a broad belt running north-north-west to south-south-east, along the Welsh border and across Wessex; we do not really know how far east they extend, but I don't think they have yet been found in the north. At the outer ends of the belt, round

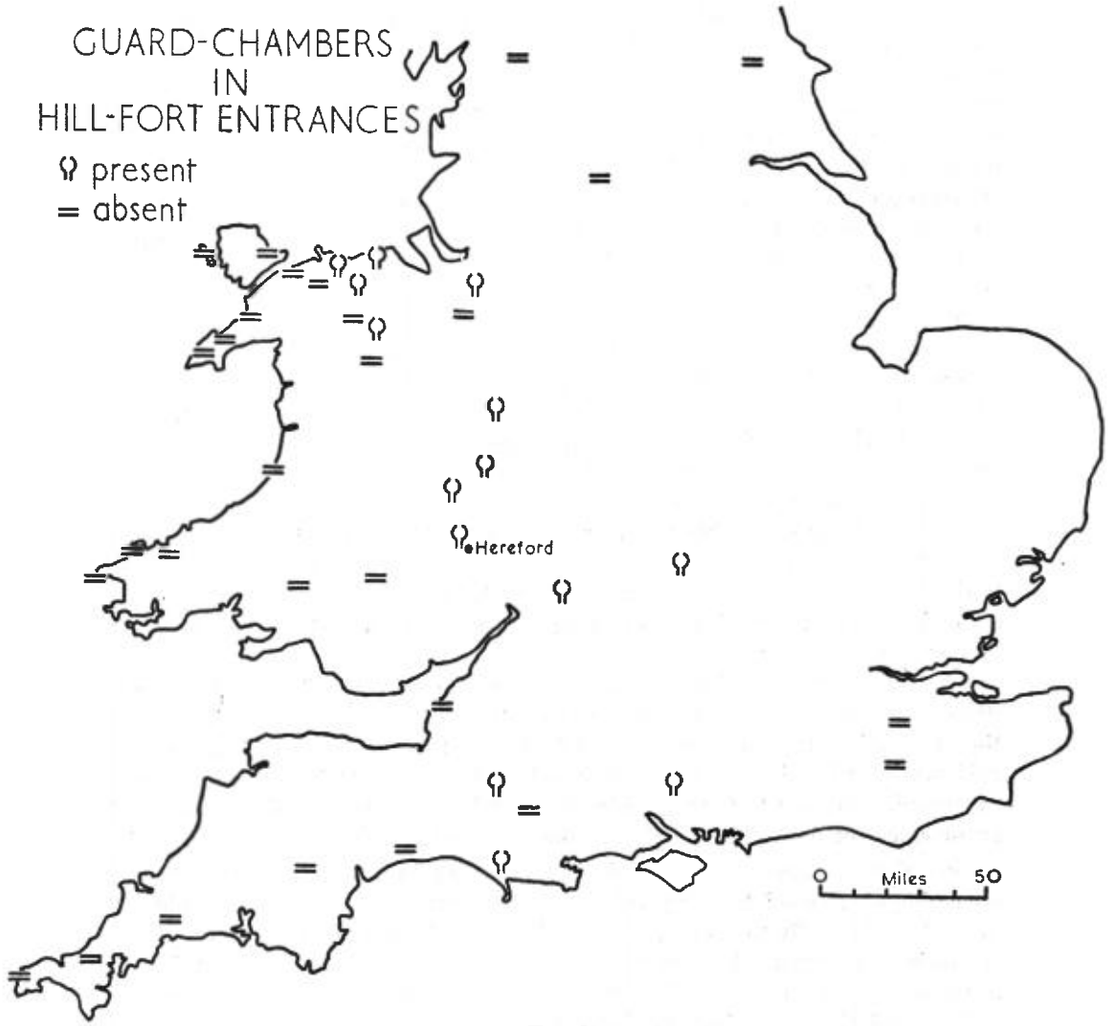

FIG. 2
Guard-chambers in Hill-fort entrances

and square occur together; that is, on the same site, not necessarily at the same time. In the middle of the belt, we find places like Croft Ambrey, with 'four-posters' exclusively, often arranged in 'streets'. Then west of the belt there are forts with round buildings exclusively, always so far as I know lacking any systematic arrangement.

Some of the forts in Herefordshire and elsewhere also display impressive entrances with twin guard-chambers. Again to lump all these together without considering their detailed differences is no doubt an over-simplification, but nevertheless one gets what looks like a significant pattern (Fig. 2), generally similar to that of the square buildings, but not identical. Dinorben, for example, had fine guard-chambers but apparently all its pre-Roman buildings were round. The occurrence of integral guard-chambers can be looked at from two points of view. From one, it is a specific recognisable characteristic comparable to a type of pottery or metalwork; but from another it indicates some form of fairly elaborate social organisation, for a system of guard-chambers implies that someone either accepted or had imposed on him the duty of keeping guard. This may well have been considered a very honourable position; the porters in early ballads and romances are usually described as 'proud'. In most hill-forts, the guard-chambers are quite as commodious as the dwellings within the enclosure, sometimes even better, so it seems a reasonable deduction that the guard duty belonged to a particular family that lived at the gateway. Possibly, since the chambers are almost always duplicated, two families shared the responsibilities so that the gate was never left unguarded.

The presence of integral guard-chambers thus seems to imply a fairly well-organised social system, which would be consistent with the same sort of outlook as that which led to compactly planned settlements such as Croft Ambrey. I ought to emphasise, though, that the association is not invariable; I mentioned Dinorben as an example. Nevertheless, these two features—paired integral guard-chambers and square buildings—do seem to have closely similar distributions.

Earlier, I expressed my belief that, at least in principle, one should be able to treat even an unexcavated hill-fort as an artifact and thus as capable of some degree of typological study; and it is certainly possible to separate out our 1400 hill-forts into many distinct groups. But I am aiming at a broad outline, so I will only consider one aspect, that is, size.

Size, of course, is likely to be related, even if rather loosely, to population. For some forts, such as Garn Boduan, where all the dwellings survive, one can get a rough idea of the number of inhabitants. There is obviously great uncertainty, perhaps a factor of 2 either way, but for most forts with round houses the figure seems to be about 20 or 25 persons per acre—400 or 500 people for Garn Boduan.[4]

The inhabitants must have lived on local produce; but we do not know the productivity of the land in the Iron Age. Nevertheless, we have some idea what it was in A.D. 1100,[5] and it seems fair to suppose that in the Iron Age agriculture would be just a little less efficient. Assuming that this does give an approximate indication of the average population which the land could support, it follows that if you know the population of a hill-fort you can say what area it would need to support it. This approach is subject to all sorts of reservations, but the same *general* error is likely to apply throughout the map, so the results obtained can properly be *compared*.

Applying these arguments gives some interesting results. Garn Boduan dominates a block of territory which is fairly well defined topographically. It covers some 70 square kilometres, and the estimated population-density is 4

persons per square kilometre, giving a total of 280 people. This compares well with the lower estimate of population for the hill-fort. On the other hand, in the south-eastern counties, the territory for a single fort cannot be determined, but taking an average for a group of 50, a similar calculation indicates either that they held about 100 persons per acre or that the countryside was only about a quarter as productive as in 1100 A.D. More probably, there were many unfortified settlements—as indeed the wide spacing of the hill-forts would suggest.[6]

But now turn back to Herefordshire, and the belt of territory where 'four-posters' and guard-chambers occur. This belt also corresponds to an exceptionally heavy concentration of large forts.[7] Taking Credenhill as an example,[8] Dr. Stanford has shown that these planned 'four-poster' settlements are likely to have had a density of population three or four times as large as for the 'round-house' sites, and that Credenhill would contain some 3600 to 4800 inhabitants. If one assumes that as in A.D. 1100 the surrounding territory could support 10 persons per square kilometre, this needs 360 to 480 square kilometres of land. But in this region of numerous large hill-forts it would be very difficult to postulate as much as 150 square kilometres for Credenhill—100 looks much more reasonable. So we are driven to the conclusion that compared to the farmers of the 11th century A.D., the Iron Age inhabitants of this region were getting two or three times as much out of the land.

Recapitulating the conclusions reached so far, then, the evidence suggests that this broad belt of territory was at least in part inhabited by a distinctive and remarkable group of people. They were capable of utilising their resources with an efficiency which was not attained again for more than a thousand years; and at least in each individual settlement they were very highly organised. Indeed, there is additional evidence for this organisation which I have not yet mentioned. At Credenhill, for example, Dr. Stanford demonstrated that some of the houses had been rebuilt six times on the same site, implying continuity of tenure lasting some 400 years, or 12 generations.

You may reasonably think that in such circumstances a centralised state would have developed, contrary to what I said earlier; and I would not deny the possibility. Nevertheless, I should expect, if that had happened, to find that the majority of the fortifications would have been allowed to fall into decay. In brief, it is not necessary to postulate a centralised state, and the evidence is, on the whole, slightly against the idea.

Whether they were politically organised or not, there does not seem to be much doubt that this culture, in its most fully developed form, existed in the southern part of the Welsh Marches. Whether it was equally well-developed south-east of the Severn is not yet certain, but there seems to be no doubt that what is now Herefordshire lay well in the heart of the relevant area.

So far I have said nothing about the origins of these people, and practically nothing about their date. On the first of these matters one *can* say very little. On the evidence of their buildings, it is almost certain that they represent what must have been a fairly massive invasion from the Continent—even though

invasions are now archaeologically unfashionable; for the normal Bronze Age dwelling in Britain does seem to have been round, whereas small square houses are quite usual (though not invariable) abroad. Also, the distribution of the culture suggests strongly that these supposed invaders arrived either *via* the Severn or *via* somewhere within 50 miles or so from Southampton Water, or possibly by both routes. Unfortunately, where they came from on the Continent is quite uncertain, for very little detail is known about either houses or defences in north and west France, which seems the most likely area. Until much more research has been done in that region, the question must remain open.

As to date, we do know quite a lot, and when the radio-carbon dates from places such as Danebury, The Breiddin, Moel Hiraddug, and Moel-y-Gaer near Mold have all been correlated, we shall know a good deal more. At present I shall merely use a rough summary of Dr. Stanford's chronology.

The small square houses, which seem to be the essential diagnostic feature of this culture, are shown by him to have been in use at Croft Ambrey, in planned streets, between 500 and 600 B.C. Having regard to its position well inland, a date at least a century earlier would seem reasonable for the arrival of the people bringing this new culture. The guard-rooms, which I have suggested may be another characteristic, do not appear until about 400 B.C. This invention seems quite in keeping with the highly organised social system implied by the plan of Croft Ambrey. And as one would expect, the use of square houses and guard-chambers extended outside the area where this culture appeared in its purest form, while at the same time inventions made elsewhere were imported, such as, perhaps, the system of multiple ramparts developed in association with sling warfare.

These settlements seem to have flourished *at least* until the arrival of the Romans, that is for fully seven centuries. I will not attempt to follow their history further, but I should not find it surprising if medieval and later historians are able to trace in these regions evidence that the inhabitants have displayed further signs of the social and organisational ability displayed by their Iron Age ancestors.

REFERENCES

[1] C. F. C. Hawkes, 'The ABC of the British Iron Age' in *Problems of the Iron Age in S. Britain* (ed. S. S. Frere, occ. paper II, Inst. of Archaeology, Univ. of London nd *c.* 1960), 1.16; and *Antiquity* XXIII (1959), 170-182. Despite the modifications, especially in chronology, required by subsequent research, this remains the best available coherent study of the southern British Iron Age as a whole.

[2] S. C. Stanford, *Croft Ambrey* (Hereford, 1974); (see also n. 8 below).

[3] D. P. S. Peacock, *Ant. Journ.* XLIX (1969), 41-61; *Proc. Preh. Soc.* XXXIV (1968), 414-427.

[4] A. H. A. Hogg, *Arch. Journ.* CXVII (1960), 1-39 espec. 22; and comments by L. Alcock, *Antiquity* XXXIX (1965), 194.

[5] A. H. A. Hogg, 'Some Applications of Surface Fieldwork' in *The Iron Age and Its Hill-Forts* (ed. M. Jesson and D. Hill, Southampton Univ. 1971), 116, Map fig. 27.

[6] *Ibid.* (n. 5) 116-8.

[7] See *The Iron Age in the Irish Sea Province* (ed. C. Thomas, C.B.A. Research Report 9, 1972); 12, Map fig. I; 26, Map fig. 9.

[8] S. C. Stanford, 'Credenhill Camp . . . ' *Arch. Journ.* CXXVII (1970), 82-129 espec. 120.

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Domesday Society in Herefordshire[1]

By T. A. GWYNNE

IN 1904 the Rev. A. T. Bannister was able to write in an earlier volume of these *Transactions* that the Herefordshire Domesday was one concerning which no literature existed.[2] There has since then been some much needed work on the Herefordshire folios but, even so, some fifty years later Mr. C. W. Atkin was able to write that remarkably little work appears to have been done on these same folios.[3] In the meantime, the most momentous contribution had undoubtedly been made by J. H. Round who wrote a most valuable introduction to his own translation of the folios in Volume I of the *Victoria County History of Hereford*, published in 1908.[4] Lord Rennell of Rodd produced work that utilized the Domesday statistics[5] and some reference to Herefordshire evidence was made by Miss Dorothy Sylvester in her study of the rural landscape of the Welsh Border land.[6] In 1971 Mr. R. Welldon Finn incorporated a study of Domesday values in Herefordshire into a general work which examines the general effect of the coming of the Normans on the economy of England.[7] This relative neglect of the Herefordshire folios is all the more surprising when we remember that as early as 1908 the redoubtable Domesday scholar, J. H. Round, had written, 'So numerous are the features of interest presented by the Herefordshire portion of Domesday that it is scarcely possible in an introduction to do justice to them all'. A similar sentiment has been expressed more recently by Mr. Atkin who introduces his account of the Domesday geography of Herefordshire with the words, 'The Domesday folios of Herefordshire are of more than usual interest'. The work of extracting the fullest possible meaning from the Herefordshire folios must of course continue, and it is in the hope of making a modest contribution that this present paper has been prepared. The time may now be opportune for an attempt to set out the evidence relating to the structure of society in the Domesday shire. In this attempt I intend to use all the evidence recorded in the Herefordshire folios whether or not it refers to places still in the modern shire, in this I follow the Rev. Bannister but not, for example, the compilers of the Domesday Geography of England series.

The unusual interest of Herefordshire for Mr. Atkin lay in its frontier position and it may be that something of the influence of the frontier can be traced in its social classes. J. H. Round had hinted at this when he suggested that the circumstances of the free peasantry and the serfs may have been influenced by the position of the shire, lying as it did on the very verge of Wales. It is the society of Herefordshire and the possible influences upon its structure and grouping that are the primary concerns of this present article.

Since we are dealing with a frontier area we may begin with the entries of *milites*, though it must be remembered that *milites* must have exercised a variety of functions throughout Domesday England and it would be begging the question

to assume that those recorded in the Herefordshire folios were necessarily connected with the problems of Border defence, or for that matter, offence. The problems surrounding *milites* in general have been the cause of much discussion and the difficulty of establishing any precise meaning has invariably been stressed.[8] From the Herefordshire folios I reckon forty *milites*[9] and note unspecified numbers recorded at Madley and at Monmouth.[10] Miss Sally Harvey has considered the evidence relating to knights in general and identifies 'two completely different social and tenurial classes, the influential knightly sub-tenants and the professional knights whose services can at first be obtained for a small amount of land.[11] In so far as all the Herefordshire *milites* seem to be sub-tenants we can perhaps claim them for the first class. It is more difficult to decide if they merit the description 'influential'. Since some held only one hide they may well fall into the second class. It is unlikely that the difficulty will be resolved from the evidence of the Domesday folios for Herefordshire. Twelve *milites* who were not sub-tenants were recorded in the Shropshire folios and eight in those for Gloucestershire, so their absence from the Herefordshire folios is perhaps noteworthy. On occasion evidence from Herefordshire can throw considerable light upon general developments, as Professor Galbraith demonstrated in his discussion of an Episcopal Land-Grant of 1085.[12]

Rather surprisingly, apart from seven entered at Ewyas Harold and an unspecified number at Monmouth, *milites* do not appear along the western border of Herefordshire. Further, no *milites* were recorded at or near the fortifications at Richard's Castle, Wigmore, Clifford, Eardisley or *Walelege*.[13] In general the *milites* of the Herefordshire folios are to be found in the central and eastern areas of the shire, and the town of Hereford itself was apparently at the centre of quite a concentration. This must cause us to question whether these *milites* could have had any functions in connection with the defence of the western border. If this were not their function, and their appearance over Domesday England in general casts further doubt upon any specialized frontier functions, we must find some other way to account for their presence that will reflect the known facts about their circumstances and distribution.

Nineteen of the twenty-three entries in the Herefordshire folios record the Church of Hereford as the primary landholder of the estates on which *milites* were entered. J. H. Round discussed the significance of knights and knight-service in terms of the ecclesiastical estates of Worcestershire,[14] but unfortunately the evidence from the Shropshire, Worcestershire and Gloucestershire Domesday folios does not bear out this feature of relatively large numbers of *milites* entered upon ecclesiastical estates. The *milites* of Herefordshire, whether found on ecclesiastical estates or not, vary in wealth. I calculate the average holding of a *miles* in Herefordshire in terms of hides to be 1.6. This is calculated from those entries which provide details of knightly hidage and which cover the following range:

milites	1	4	1	1	2	2	1	2	2	1	1	3	1	1	1	1	1	3	1	1	31
hides	1	5	1½	6	3	1	½	1¼	1⅛	¾	1	3½	3	2	½	5	1	9¼	1	1½	49⅜

Detailed work on the size of Domesday knights' fees is set out in a most useful study by Miss Sally Harvey and the range of holdings is demonstrated by a histogram. Here we may perhaps take note of two statements from that study. First, 'The mean of the holdings of the Domesday knight approaches 1 2/5th hides'. The second statement points out that, 'there is some evidence of a slight regional difference though not a great disparity'.[15] It would seem that the Herefordshire *milites* were more or less in line with their fellows throughout the land in the 11th century.

Proceeding to details of plough beasts we find Herefordshire *milites* recorded with a full team of eight oxen on two estates at Ewyas Harold, on an estate at Burghill, at Sollers Hope and at Bridge Sollers.[16] Hence *milites,* on occasion, held nearly double the villein average of 4.8 established by the late Reginald Lennard. Such details of Herefordshire *milites* of course represent individual entries not an average, so the comparison must remain of strictly limited value. It does, however, suggest that at least some Herefordshire *milites* were quite well off in terms of plough teams. At Bridge Sollers, for example, a second *miles* had 16 oxen.[17] However, an examination of the entry for Burghill reveals an interesting situation: we find 2 *milites* holding 2 ploughs and 2 *bovarii.* If we are safe in assuming that the 2 *bovarii* were responsible for the operation of one of these ploughs we are left wondering if the 2 *milites* operated the remaining plough when necessary. Perhaps it is simpler to assume that each *bovarius* operated a plough single-handed. Yet a similar situation appears at Sollers Hope where we find a single *miles* holding a plough, but there is only a single bordar there to work it. However speculative it may be, such evidence suggests that *milites* on occasion had to carry out agricultural tasks. Miss Harvey has noted that some evidence points to knights, 'usually dismissed as "exceptional", who hold a hide or so, humble people, no better off than prosperous peasants'.[18] Similar evidence is found in the Shropshire folios, for example at Acton Reynold where we find 2 *milites* with a plough but with no labour with which to man it.[19] Even so, there are three instances in the Herefordshire folios where a shortage of ploughing manpower cannot be made up even by the inclusion of *milites* in the labour force: at Bridge Sollers, Lyde and Ullingswick.[20] Vills in Herefordshire were sometimes shared between *milites* and other groups such as clerks, chaplains, priests, riding men, reeves and a mason, and from these instances we are able to conclude that the *milites,* in their ratio to hidage, did not differ to any significant degree from clerks, chaplains and reeves. Priests and riding men do not fall far behind and even the mason is as well off as some individual *milites.* Thus far we have the *milites* of Herefordshire as men of varied substance, but, in general, they were not noticeably wealthier than many other members of Herefordshire society. It is difficult to establish any better test of wealth since only one entry records a payment: at Woolhope a *miles* paid 5 shillings. Only on three occasions is a value given for land held specifically by *milites:* at Ullingswick land valued at 100 shillings was held by a *miles,* at Lyde land valued at 40 shillings and at

Wormsley land valued at 4 shillings.[21] Here again we are faced by the same variety.

The Rev. Bannister set out in detail the evidence relating to fortifications in the shire.[22] It seems fairly clear that the castles fitted into the normal agricultural pattern of the region and, so far as we can detect from Domesday evidence, neither ignored nor obtruded upon the agricultural activities of the surrounding areas of the shire. They make little impression as centres, e.g. only at Richard's Castle do we find a smith. No castle was entered for Hereford itself but since one had stood there before the Conquest it would indeed be astonishing had William fitz Osbern neglected to look to the defences of the most important centre of his earldom. It seems quite possible that the Border region in general could have been much richer in those structures entered as *domus defensabiles,*[23] since they would have been well suited, one would imagine, to the needs of Border life. In general, however, the conclusion must be that there is very little evidence to suggest that the population of Herefordshire gravitated towards the comparative safety of areas dominated by castles. Very few of these castle sites later developed into important centres. In so far as Herefordshire was part of a system of Border defence it would appear to reflect a system in which fluidity was of the essence and not a system which relied as heavily upon static fortifications as has previously been held.

Milites were not the only group of society that we may take to be mounted-men. They were almost certainly representative of newcomers to the area while we can also find a mounted group that comprised native settlers, i.e. the *radmanni* and *radchenestri* whom we may term riding men. These were almost exclusive to the Welsh Border region. I reckon 66 riding men entered in the Herefordshire folios, 30 *radmanni* and 36 *radchenestri.* It is difficult to arrive at any generally accepted view of their status.[24] Sir Paul Vinogradoff accepted them as freemen but some of them, it has been pointed out, seem less free than others.[25]

Like the *milites,* they do not appear along the western border of the shire and, apart from one entered at Pembridge, near Skenfrith in Bremess hundred, they do not appear in either the south or the south-west of the shire. On only two occasions do the Herefordshire folios clearly record riding men with no share in plough ownership so we may fairly conclude that they were closely connected with the cultivation of the land. More often than not the riding men of Herefordshire appeared upon vills with large total populations, which may be further evidence for their participation in arable activities in flourishing vills. The Domesday scribe did not generally mark them off from the rest of the population and this too suggests a considerable degree of integration into the daily life of the rural population. The circumstances of recorded Welshmen, as will be seen shortly, provide a contrast in this respect. At Leominster we are clearly informed that the inhabitants, including one riding man, plough and sow 175 acres with their own wheat.[26]

On an unidentified manor in Tornelaus hundred we find 3 riding men 'who serve the lord'.[27] If service was common to all riding men we may wonder why

it was necessary to include this information. It may be that it was not the service that was important but the recipient. Elsewhere Domesday records disputes of many sorts and here we may have an instance of an earlier dispute as to whom the riding service was due. In the same way the Herefordshire folios sometimes record that riding men could not be separated from an estate, as at Marden.[28] There is also an instance at Martley, which is now in Worcestershire, where it is noted that 2 riding men had been removed from a manor along with the land that they held by William fitz Osbern and given to Ralph de Bernai.[29]

The evidence of the Herefordshire folios suggests that, despite the general view of Sir Paul Vinogradoff,[30] riding men were unlikely to have had any defensive functions worthy of special attention. The final qualification is of the utmost importance since it is equally unlikely that riding services would have invariably excluded more warlike activities, a fact which has generally been recognized. This, however, is not the same as assigning a specifically military function to riding men. The riding men of Herefordshire appear to exhibit no special features but bear out the general characteristics of the class as a whole.

Since we are dealing with a frontier shire we need not be surprised to find 43 Welshmen recorded in the Herefordshire folios. There are also references to unspecified numbers of Welshmen at Clive, near Ross, and at Monmouth.[31] All these were entered specifically as Welshmen and it is possible that Welshmen were also hidden beneath the terminology for the more general classes. Mr. C. W. Atkin claimed that, 'Since Archenfeld still had Welsh law and custom, the King's men there presumably were also Welsh, together with their men, and it is quite possible that some other "men" elsewhere were also Welsh'.[32] This is, of course, quite possible but it does seem that the entry of the above 45 so clearly as *Walenses* presumably served some purpose over and above the simple recording of race.

It is not possible to associate any individual landholder in Herefordshire with a clear policy of recruiting Welsh labour and it often appears that the Welshmen were not integrated into Herefordshire society: on eight occasions from a total of eleven entries recording plough ownership Welshmen and their ploughs were entered separately from the other classes. This same feature is also evident in the Shropshire folios. Some of these Welshmen appear to be quite well off. At Winforton we find, '1 Welshman holds of Ralph and has there 8 men who have 1½ ploughs'.[33] No Welshmen were recorded in the severely devastated north-west of the shire but in any case the distribution of Welshmen does not spread far beyond the still-disputed areas of Ewyas and Archenfeld. There seems to be no detectable connection between the appearance of Welshmen in certain areas and the existence of waste land for recovery.

One very interesting feature does emerge from the Herefordshire evidence and that is the frequent appearance of Welshmen at castles or other fortifications: at Clifford, Ewyas Harold, Eardisley, Monmouth and Caerleon.[34] This may in fact provide some slight clue to their functions. It may reflect their position as hostages, or more likely as a source of information and specialized military skill,

or even as a commercial element. Any, or all, of these factors would help explain the significance of these fortifications in the distribution of Welshmen. The last possibility seems particularly attractive and we may well view these Welshmen as groups settled round strongholds, enjoying the protection of Norman lords and trading across the Border. Further, boroughs were recorded at two of these sites, that is at Clifford and at Ewyas Harold. This might well be linked to the likelihood that travellers would be a useful source of information.

That Welshmen would have some special usefulness in campaigns into Wales seems likely. The men of Archenfeld, we are told, led the van in advance and brought up the rear in retreat. So important was the contribution of these men from Archenfeld that it was necessary to set limits to the amount of service demanded from them: 'For if the sheriff does not go, none of them shall go'.[35]

It may be possible in individual cases to hazard a guess as to the function of a Welshman, e.g. at Eardisley there were 2 slaves to operate the single demesne plough recorded there, and since the place was situated in the midst of a deep wood, we might expect the single Welshman there to carry out some function associated with this woodland. It seems clear that, whatever their functions, some Welshmen were not connected with arable activities: 5 Welshmen were recorded in the Herefordshire folios with no mention of any ploughs.

The renders of Welshmen emphasize the Border nature of the area. Only at Eardisley do we find an exclusively money render. Renders in money and kind are recorded at Clive, Monmouth, King's Caple and Mainoaks, near Huntsham.[36] The remaining renders of Welshmen are in kind only, usually honey, sometimes sheep or other livestock. This situation is the result of the nature of the Saxon occupation of the Welsh areas, and it reflects Welsh tribute renders that were taken over with the land by the Saxon conquerors. This may usefully be compared with the widespread money renders of Welshmen in Shropshire which underwent a later but more complete conquest. The entry for Ewyas Harold is of some interest in that we find that from this land Roger de Laci has 15 sestiers of honey and 15 swine, when the men are there, and he has pleas over them. It seems likely that this *quando homines sunt ibi* provides a clear reference to pastoral nomadism for which the Welsh have been traditionally famed in contrast to the arable activities recorded on lands on the Saxon side of the Border.[37]

Welshmen are not the only inhabitants of Domesday Herefordshire to be recorded by race since 25 Frenchmen are also entered in the folios. Only Cheshire, Hertfordshire, Leicestershire, Shropshire and Worcestershire recorded larger totals. They are spread thinly throughout the shire but appear most numerous in the central area of the shire, mostly along the Lugg and the Wye. Only at Monnington Stradel are 3 recorded in a group but along the western border we find 2 a *Almundestune*.[38] Eleven entries record Frenchmen with their own ploughs while six note them with a share in plough ownership. There were often large numbers of ploughs in operation where Frenchmen were recorded, e.g. 20½ ploughs at Holme Lacy.[39] Thus we find Frenchmen involved in the cultivation

of the lands of the vills, sometimes sharing in plough ownership, and generally established in areas of relatively intense cultivation. It would appear that in the years following 1066 Frenchmen continued to see opportunities for exploitation in Herefordshire, just as before the Conquest the same area had presented opportunities to Normans. On three occasions individual Frenchmen held land: half hides were held at Linton, at Tupsley and at Shelwick.[40] They came as individuals rather than in groups such as seems to have been the case in Leicestershire, where we find many block groupings of Frenchmen. As well as reflecting the opportunities awaiting them in Herefordshire this distribution may have had some military significance. Thinly spread, settled some distance behind the western-most limits of the shire, they may well have had a role to play in rallying and organizing local resistance to Welsh incursions into Herefordshire. Their existence was carefully noted in the Herefordshire folios, and at Moccas we even find the simple statement that a Frenchman was there.[41]

Having now paid some attention to those *milites*, riding men, Welshmen and Frenchmen recorded in the Herefordshire folios, all of whom seem to exhibit some features of special interest, we are left with two broad divisions of society, i.e. the peasantry who make up the bulk of the Domesday population and those individuals who belong to small groups that were only intermittently of interest to the compilers of the Domesday Survey. First, let us deal with the first group, the slaves, *bovarii*, and *ancillae*, the villeins and the bordars. The *bovarii*, as a class, are almost exclusively confined to the Welsh Border region. Of the forty entries recording *bovarii* in Herefordshire twenty-nine record a ratio of 2 *bovarii* or slaves to 1 plough thus making their ploughing functions fairly clear. At Leinthall 6 *liberi bovarii* were recorded.[42] *Bovarii* are not numerous in the western districts of the shire but otherwise exhibit no specially interesting features and are best viewed along with the slaves with whom they are so often entered in relationship to ploughs.

It has long been recognized that the west and south-west was an area of many slaves but the western areas of Herefordshire itself do not record a high percentage of slaves. Nor do the same western areas record many *ancillae*, of whom quite large numbers appear throughout the Herefordshire folios in general. Their appearance of course may simply reflect particular questions asked by some Domesday commissioners and not others. There seems to be little evidence in the Herefordshire folios to suggest any significant connection between slaves and the recovery of waste. Much recovery of waste had taken place in the north-west round Wigmore but the area had a fairly low percentage of slaves. The area of recovery between the Dore and the Wye demonstrates the same point, while in the Domesday hundred of Elsedune which recorded a fairly large number of slaves there had been very little recovery of waste.

Villeins and bordars are found in large numbers throughout the Herefordshire folios, and on occasions we have some reference to their services and renders. At Kingstone the villeins living there in the time of King Edward carried venison

to Hereford and did no other service.[43] At Leominster the villeins ploughed 140 acres of the lord's land and sowed them with their own wheat seed.[44] Again at Leominster each of the villeins who had 10 pigs gave 1 pig for pannage. At Alton Court 12 villeins with 9 ploughs rendered 20 blooms of iron and 8 sestiers of honey.[45] Villeins at Kingsland in Lene hundred gave as customary service 13 shillings and 4 pence.[46] At Martley, now in Worcestershire, the villeins and the bordars paid 12 shillings for fish and fuel.[47] The villeins at Ross paid 18 shillings as revenue,[48] while at Credenhill 2 villeins with a plough rendered 5 shillings.[49] For the waste land at Walford the villeins paid 10 shillings and at Upton Bishop, according to custom, villeins rendered 20 shillings.[50] In Archenfeld, 'From the villein when he dies the king has 1 ox'.[51]

We thus have a wide variety of services and renders that range over plough service, swine, iron and honey renders and money payments. It is difficult to draw general conclusions since these entries are far more likely to record exceptions than general conditions. The late Reginald Lennard warned that, 'Neither Domesday Book nor any document of approximately contemporary date gives a complete account of the obligations of any individual peasant or the means of measuring the relative importance of labour services, money payments and renders in kind for any class in any part of the country'.[52] However, the variety of services and renders found amongst such a small selection of entries as is provided by the Herefordshire folios remains a feature of considerable interest.

It was Mr. Lennard also who noted 'a remarkable regional difference' in plough team statistics. In Herefordshire, Worcestershire and Gloucestershire, holdings appeared to be particularly large: he calculated 4.8 oxen per villein in Herefordshire, as compared with an average of 2.9 oxen per villein.[53] There is some dispute over the interpretation of such figures and we may argue that either the Herefordshire villeins were occupying unusually large holdings or they were carrying out much heavier ploughing duties.[54] Even so, the Herefordshire folios still present examples of villeins holding 1 virgate each: at Linton, Lugwardine, Kingstone, Marcle, Forthampton, now in Gloucestershire, and Martley, Feckenham and Eldersfield in Worcestershire.[55]

The bordars of Herefordshire seem quite well off with an average of 2.8 oxen each. They were distributed over the shire in a fairly uniform pattern, often associated with the demesne and here again it may be that they were responsible for heavy ploughing duties. The entry for Ewyas Harold which recorded 12 bordars who work one day a week[56] attracted the attention of Sir Paul Vinogradoff who used it as a general statement about the nature of bordar service.[57] It can just as easily be contended that the very fact that it was worth noting this feature in Domesday reflected an exceptional, not a normal, duty for bordars. If we are right in suspecting that in general Herefordshire bordars were burdened with quite heavy ploughing duties it seems all the more likely that this entry represents a limit to service, that was not enjoyed by the majority of bordars in the shire. No entries in the Herefordshire folios record bordars who had nothing, as was

sometimes the case in Shropshire and Worcestershire. Entered in the Herefordshire folios, but in fact in Worcestershire, we find, at Suckley, '10 other bordars, poor men (*pauperes*)' which suggests at least a degree of poverty.[58] The only payment is entered at Dilwyn Sollers where 4 bordars rendered 25 pence.[59]

Whatever effect the Welsh Border may, or may not, have had upon Herefordshire society it clearly had done nothing to modify the basic structure of that society. Herefordshire remained predominently a land of slaves, villeins and bordars: 71% of the inhabitants of the Border hundred of Elsedune fall within their ranks, while in another Border hundred, Hezetre, we may reckon 87%. Yet we are still able to find quite a large number of individuals who belonged to the smaller classes often recorded in Domesday. We find 21 beadles, 16 *buri*, the only carpenter in the whole of Domesday Book, 16 coliberts, 19 cottars one of the two Domesday beekeepers, 24 of the 64 smiths of Domesday Book, one of the five millers entered in the Survey, 2 of the three Domesday foresters, 9 swineherds, 43 priests, 44 of the 85 Domesday reeves and the only two cowherds entered in Domesday. Thus we have a rich variety, if not large numbers, and we may well speculate whether the Domesday society of Herefordshire was more varied than elsewhere in England. Perhaps most important of all is the fact that certain estates recorded a wide variety of these classes, and it may well be that such places were some sort of local centres. Weobley which also recorded assart, Holme Lacy, Cowarne, Fownhope on the river Wye, Wellington, Kingstone, Ocle Pychard, Bodenham, and in Worcestershire, Martley, Feckenham, Holloway, Hanley Castle, and Bisley, all warrant attention in this respect.[60] Mostly these are located in the centre and to the east of the shire, and not in the less secure west. Only very rarely is there any direct mention of waste at these places and from this it follows that it was generally upon estates that were fully occupied in the agricultural sense that there were occasions to identify certain functions of a specialized nature, whether they be crafts such as that of the smith, or administrative duties such as those of the reeve. Further, such groupings of these smaller classes generally appear upon vills with a fairly large total population, e.g. Martley with 67 inhabitants, Feckenham with 65 or Fownhope with 55. Royal estates also seem of some significance since in the Herefordshire folios they recorded between them 2 millers, 2 foresters, 2 cowherds, 1 beekeeper, 12 swineherds, 12 priests, 16 reeves, 11 beadles, 2 dairymaids, and 16 coliberts. The estates of Roger de Laci recorded 9 reeves, 6 smiths, 5 priests, 1 cottar, and 1 beadle. Rather curiously the recording of these individuals sometimes corresponds with the entry of slaves and *ancillae* jointly. One wonders why it was possible to enter specialized functions but not the numbers of slaves and the numbers of *ancillae*. At Bisley, for example, we find 8 among the slaves and *ancillae* while a reeve, a beadle, a cowherd, a dairymaid and a forester were all identified. Perhaps the answer lies in a lack of necessity to separate clearly slaves and *ancillae*.

17 *liberi homines* appeared in the Herefordshire folios, to the west as well as to the east of the shire. Even freemen seem to have felt the economic effect of this Border region for we find that 4 freemen at Lagademar in Archenfeld

rendered 4 sestiers of honey and 16 pence as customary rent.[61] Freemen clearly had little place in Herefordshire society in the 11th century, and this is in keeping with the general view of the servile west.[62] 9 *servientes regis* were entered, 8 at Marden and 1 at Lugwardine.[63] There were 7 *hospites* and also men who rendered money for the land on which they had settled, but there is little to be concluded from the very scanty evidence provided in the Herefordshire folios. The suggestion that the *hospites* were assarting woodland[64] is somewhat doubtful since there is no woodland recorded at Letton, where all 7 are entered.[65] In contrast, on every occasion there is specific reference to assart some woodland was recorded: at Marcle, Leominster, Weobley and Fernhill.[66]

An examination of the holdings of tenants-in-chief in Herefordshire shows that in the north-west the holdings of Ralf de Mortemer continue from Shropshire south into our shire. South of these there was a block of estates held by Osbern fitz Richard and then a group of royal manors. A little to the east of these royal manors we find a concentration of holdings in the hands of Roger de Laci while in the central area of the shire the Church of Hereford had extensive holdings which in places extended westward to the Border. Of all the above, only the lands of Roger de Laci show any extensive evidence of sub-letting and his estates are shielded from the Border by the holdings of the King, Osbern fitz Richard and Ralf de Mortemer. Thus in general we have concentrations of lands held in demesne by tenants-in-chief all along the western limits of the shire. Unfortunately the folios do not allow a very clear picture of the situation in Archenfeld. When studied in relation to many other Domesday shires, Herefordshire, like its northern neighbour, Shropshire, displays very concentrated holdings, especially as we begin to approach the western limits.

Finally, a close examination of the western areas of the shire does not reveal any markedly different social features. If we take the recorded population of the hundreds of Hezetre and Elsedune we find 112 villeins, 123 bordars, 56 slaves, 13 *bovarii*, 1 Welshman, no Frenchmen, 17 *homines*, 1 priest, 3 *ancillae*, 11 riding men 3 *liberi homines*, 3 smiths, and 7 *hospites*. The bulk of the population is still made up of villeins, bordars and slaves. It is somewhat surprising that no *milites* appear, nor are any to be found in Archenfeld or the Golden Valley. The large population of villeins, bordars and slaves clearly had to look to its own defence in times of disturbance. The single Welshman recorded in Elsedune hundred is also something of a surprise, since we might well expect a much larger number to appear in these western hundreds. In Mersete hundred in north-west Shropshire 48 Welshmen were recorded. Not surprisingly there was extensive waste in these Herefordshire hundreds, some used for hunting. There seems little evidence in these western districts to suggest any major effects of the proximity of the Border upon the society of the region. The Welsh side of the Border covered by entries in the Herefordshire folios has received extensive treatment from the time of Frederic Seebohm onwards. There is little to be added, the produce renders remain the outstanding features, together with the rather indeterminable nature of the evidence relating to Archenfeld and the Golden Valley.

In these districts we have the blurring of the line dividing Celts from Saxons.

From the above it seems fair to conclude that Herefordshire society did reflect some of the pressures brought to bear by the proximity of the Welsh Border. Holdings tended to be large, services heavy. The small number of *milites* together with the appearance of Frenchmen scattered thinly behind the western-most limits of the frontier suggest that the population was expected to defend itself in times of minor disturbance, such as was endemic in Border life. However, the rich variety of smaller classes may well reflect a flourishing society, facing the challenges of the Border situation and contriving not to be stifled by the overwhelming military threat posed by a hostile frontier.

REFERENCES

[1] This article is based upon part of an unpublished M.A. thesis (1970) deposited with the University of Nottingham. I should like to express my gratitude to Professor D. A. Bullough of the University of Nottingham who kindly read an earlier draft of this article and saved me from a number of errors. All errors both of fact and opinion that remain are of course entirely my own responsibility.

[2] A. T. Bannister, 'The Herefordshire Domesday', *Trans. Woolhope Natur. Fld. Club*, (1904), 318.

[3] C. W. Atkin in H. C. Darby and I. B. Terrett, (Eds.), *Domesday Geography of Midland England*, (1954), 57. There is now a 2nd edition (1971) of this work but unfortunately I was unable to consult it before the completion of this article.

[4] J. H. Round, *The Victoria Histories of the Counties of England, Hereford*, Vol. I, (1908), 263-345.

[5] Lord Rennell of Rodd, *Valley on the March*, (1958).

[6] D. Sylvester, *The Rural Landscape of the Welsh Borderland*, (1969).

[7] R. W. Finn, *The Norman Conquest and its effects on the economy, 1066-1086*, (1971), 142-152.

[8] For example, F. M. Maitland, *Domesday Book and Beyond*, (1897), 8, and 202; P. Vinogradoff, *English Society in the Eleventh Century*, (1908), 77-79; V. H. Galbraith, 'An Episcopal Land Grant of 1085', *English Historical Review*, XLIV, July, (1929), 353-371; C. W. Hollister, *The Military Organization of Norman England*, (1965), 58 and 115-116; S. Harvey, 'The Knight and the Knight's Fee in England', *Past and Present*, No. 49, November, (1970), 343.

[9] 180b2, 181b1, 181b2, 182a1, 182a2, 182b1, 182b2, 186a1, 186a2. (The Record Edition of *Domesday Book*, Volume I, 1783. References are cited by the Folio, the column, and the recto or verso of a leaf).

[10] 180b2, 181b1.

[11] S. Harvey, *op. cit.*, p. 5.

[12] V. H. Galbraith, *op. cit.*

[13] 185a2, 180a2, 183b1, 183a2, 184b2, 187a1.

[14] J. H. Round, *The Victoria Histories of the Counties of England, Worcestershire*, Vol. I, (1901), 248-251, 256-257.

[15] S. Harvey, *op. cit.*, p. 15, and p. 16.

[16] 186a1, 186a2, 182b1.

[17] 182b1.

[18] S. Harvey, *op. cit.*, p. 4.

[19] 255a2.

[20] 182b1, 181b2.

[21] 181b2.

[22] A. T. Bannister, *op. cit.*, pp. 321-322.

[23] Eardisley, 184b2; *Walelege*, 187a1.

[24] No conclusions can be reached on the basis of the Herefordshire evidence alone and it may well be that any complete answer will have to take account of other classes elsewhere in Domesday England which may in fact have more in common with these riding men of the Welsh Border region than at first appeared to be the case.

[25] P. Vinogradoff, *op. cit.*, p. 69; H. Ellis, *A General Introduction to Domesday Book, accompanied by Indexes . . .*, Vol. I, (1833), 72.

[26] 180a1.

[27] 187a2.

[28] 179b1.

[29] 180b1.

[30] P. Vinogradoff, *op. cit.*, p. 71, and especially n. 2.

[31] 179b2.

[32] C. W. Atkin in H. C. Darby and I. B. Terrett, (Eds.), *op. cit.*, p. 57.

[33] 183a2.

[34] 183a2, 184a1, 186a1, 184b2, 180b2, 185b1.

[35] 179a2.

[36] 179b2, 180b2, 181a1.

[37] This traditional view of what G. R. J. Jones has described as 'footloose Celtic cowboys' may need much revision in the light of the studies of Mr. Jones and others. See, for example, G. R. J. Jones, 'The Pattern of Settlement on the Welsh Border', *Agricultural History Review*, 8, (1960), 66-81.

[38] 186a1, 187a2.

[39] 181b2.

[40] 179b1, 182a2.

[41] 182b2.

[42] 183b1.

[43] 179b1. A. T. Bannister gave a somewhat different interpretation based upon his own translation, for which see A. T. Bannister, *op. cit.*, p. 324. I have followed the translation of J. H. Round, for which see V.C.H., Hereford, I, p. 312.

[44] 180a1.

[45] 185b2.

[46] 179b2.

[47] 180b1.

[48] 182a1.

[49] 182b1.

[50] 182a1.

[51] 181a1.

[52] R. Lennard, *Rural England, 1086-1135*, Oxford, (1959), 375.

[53] R. Lennard, 'The Economic Position of the Domesday Villein', *The Economic Journal*, (1946), 256.

[54] E. Miller, *The Abbey and Bishopric of Ely*, (1951), 45-48.

[55] 179b1, 179b2, 180b1, 180b2.

[56] 186a1.

[57] P. Vinogradoff, *op. cit.*, p. 456, n. 5; and also *Villeinage in England*, (1892), 256, n. 4.

[58] 180b2.

[59] 180a2.

[60] 179b1, 180b1, 180b2, 181b2, 184a1, 184b2, 186a2, 187a2.

[61] 181a1.

[62] It may be that by considering *liberi homines* as nothing more than freemen among unfree peasants we are clouding the issue. As with riding men, however, the answers will have to be sought from a wider range of evidence than that presented by the Herefordshire folios.

[63] 179b1.

[64] L. H. Nelson, *The Normans in South Wales, 1070-1171*, Austin, Texas, (1966), 59.

[65] 184b2.

[66] 179b2, 180a1, 184b2.

The Yeld, Pembridge

By R. SHOESMITH

Shortly after members of the Archaeological Research Group surveyed this moated site, the field was completely levelled and the circular ditch filled with material from the mound.

It was possible during the next few days to examine the levelled site and the remains of some structures and few sherds of pottery, indicating a 13th to 14th century date, were found.

THE site (SO 351563) is about half-a-mile north-east of Lyonshall village, and is on gently sloping ground between the main road (A44) from Leominster to Kington and the Curl Brook. (FIG. 1).

In May 1970, the Archaeological Research Group of the Woolhope Club visited the Lyonshall area and made a survey of the moated site. This survey has been used as a base plan to indicate the ditch on FIG. 2.

Late in June of the same year the farmer decided to have this part of the field levelled, and in doing so used the material from the slightly raised mound to fill the ditch, which was in places about six feet deep. The levelling operation

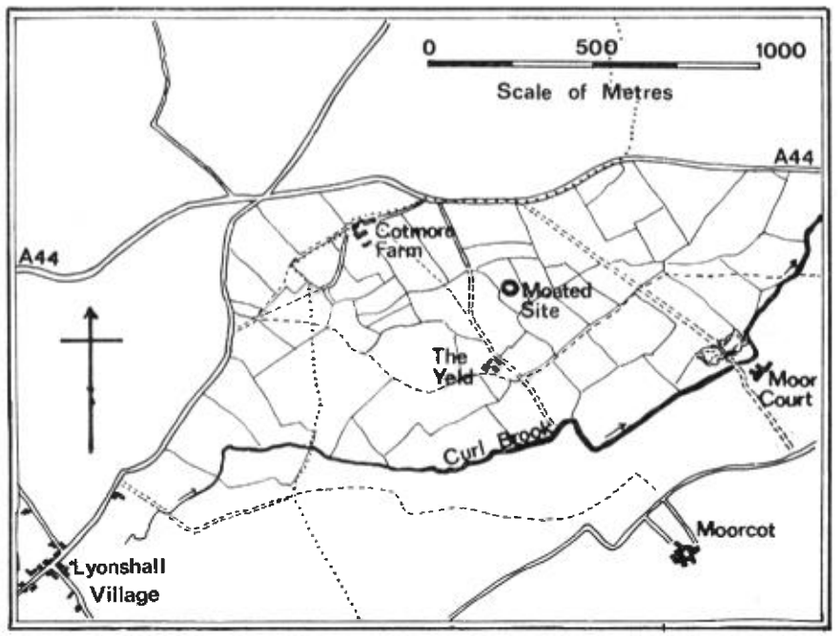


FIG. 1
The Yeld, Pembridge

removed some two feet of soil and clay from around the perimeter of the enclosure, but fortunately removed very little from the central area where there was a sight depression.

A few days later drainage ditches were cut and piped, and the whole field was then ploughed. During this period it was possible to do some surface cleaning,[1] but this had to be restricted to areas where structures were obviously present. It was not possible to completely clear any area down to the natural soil.

The Yeld is mentioned in the *Lay Subsidy Rolls* of 1334, the entry reading:

Penburgge Morecote Helde
Weston Bury Akes Leen
} £6 17s. 4d.

Helde is the Anglo-Saxon for a steep slope or bank, and is frequently found in the modern form Yeld. This mention in the Rolls indicates that a sufficient number of people lived here to contribute to the Lay Subsidy, a tax paid on wealth in the form of moveable goods such as stock and personal belongings, as opposed to land.[2]

THE EXCAVATION (FIG. 2)

The three areas examined were apparent on the surface after the bulldozer had moved the overlying soil. They were all close to the edge of the mound which was the area mainly disturbed.

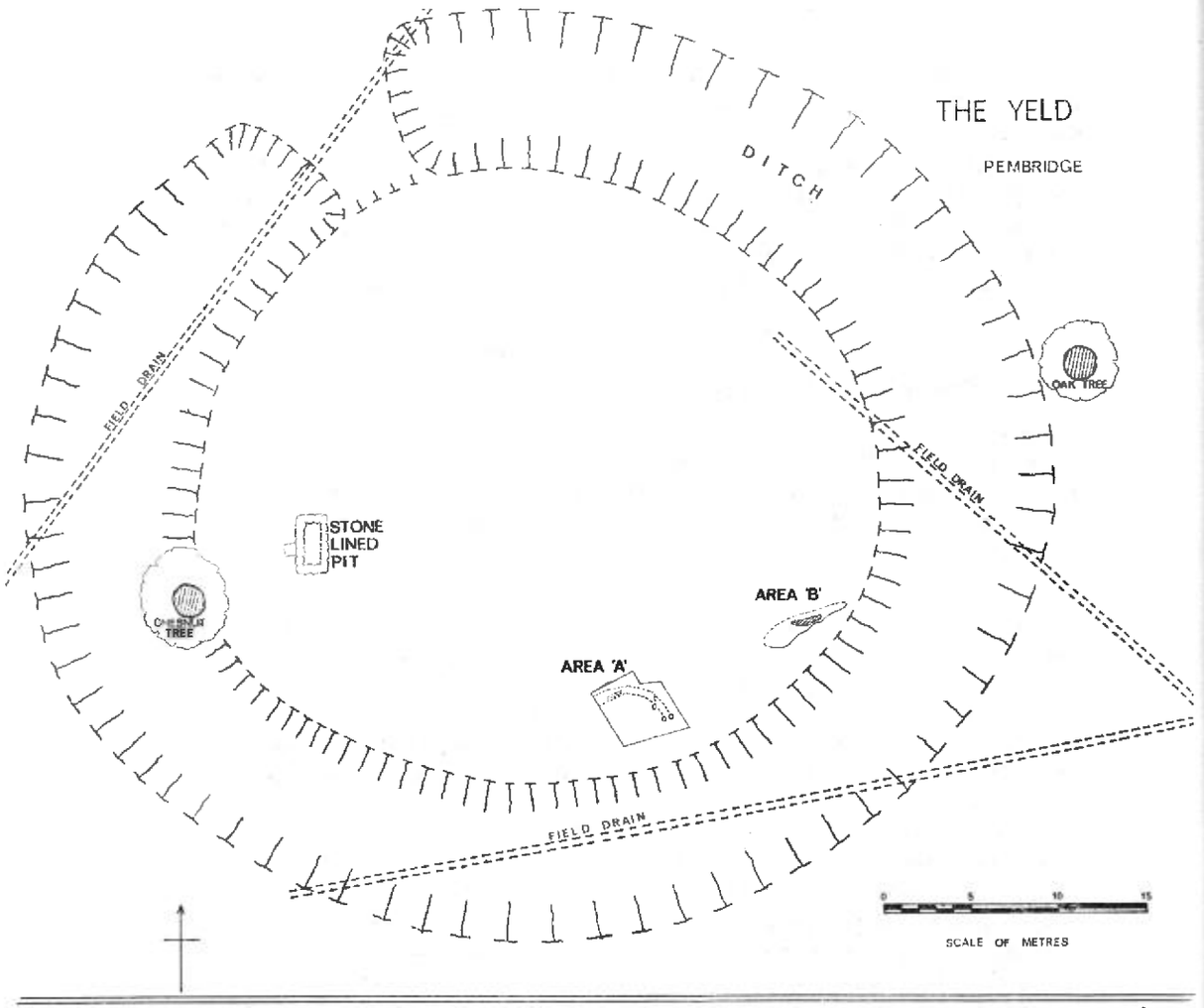
Area 'A'. A collection of loose stones and several sherds of pottery attracted attention to this area directly opposite the presumed entry and close to the ditch. About 15 cms. of soil and debris left by the bulldozer was removed over the main stony area.

A band of darker soil with some charcoal followed the main stony spread (trench 1). This was some 10 cms. deep and widened to the west. At this end, part of the trench had a darker fill with more charcoal and was about 5 cms. deep (trench 2), the fill of the main trench continuing underneath.

At the eastern end of the area, surrounded by stones, two post-holes were apparent. P1 had a dark grey fill with some charcoal, but was only 8 cms. deep. P2, which appeared as a triangular shape on the surface, was 15 cms. deep with a similar fill. Two other possible post-holes, P3 and P4, were noted as plan features, but could not be examined further.

The remains are presumably those of a small hut built on the edge of the ditch and to the rear of the main buildings. Trench 1 appears to be a foundation trench, possibly a post-trench, although trench 2 may indicate that the building was of sleeper-beam construction. The position of the entrance could well be shown by the post-hole positions.

Area 'B'. The bulldozer left a large black smear over this area which was quickly cleaned and examined. The main charcoal area was found to be quite small (1.5 m. x 0.4 m.) and only a few centimetres thick. The three or four stones shown on the plan could well have been left or disturbed by the bulldozer. A sample of the material was examined,[3] and was found to contain charcoal of



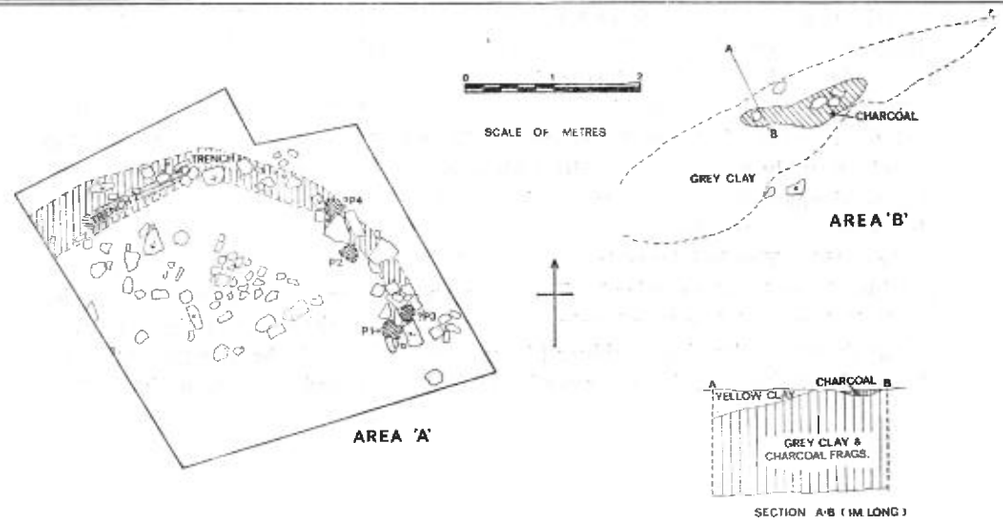


FIG. 2

The Yeld, Pembridge

ash (*Fraxinus* sp.) 5-10 years old. There were also some small pieces of very soft orange coarse pottery with very few grit inclusions, but no apparent burnt clay, suggesting that this was a dump or a once-only fire site.

The area shown surrounding the dense charcoal patch consisted of a grey clay with some charcoal and this was found to go under a yellow clay layer to the north-west, or centre of the mound. A narrow section A-B was cut, which did not reach the inner limit of the grey clay, but showed its depth to be about 50 cms. A sample of the grey clay was examined,[3] and was found to contain large amounts of charcoal fragments and a few pieces of burnt clay. Also in the sample were seeds of elderberry (*Sambucus nigra*) and some unidentifiable beetle remains.

It is suggested that the fill is that of a cess-pit, used occasionally as a dump for fire-ash and eventually sealed by the yellow clay of the site.

The Stone-Lined Pit. The top of this pit and any occupation levels were removed by the bulldozer, but it was possible to clear a half-section of the pit during the course of the excavation. Unfortunately a sudden, very heavy rain-storm filled the pit with water and prevented a plan and section being drawn before the area was completely levelled.

The walling was without mortar and roughly coursed and faced on the inside, the total depth being almost one metre. Slight signs of an external wall foundation abutted on the west side of the pit. The lower part of the pit contained a fine, hard-packed silt, and above this was an irregular dump of rough stones continuing to the existing surface. There were no dateable finds from this area and no ancillary structures could be seen. The silt in the pit was directly on top of a clean clay layer which continued under the walls and appeared to be the natural clay of the site. In the absence of any dateable finds or material, the use remains uncertain.

The excavated area was not sufficient to indicate the arrangement of any of the principal buildings which must have been on the site. The entry was presumably from the north-north-west in an area where the ditch was absent for some seven metres. It would seem likely that the main building(s) faced this entry and the cleared areas were thus to the sides and rear. Although nothing is visible on the surface it is likely, due to the slight depression in the centre of the mound, that some foundations may still be left, although ploughing will probably remove these in time. The area, in common with several other moated sites in the county, is not scheduled as an ancient monument.

THE FINDS (FIG. 3)[4]

All the pottery came from the slight occupation level associated with area 'A'.

1. Fragment of the rim of a cooking pot of a grey fabric becoming brown on the inside. Rather sandy and micaceous material with some large grits.
2. A small piece of an infolded rim of a cooking pot. The angle of the rim is uncertain. Buff fabric and surfaces with medium-sized grits.

3. An abraded sherd of a thumbed base, with the thumb markings only on the side of the vessel. It is of a fine orange fabric and surfaces and has small dark grits, particularly on the outside and base. There are slight signs of a pale green glaze on the base.
4. Several rouletted body sherds, apparently all from the same vessel. This is of a similar fabric to 3 above and could possibly be from the same vessel. A poor quality green glaze disappears on the lower parts of the pot. At least two lines of diagonal, rather coarse, wheel rouletting are present.

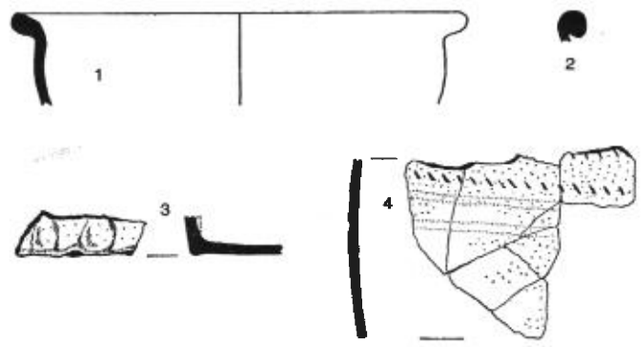


FIG. 3
The Yeld, Pembridge
Medieval pottery (¼)

The two cooking pot rims are of rather individualistic fabrics and it would seem quite likely that these were locally made pots, solely for local use. Other sherds found on the site were too abraded for full identification, but the fabrics suggest a date range within the 13th and 14th centuries.

There were a few sherds of 17th and 18th century wares, unstratified, on the site possibly indicating a further use during that period.

REFERENCES

[1] Most of the clearance work was done by Roger Pye assisted by friends and members of the Archaeological Research Group.
[2] I am indebted to Miss Rosamund Hickling for this information.
[3] The two samples of clay and charcoal were examined by J. S. R. Hood of Trinity College, Dublin.
[4] The finds are deposited in Hereford Museum.

A Border Knight

By JEAN O'DONNELL

IN Much Cowarne Church is the scarred effigy of a knight in chain-mail, with crossed legs; a simple sculpture. In the village it is commonly held to be the tomb of Grimbald Pauncefot who had been a crusader, whose wife had earned fame by giving her dismembered hand as a ransom to the Saracens for her husband's release from captivity.

This would be little more than an interesting legend if it did not highlight the personality of one Grimbald Pauncefot who could have been this crusader and who took such a prominent part in affairs along the Marches during the 2nd half of the 13th century.

Whilst looking for evidence about the Pauncefot family through their lands and possessions in other counties it became obvious that the same legend was closely connected with the church at Hasfield, near Newent in Gloucestershire and with Crickhowell in Breconshire. The tomb of Constance, wife of Grimbald Pauncefot, stood in Hasfield Church for six hundred years before being swept away during some restoration.[1] 'Upon the tomb lay a female figure without her right hand, illustrating the time-honoured story that Constance, having long sought in vain the release of her husband, a captive in the hands of the infidels, was finally told that her request would not be granted unless she sent her right hand, whereupon with a singular courage she ordered it to be cut off.'[2] In the much restored church is a later tomb of Dorothea Pauncefot who died in 1568. It at least shows the family connection with the church.

Duncumb, writing about Much Cowarne Church, in Herefordshire in the early 19th century, quotes the same story and states that both Pauncefots were buried at the east end of the south aisle of Cowarne Church; and an altar monument with their effigies, was erected over them. 'That of Grimbald was cross-legged, and habited after the Norman manner (Pl. II); whilst that of the lady exhibited her left arm couped above the wrist in memory and confirmation of her heroic conduct'. He says that some dispersed fragments of these effigies and monuments remain at present but that they were reported on by Silas Taylor in the mid-17th century, after he had read about the legend in a Harleian manuscript.

'To gainsay the report about it, I diligently viewed the accord which might have been between the two figures; the female laid next the wall of the south aisle on her right side, by which means his left side might be contiguous to her right, the better to answer the figure, also the stump of the woman's arm is somewhat

elevated, as if to attract notice; and the hand and wrist cut off, are carved close to his left side, with the right hand on his armour as if for note'.[3]

The remains noted by these two antiquaries were even more defaced by the molten lead from the spire when the church caught fire in 1840 after being struck by lightning.[4] There is a sketch of the destruction and it seems to have been considerable.

In Crickhowell Church, Breconshire, are more complete tombs of two Pauncefots; both clearly named as Lady Sibylla and Sir Grimbald. Lady Sibylla is fully documented as having built the church of St. Edmund the martyr in 1303 and having been buried there herself.[5] The lady lies on the north side of the chancel, in a straight position under a recess. She wears the flowing dress of the early 14th century with a kerchief over the head and a wimple under the chin. Her feet rest on a small lion, perhaps a symbol of courage but more likely connected with the family coat-of-arms of three lioncells. Her hands are missing but were obviously carved originally in prayer, as the convention of the day demanded. Opposite to her on the south side of the chancel is the tomb of Sir Grimbald (Pl. III), also in a recess but of a completely differing style of sculpture. The effigy is badly broken and disfigured but enough remains to see some detail. The knight is clad in chain-mail with a coif of mail. Over this he wears a linen surcoat. A shield bearing his arms (Pl. I) is carried on his left arm whilst his right hand clasps his sword. The attitude is far less rigid than that of the lady. The legs are missing but seem to be crossed and rested on a similar lion to those of the lady. The cruder carving of the knight points to it having been carved at an earlier date than the lady. As Sir Grimbald died forty years before his wife it seems likely to represent him and not his son who was also Grimbald but who died only twelve years before his mother. This church, too, has the same story attached to it as Much Cowarne and Hasfield, but the only written evidence available is a typescript account in the church. This has a reference to 'A Ballad of the Lovinge Lady' presumably a medieval poem which I have not found.

On comparing the legends associated with the three churches one discrepancy is at once noticeable. In Hasfield and Much Cowarne, the Loving Lady is named as Constance and in Crickhowell, as Sybilla. If one assumes Constance to be the correct identity, attendance at any crusade by a Pauncefot of her time is very unlikely. Evidence of the existence of a lady of that name is given by Robinson when he quotes the 17th-century antiquary, Blount,[6] in his book *Mansions and Manors*. He is estimated to have worked with considerable accuracy, so it seems worthwhile requoting the marriage settlement dated 1253, by which John de Lingen gives to the bridegroom's father, Richard de Pauncefot,

> 'Sexies viginti et decum marcus, duodecim Boves et centum oves', and the said Richard gives to his son Grimbald 'Centum solidatus terrae in manor de Hasfield ad ostium ecclesiae quando ipsum desponsabit'.

In 1255 the manor of Hasfield passed to Grimbald's son Richard, which makes this marriage date rather odd.

Richard De Planco-Pede (grant Hasfield 1248/9)[7]
1253 Grimbald Pauncefot = Constance, d. Sir John de Lingen
Richard Pauncefot = Isabella widow 1266
1254 (grant of Hasfield)
Sir Grimbald Pauncefot = Sibilla, d. Sir Hugh de Turbeville
d. 1287 d. 1326
Sir Grimbald Pauncefot = Clemencia
d. 1314

There are no crusades during the years 1253-1264 when we would have expected this Grimbald Pauncefot to have been the crusader. Henry III, who had taken the cross in the spring of 1250, induced the pope to allow him to postpone any expedition. In 1254 even King Louis went home. He left a small company of troops at Acre under Geoffrey of Sargines and every year he sent a sum of money to maintain them. It was not until 1267 he felt able to prepare for his second crusade.[8] By 1264 the second Grimbald was fighting in the Baron's wars. Henry III did not extend any of his pious hopes to a crusade until 1270 when Prince Edward did sail for Tunis and engage in some hostilities before returning home. It is possible that the second Grimbald joined this expedition as he enjoyed Edward's patronage for most of his later years. Against this he was made Assessor of Subsidy at Henry's Christmas court at Gloucester in 1270[9] when most had departed for the Holy Land. At some time during this decade he was married to the daughter of Sir Hugh de Turbeville, Sibilla.[10]

It seems impossible to point conclusively at either figure as the crusader of the legend. Does the story merely explain the mutilation of the tombs? It is common to find many effigies defaced and mutilated as a short walk round Hereford Cathedral will show; usually a result of the Civil War in the 17th century. The Lady in Crickhowell Church was evidently composed with her hands at prayer, only to lose them later. The other misconception which may have given life to the story, was that a cross-legged knight was necessarily a crusader. The cross-legged attitude covered a very short period and coincided with the 'decorated period' in church architecture. Contemporary fashion did not like the formal straight lines and chose crossed legs and folded arms as a less formal pose. The most striking point about this legend is the consistency of the close tie with the three manors, their churches and the Pauncefots. It does not seem likely that Lady Sibylla was involved as the Turbervilles are fairly well recorded, nor does her effigy in Crickhowell Church suggest any amputation of one hand. This leaves the Lady Constantia and her missing tomb which was so clearly described by Silas Taylor as being in Much Cowarne Church. If she was the wife of the earlier Grimbald Pauncefot, the puzzle of which crusade he joined, remains. If, however, she was the first wife of the militant knight described later, in the 2nd part of the 13th century, and she died soon after this mutilation, possibly without children since the heirs clearly inherit the lands of the Turbervilles, it might serve to explain the long survival of Lady Sibylla after the death

of her husband. It might also explain the presence of two tombs to Sir Grimbald; the one in Much Cowarne being completed at the same time as that of Lady Constantia but never used because the second wife had built a splendid new church on her lands at Crickhowell to house her husband's tomb.

Without more documentary evidence the story has to remain an intriguing puzzle but of great interest as part of village folk-history. It serves to arouse curiosity about the later Grimbald who emerges as a less shadowy figure than that of his predecessor.

SIR GRIMBALD PAUNCEFOT AND THE WELSH BORDER

The ancestors of Sir Grimbald Pauncefot are first recorded in Domesday Book, where Bernard Pancevolt is named as tenant 'in capite' of one manor in Wiltshire and several manors in Somersetshire and Dorsetshire. The surname is derived from a place-name and is latinised as 'De Pede Planco' (of the splay foot).[11] The family spread to Compton-Pauncefoot in Somerset and Hasfield in Gloucestershire.[12] Humfrid Pauncevot and Eustace Pauncefot were tenants of Henry de Newmarch in 1166 where the land seems to have been at Hasfield[13] in Gloucestershire. Further mention of this manor is in the records of the Gloucester Corporation.

In 1121 'Coura' was granted by Henry I to Miles of Gloucester, earl of Hereford, as part of the marriage portion of his wife, Sibyl, daughter of Bernard de Neufmarche and Much Cowarne was always afterwards held of the honour of Brecknock.[14] As tenants of Newmarch it would seem likely that the Pauncefot connection with the manor of Cowarne begins at this time. It is mentioned as part of the old feoff of Brecknock in 1242.

'In Magna Coerna vj. hyde et dimidia unde Elena Pauncefot medietatum de heridibus Willielmi de Brause de veteri feffamento de Brekinnoc, et Thomas de Avenbri' alteram medietatum de honore de Breckinoc eodem modo'.[15] Galbraith suggests that the manor of Cowarne was part of the holding's of a bishop of Hereford's knight, Hugh de Hasela, mentioned in 1086 as having an uncertain part of Coura, with Hasle, near Pixley.[16] Although the connection seems tenuous, in Bishop Swinfield's register 1286 is entered,

'Grymbald Pancefot tenet de tenements dela Hasels pro dimidio feodo'. Before this Richard Pauncefot is mentioned in 1211 in the bishop's list of knights as holding a fee with Jordan of Wick, in Hasle and Madrefield. It seems likely that Coura was also passed on as part of the estate from Hugh de Hasela, and that there was a later consolidation by the addition of extra land from Newmarch.[17]

By the beginning of the 13th century the family had extended their estates to include Bentley in Worcestershire, while by 1212 it was known as Bentley Pauncefot. There was a grant of land by a Reginald Pauncevot to the monks of Worcester[18] of land outside Droitwich at *c.* 1200 and the advowson of St. Mary's in Droitwich also belonged to him. He was probably a younger son of Richard who held Bentley in 1185.[19] At the end of the 13th century had been added the manor of Hildrisham, Cambridgeshire, the manor of Crickhowell,

Brecknockshire, a quarter of a knight's fee in Boxe, Brideslowe, Gloucestershire.

Into this landed family was born the grandson of Grimbald Pauncefot with the same name and with estates to equip him as knight. His rise to fame and fortune began with the Baron's wars and the de Montfort rebellion in 1263. The warring factions along the Marches changed their allegiance from one battle to the next, but Robert of Gloucester[20] tells how Grimbald Pauncefot defended Gloucester from an attack by Prince Edward at Easter 1264 when he was allied with Simon de Montfort and Gilbert de Clare. He was captured at Northampton but must have been released, possibly after the battle of Lewes when de Montfort's triumphant victory would have secured the release of his supporters. After Prince Edward's escape from Hereford Castle in May 1265, he rallied support from Mortimer, Clifford and other Marcher lords and attacked Gloucester. Simon de Montfort spent nearly a month ravaging the lands of de Clare, earl of Gloucester who had turned to the Royal cause. Once more the castle was held by Grimbald Pauncefot against attack by 'stronge ginnes' after the warders had escaped; and held out for three weeks hoping de Montford would deliver them.[21] To end this siege, Prince Edward offered him arms, horses and a knighthood for his capitulation, and so he surrendered and joined the king. Robert of Gloucester comments dolefully,

'but there was never ever of him so good word as before'.

After the defeat of de Montfort at the Battle of Evesham the newly knighted Sir Grimbald was granted 'a capital messuage in a street off the Thames near Billingsgate, late of William de Cornere', as soon as October of 1265.[22] Henry III was particularly incensed against the citizens of London for their part in the rebellion and confiscated their property which he gave to his son, Edward.

No doubt Sir Grimbald received it as a grant of favour. In spite of this, he appears to have been concerned in a lesser revolt in June 1267, when the earl of Gloucester occupied London in order to force the king into giving the defeated barons, who had mostly been disinherited and deprived of their lands, more favourable terms. The trouble was settled and by the end of the summer, most disputes were over. In 1268 de Pauncefot was pardoned for his part in the disturbances.

At the Christmas Court at Gloucester in 1270, he was made 'Assessor of Subsidy',[23] a profitable office. The part he may have played in the crusade undertaken by Prince Edward has already been mentioned. He was made custos of La Musardere Manor in November 1272,[24] directly after the death of the king, and with the accession of Edward his fortunes and power increased.

The tide of events subsequently kept Sir Grimbald in Wales and the Marches, and by 1275 he was Commander-in-Wales.[25] There had been constant disputes between Prince Llywelyn and Humphrey de Bohun,[26] who had become earl of Hereford, on the death of his grandfather in 1275, over the lordship of Brecknock which the latter had inherited from his mother.[27] De Pauncefot held lands under this lordship and would have been vitally involved in hostilities along the Usk valley. The close involvement of Pauncefot with Brecon can also be explained

by his marriage at an unknown date, to Sibyl, daughter of Hugh de Turberville. On this marriage they were jointly enfeoffed by Hugh de Turberville[28] for the castle and manor of Crickhowell[29] which remained with the Pauncefots for generations. By 1275 Edward began his own quarrel with Llywelyn and began to treat de Bohun as Lord of Brecknock. In September Llywelyn complained to Pope Gregory that Edward was still keeping Welsh lands against the Treaty of Montgomery. Edward, after carrying off Llywelyn's proxy bride, Eleanor de Montford, to Windsor, spent £23,000 on a Welsh campaign to subdue him. By 1277, Llywelyn had agreed to the terms of the Treaty of Conway.[30]

During the period of calm along the Welsh border until the next uprising in Wales in March 1282, the records reveal continuous favours given by the king to Sir Grimbald. In 1278 he received three bucks from Kynfare forest and the next year twelve oaks from Kanok forest.[31] He was granted £200 from a fine on the marriage of the heir to Henry de Penebrugge in the same year.[32] It seems possible that he was constable of Grosmont castle at this time when he put his seal to an inquisition document which indicted Reynold Fitzpeter of Dinas for cattle stealing from the manor of Llanthony Abbey, together with the seals of Bergevene and Ewyas Harold.[33]

By the end of 1281 he was custos of Dene Forest and constable of St. Briavel's Castle, and he continued in this office until his death. This important office was usually held by a man of rank and substance. Earlier constables included Thomas de Clare, brother of the earl of Gloucester, Roger Mortimer and William Beauchamp, earl of Warwick. The constable held his appointment during the pleasure of the crown and he appointed all subordinate officers. There was a farm rent for the office which was £160 in 1287 on Grimbald Pauncefot's death.[34] In return there were many privileges. Among the issues he received were wind-thrown wood, lop and top of oaks granted by the king or felled to his use; occasionally wind-thrown trees, pannage and nuts. He or his deputy helped to guard the beasts of the forest, to deal with criminals, and to take over woods when they were wasted. Sales and enclosures were entrusted to him and he delivered supplies of venison, timber and shingles to the king.

St. Briavels was also a great arsenal and it seems a fortunate chance that Sir Grimbald was in charge at the time of Llywelyn's last uprising in 1282. From 1223-1293 at least half a million quarrels for cross-bows were made at St. Briavels.[35] In some years, 25,000 were made from the raw materials of Dene, wood and iron. There was a claim by the heir of Sir Grimbald after his death, for the costs of supplying armaments for the Welsh war.

'10 shillings for making 500 quarrels and 15 shillings for carriage of the same in 1283 to Rhuddlan, being 6 days at 6d. a day for each hundred, 10 marks expended in making 10,000 quarrels, and for the carriage of the same to Rhuddlan'. Sir Grimbald as warden, was ordered to select 100 woodcutters and charcoal burners . . .[36] 'Of the best, most powerful agile and most used of these trades', and to send them to Brecknock and give them their wages. They were to clear the passes in Wales of wood and undergrowth. This was in June 1282.

In the following month there was a repeat request for 100 most powerful woodcutters. Each was ordered to have a good stronge axe or hatchet to fell large or small trees. They were to be sent to Chester and their pay was to be 3d. a day. A similar order was given in December. By this time Sir Grimbald was actively engaged in hostilities in Wales. He was staying continuously with Roger Mortimer in the defence of the county of Montgomery.[37] In October he took over from the now deceased Mortimer and was in charge of all the king's castles in Wales with the aid of Bogo de Knovill. In spite of Llywelyn's death at Builth in December, the Welsh struggle continued under his brother David, while Edward was importing men from Gascony to fight. At this time, in March 1283, Grimbald Pauncefot was ordered to send an additional supply of 100 foot soldiers from his manor of Crickhowell. By the end of that year, David had been caught and executed for treason. With his death Welsh resistance was at an end and Edward firmly established English rule. By the end of 1283, castles were being built at Conway and Caernarvon, the latter being the birthplace of the Anglo-Norman new Prince of Wales; the latest addition to the king's family in 1284.

At this time the duties of constable of St. Briavels were still with Sir Grimbald and he was busy assessing waste, viewing weirs and repairing them and inspecting the fishing nets in the rivers Severn and Wye.[38] He was granted a licence to take kids in Dean Forest and to sell underwood to the value of £25. He was also Commander-of-Array in Monmouth and the Welsh Marches.[39] After Easter, the continuing favour of the king and queen was shown by a delivery of twenty casks of wine from the king to him and to his father-in-law, and a further four from the queen.[40] He also had gifts of 12 oaks from the forest and four does. His debts of £117 0s. 2½d. were settled by the king with a grant of £120 from Jewry, but by 1285 he and another were owing 500 marks in Hereford.[41] It became apparent after his death that he had never paid his farm rent for St. Briavels for all the years of his office so it would seem that he was not adept at financial matters.[42] Additional offices were added to those he already held and they included sheriff of the liberty of Malvern, and justice of gaol delivery in Bath.[43] One final gift from the king is recorded before his death in 1287; that of two bucks from Dean Forest. That he was held in esteem by Edward is clearly shown by his career and favour. The latter continued to be extended to the family throughout the king's life. His widow was granted livery of the lands of Crickhowell and given the freedom to marry whom she pleased. She was still holding the lands in 1310[44] as four knight's fees by gift of John Fitz Reginald, and in spite of living a further thirty-nine years she never remarried. She died in 1326 and was buried in her church that she had endowed and built in 1303.

The manor of Crickhowell had been an important acquisition to the Pauncefot estates. The castle, manor and town were restored to Lady Sibylla in 1322[45] after she had proved herself loyal to Edward II in his troubles and when her son, Sir Emeric, died in 1332 he held the castle and manor of Crickhowell, the manor of Great Cowarne, Bentley Pauncefot and Hasfield. At this time the manor of

Crickhowell included three water-mills, toll of the market, a fishery in the Usk and a custom called *Commorth Calan Mai*, which was a tribute of cattle payable to the lord by his Welsh tenants on alternate years in May.[46]

There is little detail of the Much Cowarne Manor but the market requested by Richard Pauncefot in 1255,[47] and confirmed to Sir Grimbald in 1281, was reconfirmed in 1431 to Sir John Pauncefot. This shows that it must have thrived for two hundred years and provided income from tolls for the family. Seven miles from both Bromyard and Hereford, the township was within a good walking area for a market and an annual fair. In 1467 mention was made of Paunce fottes Court in Munsley, Herefordshire; which still exists some five miles from Much Cowarne.

In the reign of Henry VIII, John Pauncefot is named as of Hasfield, Sutton (Somerset) Cowarne, Bentley and London. After 450 years of succession, the estates were sold in 1598 by Richard Pauncefot. At this time Hasfield Manor contained also twenty messuages, common pasture and £23 rent in Hasfield, Corse Wood and Corse Lawn, and free fishery in the water of Severn, view of frankpledge in Hasfield and the advowson of Hasfield Church.[48] The site of the Pauncefot's Court is there with remains of a moat and a large gateway. The village shows signs of once greater size and of strip fields. The church is completely denuded by restoration except for a 16th-century memorial to Dorothy Pauncefot showing the family arms. Cowarne was sold to the Sculls, long resident in Cowarne and previously connected with the family estates. When they bought the land the old Pauncefot Court stood on a mound to the S.E. of the church and they rebuilt it. It is now a rather shabby stone farmhouse with outbuildings obscuring both the motte and the overgrown roadways to the house and church. Here, the church of St. Mary, has many interesting features including a demolished north aisle which seems to show a contraction of the medieval population. Its links with the Pauncefots include the 'crusader' tomb and a chantry chapel beneath which is supposed the family vault, and a 'lamp' field as an endowment for this chapel. The family did remain in the vicinity, at Clater Park, Bromyard, as a memorial to Laetitia,[49] wife of Robert Pauncefot who died 1753, shows. This is in St. Peter's Church, Bromyard. The heraldic shield contains the three lioncels of the Pauncefots.

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[1] J. N. Langston, 'Old Catholic Families of Gloucestershire', *Trans. Bristol Gloucestershire Archaeol. Soc.*, LXXI (1952).
[2] Burke's, *Commoners'* III.
[3] It was the right hand that was amputated according to Burke.
[4] Sketch in Pilley Collection, Hereford City Library and in St. Mary's Church, 1850 E. F. Walker.
[5] *Cal. Fine Rolls.*
[6] The original mss. by Blount were lost after the sale of Belmont library and so it is difficult to know his source for this settlement. No trace can be found by P.R.O. or the National Library of Wales, in the *Close Rolls, Patent Rolls, Charter Rolls* or *Inq. P.M.*
[7] J. N. Langston, *op. cit.*
[8] S. Runciman, *A History of the Crusades*, III.
[9] *Knights of Edward I*, Harl. Soc. IV.

[10] One of the Turbervilles, Sir Robert, has protection for four years as a Crusader, May 1270. *Knights of Edward I.*
[11] J. N. Langston, *op. cit.*
[12] *Ibid.*
[13] *Feudal Aids*, (1303).
[14] J. Round, *Ancient Charters* A.C.8 and D. Walker, 'Miles of Gloucester', *Trans. Bristol Gloucestershire Archaeol. Soc.*, LXXVII.
[15] *Book of Knights' Fees.* (1242-43).
[16] Tait and Galbraith, *Herefordshire Domesday*, 93, 114.
[17] The connection with William de Braose is from marriage with Bertha, d. of Miles and Sibyl de Neumarche. *Cartulary of St. Peters, Glos.*, i, 314, no. 281. In 1088 Bernard de Neumarche gave the advowson, glebe and tithes of Cowarne Magna and one hyde called Bache to the monks of Gloucester.
[18] *Worcester Cartulary*, no. 180, p. 97.
[19] W. H. Duingham, *Place-names of Worcestershire*, 17.
[20] *Robert of Gloucester's Metrical Chronicle*, 542 and 555.
[21] *Royal Letters of Henry III* (June 15-28 1265) G. de Morle to Henry de Maudley
'Prince Edward and William de Valence are besieging Gloucester. The King and Simon de Montfort are at Hereford'.
[22] *Knights of Edward I.*
[23] *Cal. Pat. Rolls.*
[24] *Knights of Edward I.*
[25] *Cal. Pat. Rolls.* (Nov. 24 1275).
[26] *Cal. Inq. P.M.*
[27] J. E. Lloyd, *A History of Wales*, 752.
[28] Sir Hugh Turberville, Lord of Ystrad Yw Isaf, Crughywel was the principal tenant in the Lordship of Brecknock. He was constable of Carmarthen and Cardigan Castles and of Hereford in 1263. He was sheriff of Hereford from 1264-65 and was closely involved with the de Montfort rebellion. He followed the Marcher Lords in their allegiances. His career closely matched de Pauncefot's during the Welsh Wars and both were Commanders in Wales and the Marches. Grimbald granted Hasfield to him for life.
[29] *Cal. Inq. P.M.*
[30] J. Lloyd *op. cit.*
[31] *Knights of Edward I.*
[32] & [33] *Cal. Inq. Misc.*, File 36 (25).
[34] C. E. Hart, *Royal Forest*, 17.
[35] *Ibid*, 50 & appendix V, 272.
[36] *Ibid*, 50 & appendix V, 272.
[37] *Knights of Edward I.*
[38] & [39] *Ibid.*
[40] J. Round, *Ancient Deeds*, C.3045.
[41] *Cal. Close Rolls.*
[42] *Knights of Edward I.*
[43] *Knights of Edward I.*
[44] *Cal. Inq. P.M.*, V, 270.
[45] *Cal. Close Rolls.*
[46] *Cal. Charter Rolls*, (1255).
Weekly market on Thursdays and yearly fair on the feast of St. Michael.
[47] Sir J. Maclean, 'Pedes Finium 1588-1612', *Trans. B. & G. A. S.*, XVII.
[48] J N. Langston, *op. cit.*
[49] Memorial reads,
'To the memory of Laetitia Pauncefot Daughter of Dr. George Howe, Relict of Robert Pauncefot Esq. of Clater Park in County of Hereford. One of the Council to his Present Majesty George IInd.,
Attorney General to His Royal Highness, Frederick Prince of Wales, & Steward to the Manors of Kennington & Berkhamstead. d. June 28th 1753. Erected by her son'.

The Local Influence of Hereford Cathedral in the Decorated Period

By R. K. MORRIS

THIS article and the ones to follow are based on research carried out mainly between 1966 and 1969 for a doctoral thesis, a bound copy of which is now in Hereford Cathedral Library, thanks to the kindness of Miss Penelope Morgan and her father, F. C. Morgan.[1] The research attempted to reconstruct the activities of workshops and masons in the Decorated period by recording and comparing mouldings and other technical minutiae, details which should, according to Harvey, 'reveal the hand of the architect much as brushwork does that of the painter'.[2] Now that the initial stages of my investigations are over, I would confess that I am less convinced than before about the complete validity of this generally accepted principle of stylistic art history. The idea that master masons have definite personal styles which allow us to trace their movements from one building to another needs considerably more examination. Accordingly, a little less emphasis has been placed on this aspect in these articles than in the thesis, though it seems to remain a valid criteria in distinguishing certain local masons (e.g. the 'Madley Mason'). I should also confess at the outset that I am not a seasoned historian of Herefordshire, and that the county was just one amongst several to which I devoted my attentions. There will almost certainly be gaps in my knowledge of local resources and buildings, though this is compensated by the discovery of detailed stylistic links between certain of the county's parish churches and other major centres such as Tewkesbury, Gloucester, Wells, Bristol, Lichfield, the Court at Westminster, East Anglia, and even, I believe, as far afield as northern Italy. Above all, it is these connexions that constitute the major contribution of this research, and I hope that their discovery is some return for all the help and time generously afforded me by many vicars, vergers, and other church authorities in the county.

The essential background to the architecture of the county's parish churches in the Decorated period starts with the remodelling of the cathedral aisles between *c.*1290 and *c.*1310. With the crossing tower and west tower that followed almost immediately (begun *c.*1310/15), these works finally gave the cathedral a recognizably Gothic appearance. Both schemes were initiated by Bishop Swinfield (1282-1317), and may be associated with the cult of relics of his predecessor and former master, St. Thomas Cantilupe. The large four-light windows distributed evenly throughout the aisles brought a new sense of light to the old Norman building, just as Cantilupe's saintly life brought spiritual illumination to men's souls. The two great towers proclaimed the greatness of the shrine to the outside world and, to the pilgrim approaching on a sunny day,

their ornate, shimmering forms must have seemed like the towers of some celestial city. Stylistically, both schemes are strongly indebted to slightly earlier works at Wells, on the chapel and hall of the bishop's palace (*c.*1280-95) and on the chapter house (1286-*c.*1306).[3] In fact, the crossing tower seems to be the earliest surviving example of elaborate ballflower decoration in the west after the chapter house itself, and the stylistic details suggest that it might be by a Wells designer who may have become the master mason at Hereford during the later stages of the aisles' remodelling (*c.*1307-10). The Hereford towers in their turn directly influenced the design of two other ostentatious ballflower works, the south nave aisle at Gloucester (begun 1318) and especially the famous tower and spire of Salisbury (normally dated shortly after 1330); the detail of the latter is so close to that at Hereford that again one suspects the same designer.[4]

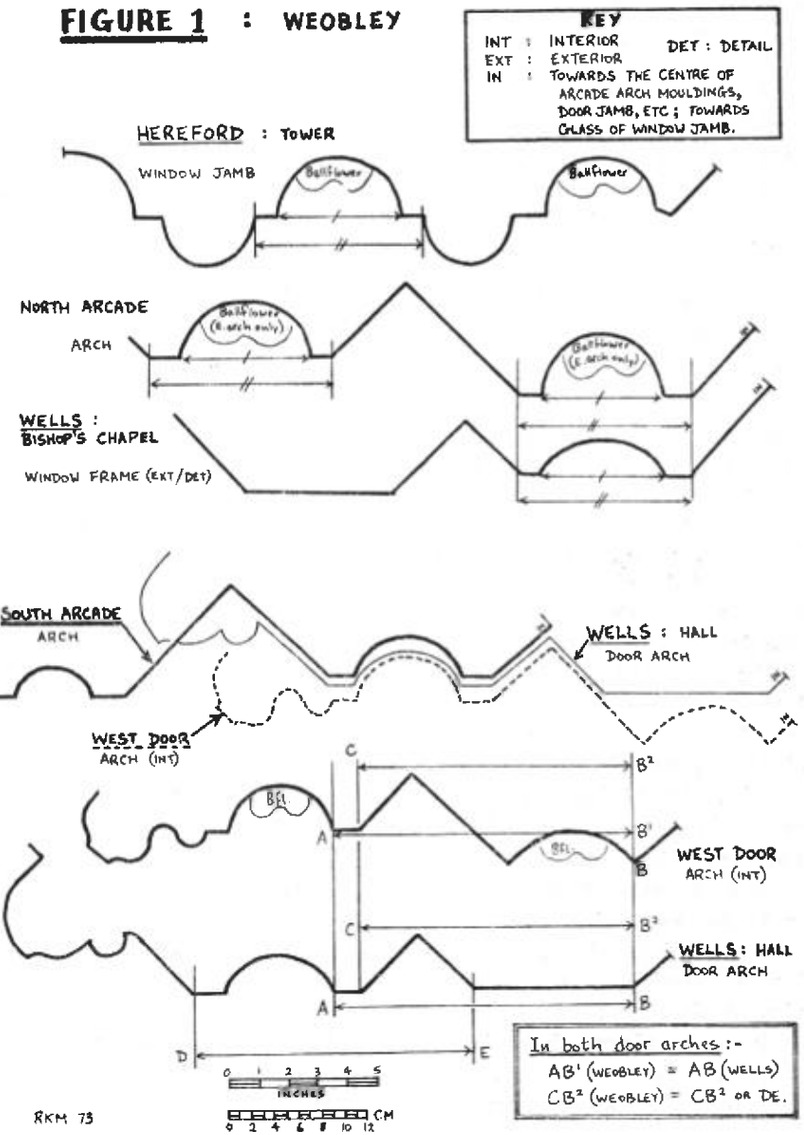
In the meantime, other important works were in progress in the west midlands and south-west, of which Tewkesbury is the most relevant to works in the county in the 1320's and 30's. The remodelling of this great Norman abbey, undertaken around 1320, is apparently a local work in much of its detail, having affinities in its mouldings with other works in northern Gloucestershire and south Worcestershire—the Hailes Abbey ruins, Evesham Abbey (chapter house), Pershore (choir and south transept vaults), and Worcester (north nave aisle). In addition, with the south aisle at Gloucester, it is the centre of a flourishing local school which used ballflower to a greater or lesser degree, and which worked at such churches as Badgeworth, Bishops Cleeve, and Cheltenham. The ballflower work at Tewkesbury is related stylistically to the Hereford crossing tower, and these churches also have associations with Herefordshire, as will be shown. It is important to remember too that Tewkesbury shows a familiarity with the rebuilding of the east ends of St. Augustine's, Bristol, and of Wells; and, outside the local context, that a Court mason seems to have been involved in some parts of the design—which is to be expected, as the patron of the work was the royal favourite, Hugh le Despenser the younger.[5] From the mid-1330's on, the centres influential on church-building in Herefordshire begin to change. The major accepted centre of Court influence in the west, the royal remodelling of Gloucester choir around the body of Edward II, comes to the fore, in conjunction particularly with other Court-influenced work in the east end of Lichfield, and with the considerable works under way in the nave and cloister precinct of Worcester.

This article deals with the local works which are most usually associated with the ballflower style of the cathedral tower[6]—Weobley nave, Leominster south aisle, Ludlow north aisle, Marden chancel, and St. Katherine's Chapel at Ledbury —and is therefore primarily concerned with the first phase of the sequence of influences described above. It will demonstrate how the earlier of these works are heavily dependent on the cathedral workshop (and, through it, on Wells), but how this predominence is gradually modified by the growing influence of the Tewkesbury workshop, and eventually, in the latest work (Ledbury), by features derived from a school of design apparently centred on Lichfield.

WEOBLEY

The rebuilding of the nave at Weobley marks the continuation of the Decorated remodelling of the parish church, which had begun in the north transept around the turn of the century. The work of this campaign consists of the north and south arcades of five bays, with the clerestory and chancel arch, and the elaborate west door with ballflower ornament. The eastern arch of the north arcade is

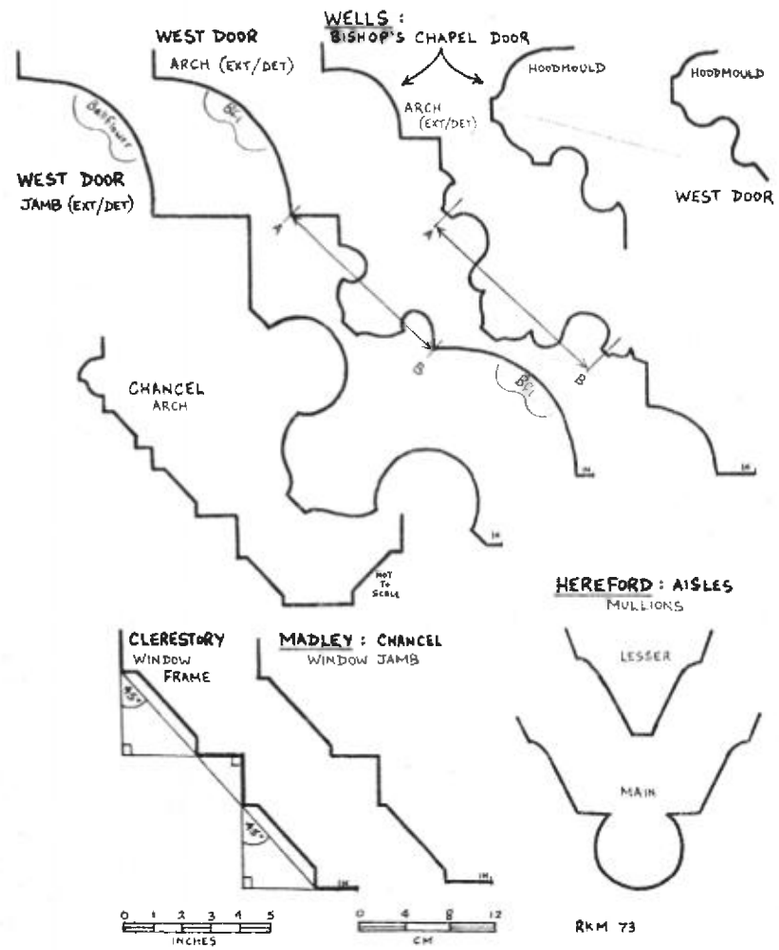
FIGURE 1 : WEOBLEY



also decorated with ballflower to distinguish it as the entrance to the transept, which served as the Lady Chapel.

Naturally it is the ballflower that most clearly identifies the work with the cathedral workshop, and the treatment of the ornament is virtually identical to that on the cathedral tomb recesses of Precentor Swinfield and Bishop Losinga. Nonetheless, there are more specific connexions as well. For example, the moulding formations of the arcade arches and of the interior frame of the west door, which are based on large hollows flanked by broad fillets, are very close in design to the mullions and window jambs of the cathedral tower, and some of the

FIGURE 2 : WEOBLEY



dimensions are identical (FIG. 1). Also, in the north arcade, the rather unusual way in which the arches grow out of vertical pieces above the capitals (instead of directly from the capitals), together with the employment of headstops and hoodmoulds, seems to be derived from the similar treatment of the row of posthumous tomb recesses to bishops in the south choir aisle of the cathedral.[7]

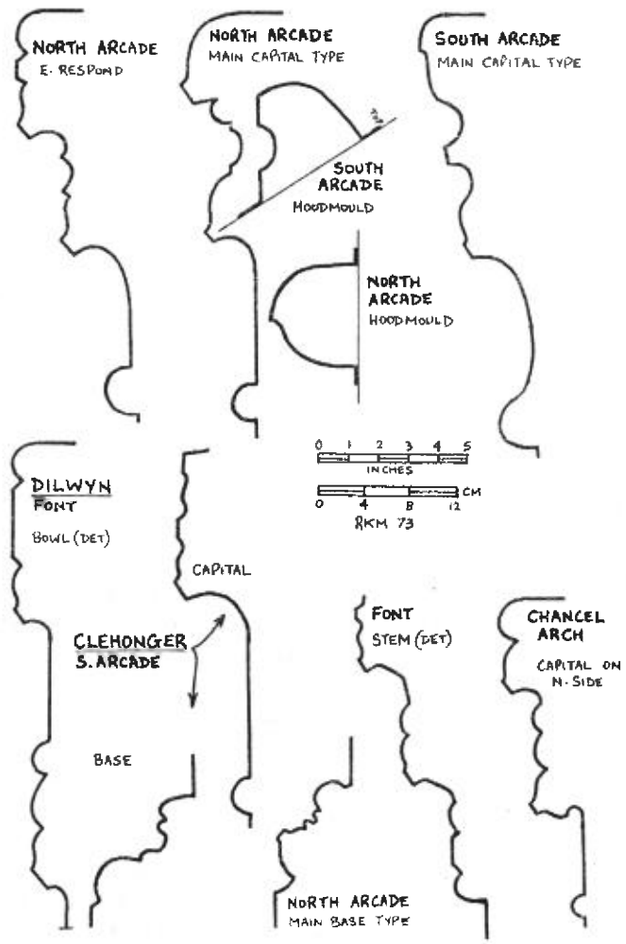
At the same time, certain elements of the moulding formations in the arcades and west door can be traced back to Bishop Burnell's chapel and hall at Wells, and include precise dimensional similarities, as demonstrated in FIG. 1. In addition, the mouldings of the exterior arches of the west door and of the Wells chapel door share a similar overall design—a roll and fillet, undercut by two deep hollows which lead into two more fillets, and flanked at a distance by hollow chamfers: the distance AB is the same in both (FIG. 2). The hoodmould is a simplified version of that over the chapel door, and may be derived from it too.

The above sources suggest that the mason[8] in charge of the work had previously been employed in the cathedral workshop, particularly in the first ten or fifteen years of the 14th century. The preference for features derived ultimately from the bishop's palace at Wells indicates his familiarity with the designs for the Hereford Cathedral aisles, which were much indebted to the detail of the bishop's hall and chapel. The influence from Wells increased in the later phase of the remodelling of the cathedral aisles, which seems to incorporate the choir aisles and north-east transept, tentatively dated *c.* 1307-10,[9] and it is from this area that come most of Weobley's direct borrowings from the cathedral. In particular, there is the parallel with the posthumous tombs to earlier bishops in the choir aisles, and the use of ballflower, which seems to appear first in the cathedral in the Bishop Losinga tomb and the recess ascribed to Precentor Swinfield (*c.* 1311). In addition, the mouldings indicate a familiarity with the central tower, which was apparently begun immediately after the remodelling of the aisles was completed.

The capitals and bases of the arcades are not, however, in the idiom of the cathedral workshop, and suggest that at least one local mason was involved in the work besides the cathedral-trained mason. The style is very close to that of the 'Dilwyn Mason', apparently a sort of local builder/contractor, to whom I would ascribe the remodelling of the nave of Dilwyn parish church at about the turn of the century, and possibly that of Clehonger a little earlier. His repertoire of forms is predominantly out-of-date, deriving from such sources as Bishop Aquablanca's north transept at the cathedral (*c.*1260-75) and the cathedral choir clerestory of the 1240's, and even having an affinity with the fussy capitals and bases current around 1200. These styles, fashionable in their own times, seem to survive for long periods in lesser works away from the main centres, and this is why I would term this mason 'local' in contrast to the main mason at Weobley, who employs features from the most recent works by the cathedral workshop. FIG. 3 illustrates the similarities between the Weobley capitals and bases and some of the Dilwyn Mason's work. Those of the north arcade are more obviously

linked to his style, but there are also related features in the south arcade (e.g. the single fillet placed prominently in the middle of a moulding formation); and the fact that the main capital type of the south arcade appears again slightly later in the neighbouring church at Pembridge, used in conjunction with bases related in design to the mouldings of the north arcade bases and capitals, suggests that they may all be the work of one mason. In addition, the mouldings of the font at Weobley are clearly by this hand,[10] and perhaps the hoodmould over the south

FIGURE 3 : WEOBLEY CAPITALS AND BASES



arcade is also by him. It is different to the scroll design of that over the north arcade (a design common in the cathedral workshop in the early 14th century), and its use of fillets canted downward and the tiny hollow moulding relate it to the north arcade capitals (FIG. 3).

Certain details of the nave clerestory provide useful clues for dating. The tracery of two of the windows on the north side consists of a small and rather heavily rendered trefoil over two lights, a design which derives its ultimate inspiration from the much larger trefoil patterns of the tracery in the cathedral aisles. But the closest parallel to this design in the county is to be found in the chancel at Madley, another stylistic offshoot of the cathedral workshop, where the dominant tracery type also consists of a small, awkwardly executed trefoil over two lights. Documentary evidence suggests that work was under way on the chancel around 1318.[11] The moulding used for the mullions and interior jambs of the clerestory windows at Weobley, and also for the chancel arch there, is the sunken chamfer, a fairly rare moulding which makes its first appearance in the west towards 1320 in the works associated with the cathedral workshop.[12] There are several instances of its use in the east end of Tewkesbury, which seems to have been designed *c.*1318-20 (e.g. the ribs of the ambulatory and chapel vaults), but again the closest parallels are to be found in the chancel windows at Madley (FIG. 2). The dimensions of the moulding formation are identical in both instances, and, in fact, it is only the deeper carving at Weobley which suggests that the two were executed by different masons. These similarities infer that the clerestory was probably under construction around *c.*1318-20, which in turn implies that work began on the lower parts of the nave about 1315 or earlier. It is therefore possible that the nave was complete a little while before 1325, the date generally taken to mark the termination of the work because three altars were consecrated in the church in that year.[13]

LEOMINSTER

The south aisle of Leominster parish church is the most monumental of all the works in the area that draw their main inspiration from the cathedral towers. Its debt to the latter is evident in the profusion of ballflower ornament that encrusts the great procession of windows; and their incorporation of the tracery design employed throughout the upper stage of the central tower—two trefoiled lights surmounted by a sub-cusped cinquefoil set in a roundel. In fact, each of the four-light windows consists primarily of a pair of these units (PL. IV).

As at Weobley, the mason in charge of the work seems clearly to have come from the cathedral workshop, and they must have been close contemporaries. If anything, his work is slightly more up-to-date because he utilizes the tower tracery design, but, like Weobley, his mouldings derive predominantly from the remodelling of the cathedral aisles, particularly at the east end. This also applies to the tomb recess, decorated with a single row of ballflower, in the ruined south transept. The most precise parallels are as follows: (FIG. 4)

(a) The outer mouldings (AE) of the exterior window jambs are the same template as the arch of the tomb recess of Precentor Swinfield. In both cases, the hollow chamfers contain ballflower, and there is a large scroll hoodmould over the window arches similar to the scroll and bead hoodmould over the tomb.

(b) The alternating hollow chamfers and triangular recesses of the exterior window jambs are found in the interior window jambs of the cathedral choir aisles. At Leominster, the hollow chamfers (AB, DE) are 5.15 ins. across and the main recess is a right-angled isosceles triangle (BCD) with sides of 5.15 ins. and 3.65 ins.; and at Hereford, the hollow chamfer (AB) is 3.65 ins. wide, and the triangular recess (BCD) has sides of 3.65 ins. and 2.575 ins.[14] Also, in both jambs the innermost moulding that corresponds to the mullions is set back from the plane of the other mouldings by an irregular triangular recess (EFG), contained within another right-angled isosceles triangle with sides of 5.15 ins. and 3.65 ins. (EFJ). The same triangle with these dimensions is also to be found in the interior window jambs of the north-east transept of the cathedral.

(c) The tomb recess in the south transept is clearly related in its design to Precentor Swinfield's recess and especially to the window jamb of the cathedral choir aisles; both make use of hollow chamfers 3.65 ins. wide.

(d) The hoodmould of the sedilia arch is from the same template as the stringcourse that runs beneath the windows of all the cathedral aisles (FIG. 6).

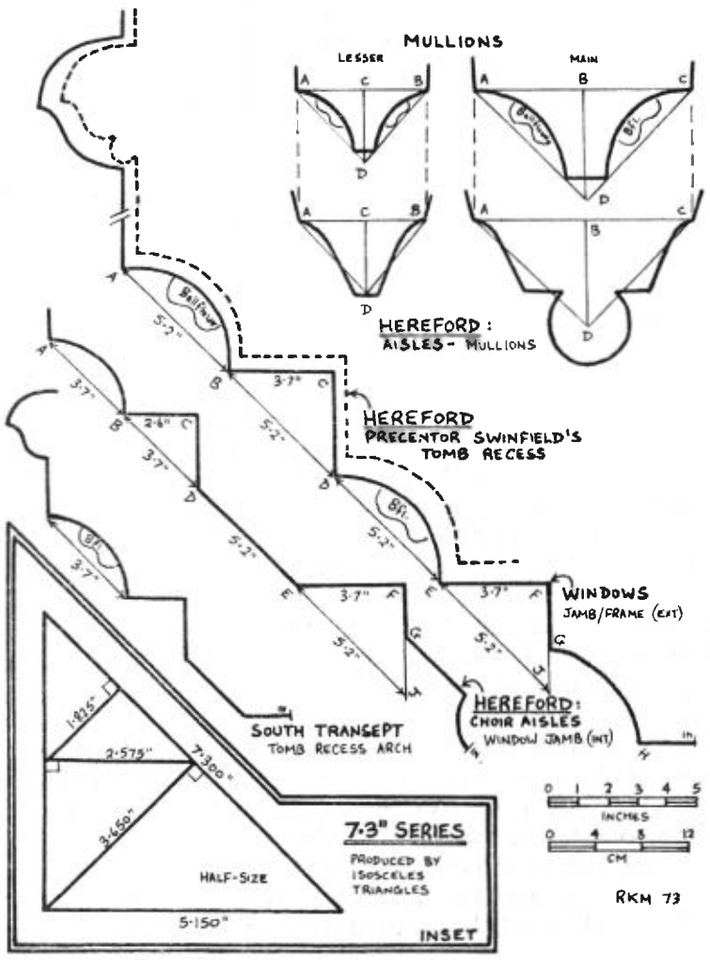
(e) The main and lesser mullions seem to have borrowed their dimensions from those of the cathedral, though the actual mouldings are a different design. In the main mullions, the dimension AC is 7.3 ins., BD is 3.65 ins. and AD and CD are each 5.15 ins.; the dimensions of the lesser mullions are less precise, but it is probable that AB is 4.4 ins. and that CD is meant to be 2.2 ins.

The aisle design also contains some influence from the north Gloucestershire churches, which provides clear evidence of the close inter-relationship between these two areas. In fact, Leominster is the key work in demonstrating the connexions between the Hereford tower and the south aisle of Gloucester Cathedral. Just as the two pairs of lights in the Leominster tracery design are copied from Hereford, so the large roundel in the head of each window, divided into six equal triangles radiating from the centre and filled alternately with cusped daggers and pointed trefoils, is almost exactly the design found in the heads of the south aisle windows at Gloucester (PL. IV). Even details like the treatment of the centre point as a tiny roundel and the precise distribution of the daggers and trefoils in the triangles are repeated at Leominster. Some of the moulding details are also connected with Gloucestershire, though they are not as precise or thorough as those with Hereford Cathedral. For example, the plinth mouldings are very close

in design and size to those of the eastern chapels at Tewkesbury (FIG. 8),[15] and the slightly unusual design of the sedilia arch, characterized by two roll and fillet mouldings canted at right angles to each other, is related to the interior window frame of the Lady Chapel at Tewkesbury, and also to certain other mouldings there (FIG. 6).

The very exact connexion with the tracery at Gloucester—this particular sexpartite pattern is not found anywhere else in the area to my knowledge—furnishes a valuable clue to dating. The Gloucester aisle is documented as begun by Abbot Thokey in 1318,[16] so presumably the work at Leominster belongs to about the

FIGURE 4 : LEOMINSTER



same period. As the rebuilding of the Gloucester aisle was determined primarily by structural considerations, whereas there does not seem to have been the same urgent necessity at Leominster, and as Gloucester was by far the more important of these two Benedictine houses,[17] there is a likelihood that Abbot Thokey's work provided the initial impulse for the remodelling at Leominster, even though its proximity to Hereford ultimately determined the main forms of the work. In which case, the aisle was probably begun about 1320 or shortly after.

LUDLOW

The north aisle of the nave is another well-known derivative of the Hereford towers. The work is normally placed around 1316, because the heraldic glass surviving in the easternmost window indicates that one of the benefactors was Theobald de Verdon, a descendant of the de Lacy family who built Ludlow castle, and who died in that year.[18] However, the stylistic evidence presented below, especially the connexions with the dated work at Tewkesbury, suggests that the aisle may actually be a few years later, and thus a posthumous memorial to Verdon's beneficence.

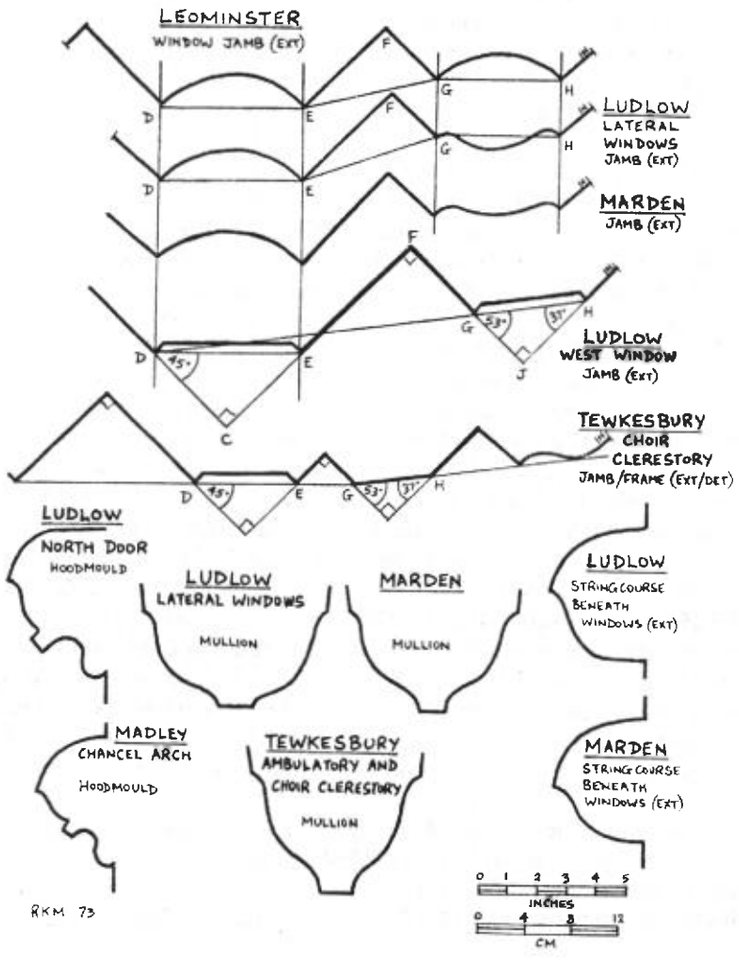
Like Leominster, the indebtedness of the work to the cathedral towers is immediately evident in the tracery, for the six lateral windows are exact copies of the two-light windows in the upper stage of the central tower (PL. V). As in the tower, all the cusping is rendered in a delicate moulding, in contrast to the robust mouldings of the mullions. Unlike Hereford, there is no ballflower on these windows, but it is present in profusion on the west window of the aisle. This is a four-light adaptation of the main features of the tower windows, and, in addition, it shares certain general characteristics with the aisle windows at Leominster. The diameter of the large roundel in the head is the combined width of two lights in both cases, and the pointed trefoils set in frames over the outer lights at Ludlow recall those set in triangles in the sexpartite roundels at Leominster.

Connexions with Leominster are also apparent in the mouldings. Most of the dimensions and design of the exterior jambs of the lateral windows are identical to the exterior window jambs at Leominster (FIG. 5); in both cases, the hollow chamfer DE is 5.15 ins. wide, and EFG is a demi-equilateral triangle with a long side of 5.15 ins. and a short side of 2.575 ins.[19] The exterior jambs of the larger, west window also bear a certain resemblance to the Leominster jambs, in that the main moulding is again 5.15 ins. across, and the mullion moulding is set back from the plane of the moulding(s) that constitute the window frame (FIG. 5). In addition, there seems to be a relationship in size and design between parts of the interior frame of the north door and the arch of the sedilia at Leominster, as shown in FIG. 6.

The above similarities are proof of the close association between Ludlow and work directly dependent on the cathedral workshop. In this instance, it is tempting to assign the Ludlow aisle to the same mason who was in charge at Leominster, but they appear to be too close together in time, unless one is pre-

pared to accept a date at least ten years later than the usual one given for Ludlow (i.e. a date of *c.*1325 or later). Moreover, certain important details reveal a much closer familiarity with Tewkesbury than existed at Leominster, which suggests that, if both works were to be assigned to the same mason, he had been employed at Tewkesbury in the meantime. The increasing connexions with Tewkesbury indicate the growing importance of the abbey as a major stylistic source for churches in the Hereford area; as skilled cutting work on the cathedral towers drew to a close, certain masons looked for an extensive building programme a little further afield to continue their trade (the first campaign of the

FIGURE 5 : LUDLOW AND MARDEN



lavish rebuilding at Tewkesbury lasted from *c.*1318-20 to 1325-26). The dependence of Ludlow on the abbey also indicates that the aisle is unlikely to have been begun prior to *c.*1320. A date in this period is also implied by the use of the same, slightly unusual design of hoodmould here (over the north door) and in the chancel at Madley, which, as we have seen, belongs around 1318 (FIG. 5).

The clearest borrowings from Tewkesbury are the mullions of the lateral windows, which are exactly the same design and virtually the same size as those of the ambulatory chapels, the only difference being that the latter are slightly narrower in proportion (FIG. 5). Ludlow is the first of the group of churches associated with the cathedral towers to employ mullions based on wave mouldings, chamfers and hollow mouldings having predominated previously (see Leominster, Weobley, and the cathedral aisles and tower). Another connexion is that the basic construction of the interior frame of the north door (i.e. a quarter hollow moulding leading to a roll and then to a hollow with fillets, etc.) is close in design to various moulding formations in the early work at Tewkesbury, such as the jambs of the Lady Chapel windows and the rere-arch of the south-east sacristy window, and the radii of certain roll and hollow mouldings are the same (FIG. 6).

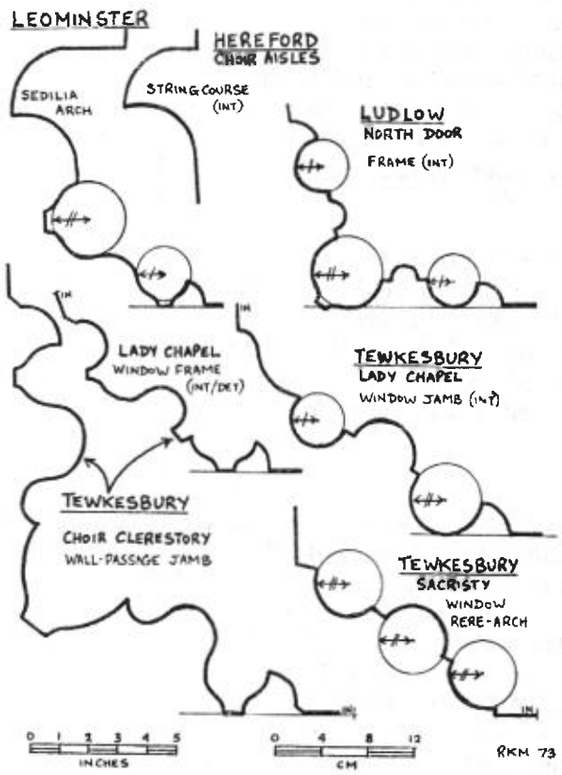
A most important parallel with Tewkesbury is the method of construction employed in the exterior jambs of the west window. The mouldings consist of two sunken chamfers separated by a triangular recess, a design noted above in the clerestory at Weobley (FIG. 2), but, unlike Weobley and any other moulding formations we have studied in detail so far, the two main mouldings do not lie on the same plane but are canted away from each other (FIG. 5). This results from constructing the outer sunken chamfer (DE) with the standard right-angled isosceles triangle (CDE), and the inner one (GH) with the more unusual Pythagorean triangle with angles of 53° and 37° (JGH). This effect does not appear to have been employed in the cathedral workshop group before this, and it seems to be derived from Tewkesbury, where it is found in several moulding formations, and usually in conjunction with sunken chamfers.[20] For example, part of the exterior jamb design of the choir clerestory windows consists of a sunken chamfer (DE) constructed with an isosceles triangle, coupled with a plain chamfer (GH) based on a Pythagorean triangle, just as at Ludlow (FIG. 5).

MARDEN

The picturesque chancel of Marden church is neither large nor elaborate, but it is of considerable archaeological significance because all its detail is copied without modification direct from the Ludlow aisle. In other words, though it is only four miles from Hereford and its tracery is clearly derived from that in the upper stage of the cathedral tower, it seems actually to be an indirect derivative by way of Ludlow. The tracery employed in all seven windows is an exact copy of the lateral windows at Ludlow, both being devoid of ballflower, unlike the cathedral tracery (PL. VI). The few mouldings of this very plain work—the mullions, window jambs, and stringcourse—are all copies of ones used in the Ludlow aisle, and could have been cut from the same template (FIG. 5).

To find two works like this, in which both the tracery pattern and the mouldings of the windows are identical, is, in my experience, a rare occurrence in this period (though less so in the Perpendicular period, with its tendencies towards 'mass production'). Only two other examples are known to me in this area—the reticulated windows of Pembridge, Weobley tower, and Kingstone, and the flowing tracery of Ludlow north transept and Richards Castle.[21] In such a case, the inevitable conclusion would seem to be that the same mason was in charge of both works. The likelihood that the Ludlow mason, with his extensive knowledge of Tewkesbury, worked at Marden is confirmed to a certain extent by the fact that the chancel plan incorporates an apse based on three sides of a regular octagon. The polygonal apse is always a rare feature in English architecture, but it was employed in all the ambulatory chapels at Tewkesbury in this period, and particularly in the lost Lady Chapel, of which Marden chancel seems to have been a simplified version.[22] In addition, it might be added that the relative proximity of Marden to Leominster (in contrast to its distance from Ludlow) may add some

FIGURE 6 : LEOMINSTER AND LUDLOW



substance to the idea that the Ludlow mason had previously been engaged on the Leominster aisle.

There is no documentary evidence whatsoever for the date of the chancel, but if we assign it to the Ludlow mason, a date in the second half of the 1320's is most probable. The chancel is much the simpler of the two works, and therefore is more likely to be the derivative.

LEDBURY

The north chapel at Ledbury is rightly considered to be the gem of Herefordshire ballflower, for the intricacy of the tracery in its five majestic windows is complemented by the delicacy of the miniscule ballflower that ornaments them (PL. VII). The doorway, too, is an outstanding decorative work, its mouldings delineated by rows of tiny boss-like sprigs of foliage and rose-heads, all carved in exquisite detail. The chapel is dedicated to St. Katherine, and if the tradition is reliable that this refers to Lady Katherine Audeley, who was an anchoress in this area and became a local saint, then the form and elaboration of the chapel is explicable. For she was none other than a cousin of Edward II,[23] and such court connexions may be the reason for the exceptionally ornate treatment, whilst the use of an elaborate external door in addition to the entrance from the aisle suggests that some sort of circulation system was intended to accommodate pilgrims drawn here by her cult.

Most of the mouldings and other details of the chapel are very much in the tradition of the other churches in this group, with strong connexions with the cathedral workshop and its derivatives, along with a familiarity with developments in the Tewkesbury area. Some of the main parallels are as follows: (FIG. 7)

(a) The entrance arch from the north aisle into the chapel consists basically of a series of chamfer mouldings, 5.15 ins. wide, separated by right-angled isosceles triangles each with a long side of 3.65 ins., all of which are dominant features in the interior jambs of the choir aisle windows at Hereford.

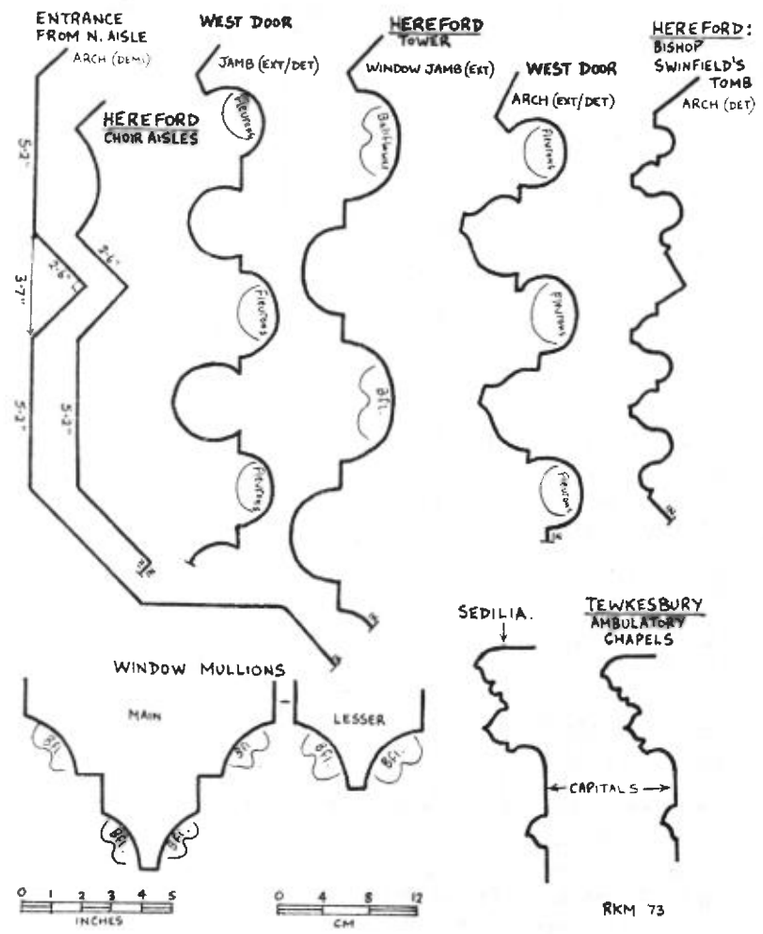
(b) The exterior moulding formation of the door jambs consists of roll mouldings alternating with hollows flanked by fillets, which is the basic design employed in the window jambs of Hereford tower. The arch of the door is the same design, but with fillets added to the roll mouldings as well, and is thus a larger version of the moulding formation of Bishop Swinfield's tomb recess in the cathedral, a work by the masons engaged on the towers.

(c) The form of the doorway is extremely close to that of the west door at Weobley, in that externally both are decorated with continuous rows of ballflower/round fleurons separated by shafts (detached at Weobley) in the jambs, whilst internally both have a similar arrangement of door-frame and depressed rere-arch.

(d) The interior profile of the lesser mullions is exactly the same in size and design as the respective mullions at Leominster. In addition, the stepped hollow chamfers, each filled with a row of ballflower, are related in design to the exterior profiles of the Leominster window jambs (cf. FIG. 4).

(e) The plinth mouldings are the same design as those of Leominster and Tewkesbury, and the stringcourse above, which consists of a scroll with two small stepped mouldings beneath, is close in design to the hoodmould over the choir arcade at Tewkesbury (FIG. 8).

FIGURE 7 : LEDBURY



(f) The capitals of the door are the three-scroll design common in mature Decorated work, but they are remarkably close in size to those found in the ambulatory chapels at Tewkesbury.

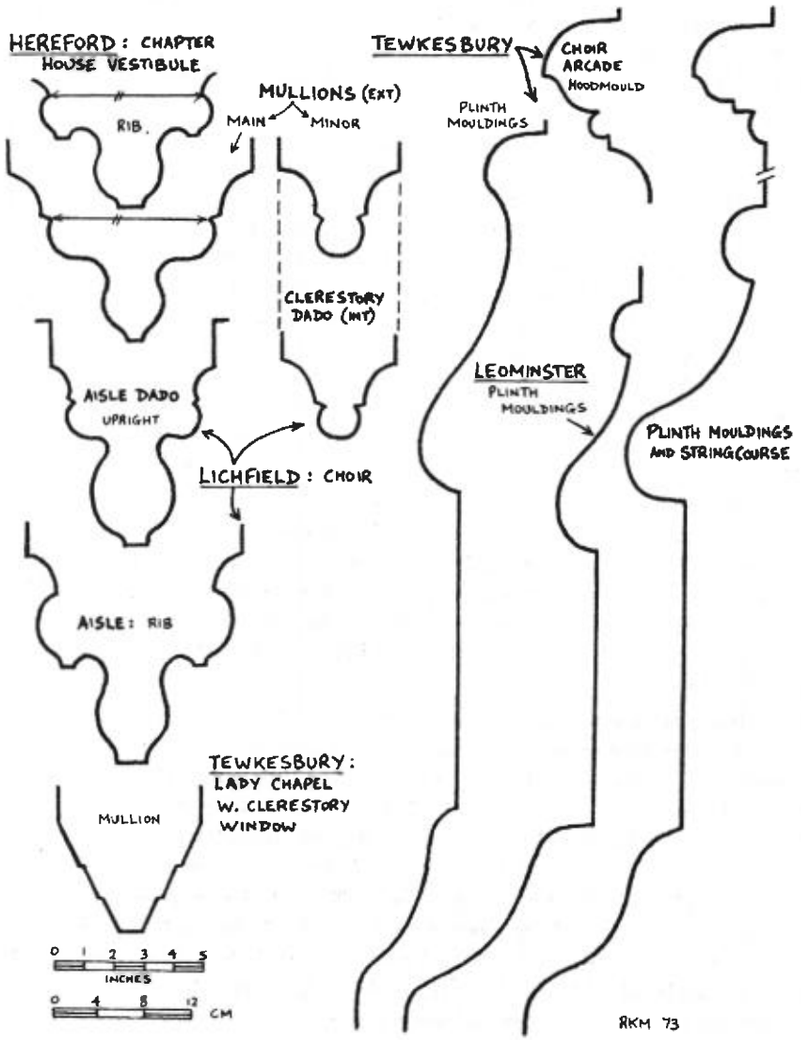
These parallels and the use of various other features, such as wave mouldings and sunken chamfers, indicate that the mason who designed the details was familiar not only with the cathedral but particularly with its main derivative works. Indeed, the exceptional variety of mouldings and ornament gives the chapel the air of a conscious masterpiece, and incline one to attribute it to one of the leading masons in the area—perhaps the master mason of the cathedral or, more probably, of Tewkesbury. Nonetheless, the chapel does not belong exactly in the same stream and time-span as the other works, for there is a new influence present which proves that the date of the work must be later than the others, probably *c.*1330 or later.

The window tracery, which consists of four lights with impaled quatrefoils and three larger pointed quatrefoils in the head, is most unusual, and does not seem to recur anywhere in the south-west and west midlands except in four isolated windows at Tewkesbury (PL. VII). The closest to the Ledbury design is the clerestory window in the surviving west wall of the Lady Chapel, which reproduces all the main forms of the design, though with some modifications of detail, such as trefoils instead of impaled quatrefoils, and the appearance of ogees in two of the large quatrefoils. This ogee treatment intensifies in the three other windows in this style at Tewkesbury—the east window of the south nave aisle, and the two easternmost windows of the north nave aisle—and two of them become thoroughly curvilinear. Despite this progression towards flowing tracery, the four must be considered as a tight-knit group because all employ the same distinctive form of lights with impaled trefoils, and the same unusual stepped chamfer mullions (FIG. 8): they are totally unlike anything else at the abbey. They all appear to belong to the 1330's, because neither flowing tracery nor the stepped chamfer moulding seem to occur in this area prior to that decade (see below). Though the Ledbury windows lack these two particular ingredients, the closeness of their tracery pattern to the Lady Chapel windows indicates that they must be relatively close in date too.

The ultimate source for the tracery pattern lies well to the north of our area, in a school of design that seems to encompass such centres as Shrewsbury, Lichfield, and Chester.[24] Almost exactly the same pattern as that at Ledbury, but without ballflower, is to be seen in the lateral windows of the choir clerestory at Chester Cathedral—four trefoiled lights impaling elongated quatrefoils, the lights grouped in pairs with a large elongated quatrefoil above each pair, and with an even larger quatrefoil in the head of the window.[25] Though they presumably date from the last quarter of the 13th century, with the rest of the choir, and thus would seem to be too early to be related to Ledbury, nonetheless, the evidence of the mouldings associated with the Ledbury and Tewkesbury windows indicates that this is the area from which the influence came.

The exterior profiles of both mullion types at Ledbury are closely related to work on the east end of Lichfield Cathedral. The lesser mullion is the same design and almost the same size as the lesser mullions of the panelled dado beneath the choir clerestory windows at Lichfield; and the exterior profile of the main mullions is related in design to several mouldings there, especially the uprights of the choir aisle dado (FIG. 8).[26] Moreover, this stream of influence would account for the flowing tracery and the stepped chamfer mullions in the

FIGURE 8 : LEDBURY



four windows at Tewkesbury, both of which are features more common to this school, and which begin to appear in the Tewkesbury/Hereford area through its influence during the 1330's (e.g. the tracery and mullions of the north nave aisle at Worcester, which seems to have been executed during the episcopacy of Bishop Braunsford, 1339-49). Thus, all the evidence suggests that a mason trained in the Chester/Lichfield area came south about 1330 or a little later, and assisted in the design and execution of the chapel. At the same time or subsequently, he was engaged in the rapid and rather piecemeal completion of the remodelling at Tewkesbury (mainly complete by 1344), and inserted four windows of his own design.

A relatively late date for the chapel would also tally with two other pieces of stylistic evidence. Firstly, there is a close connexion between the exterior profile of the main mullion of the chapel and the rib of the chapter house vestibule at Hereford (FIG. 8). Though work on the chapter house seems to have been contemplated even as early as Bishop Swinfield's time, nothing extensive seems to have been carried out until around 1337 or later.[27] The parallel with the Ledbury mullion may indicate that the Lichfield area mason worked here too after fulfilling his commitments on the chapel and at Tewkesbury. Secondly, the size of ballflower used to decorate the chapel is exceptionally small, no more than 1.5 ins. in diameter, a characteristic of work of about 1330 or later in the Hereford/Gloucester area (e.g. the capitals of the Chilston Chapel at Madley, and the window in the gallery chapel of Gloucester south transept). The ballflower employed in earlier works, such as Hereford tower, Weobley, Leominster, Gloucester south aisle, and Tewkesbury sacristy, are generally at least twice this size.

REFERENCES

[1] R. K. Morris, *Decorated Architecture in Herefordshire: Sources, Workshops, Influence* (London University, 1972). This article is based on chapter IV, with some reference to chapters I (part 5), II (especially parts 2 and 4), III (especially parts 3 and 4), and VII (part 5). Readers requiring elaboration of any critical points in the article should therefore consult this source.

[2] J. H. Harvey, 'The Origin of the Perpendicular Style', in E. M. Jope (ed.), *Studies in Building History in honour of B. H. St. J. O'Neill* (1961), 155, n. 27.

[3] See R. K. Morris, 'The Remodelling of the Hereford Aisles', *Journ. Brit. Arch. Assoc.*, (1974).

[4] The design of the tower and spire at Salisbury is generally attributed to Richard of Farleigh, following the evidence of the contract of 1334 between him and the dean and chapter, cited in J. H. Harvey, *English Mediaeval Architects: a Biographical Dictionary down to 1550*, (1954), 104-105. As the original designs of both towers at Hereford, and the extant mouldings of the central tower, are so close to Salisbury, several interesting explanations for the connexion present themselves. It could be that Farleigh was the designer of the Hereford works, but what we know of his career would suggest that they are too early to be by him. Alternatively, perhaps the Hereford master mason was responsible for the design of Salisbury as an outside consultant, whereas Farleigh was simply the builder; but to this it may be objected that Farleigh's contract implies that he was already too busy at Reading and Bath Abbeys to assume this arduous role, and that he should be the designer. In the circumstances, perhaps the most likely explanation is that Farleigh received some of his early training at Hereford, particularly bearing in mind the cathedral workshop's close connexions with Somerset, a county associated with Farleigh throughout his career.

[5] See R. K. Morris, 'Tewkesbury: the Despenser Mausoleum', to be published in *Trans. Bristol and Gloucestershire Arch. Soc.* for 1975.

[6] The association has been pointed out many times, though never, to my knowledge, have the mouldings of each of these buildings been investigated in detail—see, for example, G. Marshall, *Hereford Cathedral* (1951), 102, and G. G. Scott in *Archaeological Jnl.* (1877), 341-5.

[7] The same application of vertical pieces is to be seen a little later in the north arcade of the naves at Badgeworth and Brockworth, near Tewkesbury, one of numerous connexions between the county and this group of north Gloucestershire churches.

[8] A puzzling feature of the nave arcades is that the mouldings of the arches, and the treatment of their springing, differ slightly on the north side and on the south side. As there is no real reason to put one arcade later than the other, a possible explanation might be that not one, but two masons from the cathedral workshop were employed here alongside one another, each working in a slight variant of the source style. In addition, it will be shown that a local mason brought up in a quite different tradition was also engaged here, all of which suggests a rather piecemeal approach that, one suspects, may have been typical of many lesser building projects like this, and probably quite a few major ones too.

[9] *Loc. cit.* in note 3.

[10] The blind tracery decorating the sides of the font seems to have been copied by this mason from a pattern book stemming from the cathedral workshop, to which he would have had access presumably through the cathedral-trained mason in charge of the work. Seven of the eight panels employ designs copied from, or based on, the tracery of the cathedral aisles. Only the eighth, a crude uncusped intersecting design, is not from this source, and it may be a design added by the Dilwyn Mason himself (see the uncusped 'Y' tracery at Clehonger): it is a window type common in lesser works in the county in the later 13th century, and therefore typical of this mason's local background.

[11] W. W. Capes (ed.), *The Charters and Records of Hereford Cathedral* (1908), 183-4.

[12] The sunken chamfer is not a moulding of very common occurrence in England, and its origin is by no means clear. In the area with which we are concerned, it is possible that the form evolved from the mullions designed for the cathedral aisles *c.* 1290, which employ a curious half-complete sunken chamfer (FIG. 2). Alternatively, a growing body of evidence suggests that a more likely source is the Court school of masons centred on Westminster. Sunken chamfers of a sort are to be found in the surviving undercroft of St. Stephen's Chapel at Westminster (designed 1292), and apparently on the tomb of Edmund Crouchback, earl of Lancaster (d. 1296) in the Abbey (certainly on the later tomb of Aymer de Valence). Around the turn of the century, they also occur in St. Thomas's church at Winchelsea, a site with considerable royal connexions. Moreover, fairly shortly after its first appearance in the west, in the Hereford/Tewkesbury area, it is to be found in several churches in East Anglia, especially in Cambridgeshire (e.g. the work of Bishop Hotham in the choir of Ely Cathedral, *c.* 1322-37, and the nave and south transept at Trumpington), which may suggest a common distribution point. Ely has documented connexions with London at this period through its masons and carpenters, and in the west, both Wells chapter house (the main source for the style of the Hereford towers) and parts of Tewkesbury have definite stylistic links with the Court masons.

[13] N. Pevsner, *Herefordshire* (Buildings of England Series, 1963), 312. If there was a short delay between the completion of the work and the consecration, it may be connected with the difficult position in which Bishop Orleton of Hereford seems to have found himself after Edward II crushed the Marcher lords' revolt in 1322, a revolt in which Orleton was deeply implicated.

[14] Both dimensions are part of a series which runs—7.300 ins., 5.150 ins., 3.650 ins., 2.575 ins., etc. (given to the nearest one tenth of an inch in the figures)— and which is obtained by bisecting a right-angled isosceles triangle of a given size, then bisecting one of the smaller triangles so formed, and so on (FIG. 4, Inset). This particular series is prevalent in the later parts of the remodelling of the cathedral aisles, and in some of the derivative works, such as the chancel at Madley.

[15] Though plinth mouldings, like certain types of capitals and stringcourses, tend to be of rather standard design, and therefore not usually too helpful in tracing individual styles.

[16] See W. H. Hart (ed.), *Historia et Cartularium Monasterii Sancti Petri Gloucestriae* (Rolls Series, 1863).

[17] The aisle at Leominster is actually in the parish's part of the church, and therefore may not have been financed by the monastery; but this does not really affect the argument that Gloucester is likely to be the model, not the copy.

[18] N. Pevsner, *Shropshire* (Buildings of England Series, 1958), 178.

[19] Dimensions given to two or three decimal points result from the application of the 7.3 ins. series (see above, note 14), which can be recognized constantly in Herefordshire during this period, even though such factors as weathering and restoration mean that the precise dimensions vary a little from building to building; see Morris, *Decorated Architecture in Herefordshire, op. cit.* in note 1, Appendix A, part 1.

[20] The ultimate origin of the construction in England may be the Court school, for the earliest example I know of is found in the interior window jamb design in the south transept of Westminster Abbey.

[21] These two groups of churches will be discussed in subsequent articles in this series.

[22] Madley is the other well-known local example, but it too is very closely allied with Tewkesbury; the next article in this series will deal with Madley and the sources for the polygonal apse design.

[23] D. Farquharson, *The Church of St. Michael and All Angels, Ledbury: A History of its Buildings and Study of its Architecture* (3rd ed., British Pub. Co., Gloucester), 17. I would agree with this author that the tomb adjacent to the entrance of the chapel is unlikely to be that of Katherine Audeley, as its date must be in the late 1340's at the very earliest.

[24] See Morris, *Decorated Architecture in Herefordshire, op. cit.* in note 1, chapter VII.

[25] The Chester windows are total restorations, but it is said that two original windows survived to guide the restorers: see N. Pevsner and E. Hubbard, *Cheshire*, (Buildings of England Series, 1971), 136.

[26] Harvey, 'Origin of Perpendicular', *op. cit.* in note 2, pp. 151-2, is inclined to attribute both these Lichfield mouldings to William Ramsey's documented arrival there in 1337, but this does not mean that the Ledbury chapel necessarily has to be after that date, for it can be demonstrated that several of the 'Ramsey mouldings' have precedents in the earlier work at Lichfield.

[27] For the dating of the chapter house, see Morris, *Decorated Architecture in Herefordshire, op. cit.* in note 1, chapter VIII, part 1.

Penrhos Court, Lyonshall

By J. W. TONKIN

PENRHOS COURT is a fine example of a cruck building with additions of various periods and shows well how a house has been adapted to meet changing needs of different ages.

EXTERNAL DESCRIPTION

The house forms one side of a big quadrangle which is the farm-yard, being built on rising ground to the south-east of it and separated from it by a small walled garden. The yard is entered by a gateway in the northern corner and the house is approached across the yard.

The north-eastern part looks at first almost symmetrical with three gables facing the entrance. These are of local ashlar up to the first floor, but above that the timber-framing is revealed. The north-eastern gable is the biggest and has quarter-circle decorative members in the panels of the timber-framing above the tie-beam and close set-framing below. The central gable is also close-set, but with no decoration above and is about half the width of the end one. The third gable is of heavy timber, big panels, has small, heavy curved braces to the tie-beam and is clearly earlier than the others. It has butt-purlins and no ridge-purlin whereas the others have through-purlins and ridge-purlins.

There is a window on the ground floor of each of the outer gables and a doorway in the central one. There is a window on each gable on the first floor and an attic window in the decorated north-eastern one.

Beyond this wing to the south-west is a long, low range, of rubble for most of its height. There is a distinct change of angle about a third of the way along this and a change in the nature of the walling at the same point. The longer, south-western part is rough-cast for its top two feet or so beyond the straight joint in the rubble, while the part next the cross-wing shows some timber-framing. There are two ground-floor windows in this range.

The only piece of local stone roofing still remaining on the house is between the cross-wing and the stack on this front.

The south-eastern front, back of the house, to a large extent repeats what is to be seen at the front except that there is no decoration in the end gable. However, there is one major difference. The middle gable is completely lost in a later extension which also partly overlaps the end gable. This extension is in close-set framing, the upper part having no middle rail whereas elsewhere in the house, as in most parts of Herefordshire, there is a rail. At the end of this, facing north-west is a garderobe shaft. This extension has a doorway towards its eastern end, opposite the front door, and an oriel window above it.

There are a doorway and two small windows in the long south-western range and in the timber-framing of this at first-floor level in the part nearest the cross-wing is a four-light window with diamond mullions. The wall of this range has been entirely rebuilt in the last few years for the western half of its length.

The south-western gable is of stone below and rough-cast above with a window at first-floor level while the north-eastern end of the house is of stone on the ground floor with close-set framing above and an outbuilt stack.

INTERNAL DESCRIPTION. (See FIG. 1).

Ground Floor

The south-western range is of cruck construction, four cruck-trusses being in situ, and there is some evidence that there was once a fourth bay. The western bay is divided longitudinally to form a coal-house and a dairy/pantry. Only the latter has a ceiling today, the coal-house being open to the roof, but there is some evidence that the floor went right across both rooms. One interesting piece of equipment in the dairy is a double cheese-press. This room is 1 ft. 8 ins. below the level of the next two bays.

These are largely occupied on the front by a big stack and its bake-oven and fireplace. The room next to the dairy occupies the full width of the house and has the bake-oven and a copper. From it a newel stair leads to the upper storey. This room appears to have been a back kitchen for a very long time, probably since the 17th century. The back door leads into it.

The space between the stairway and the stack forms a passage into about half of the third bay which has a big open fireplace and has clearly been the kitchen/living-room for a long time. In the fireplace is a later cooking range. The beams in this room and the back kitchen have 4 ins. chamfers and Wern Hir stops. Opposite the fireplace is a panelled dado of panels about 1 ft. 2 ins. by 11 ins. using a mason's mitre, the muntins having a cavetto moulding and the rails a scribed decoration. It presumably dates from *c.* 1600 and may well be of the same period as the insertion of the floor in the earlier hall. Across the back of this room is a small pantry entered from the wing and lit by a small three-light window with moulded early 18th-century mullions.

From this room a door leads into the first of the gabled parts of the house. It seems to be a medieval cross-wing though there is evidence, which will be discussed later, to show that it is later than the cruck building. This fine room, now 26 ft. long by over 14 ft. wide, was no doubt the parlour. It does not seem to have been divided originally, but in the 18th century two small rooms were screened off at the back. These screens have recently been removed. Across the centre of the room is a chamfered beam supported on short, but heavy, curved braces and carrying fifteen heavy planks of varying widths which act as the floor of the chambers above. The posts carrying this beam are about 1 ft. square and chamfered with Wern Hir stops. In the north-west wall of the room is an ogee-headed doorway. The big, open fireplace, on the same wall, is built mainly into

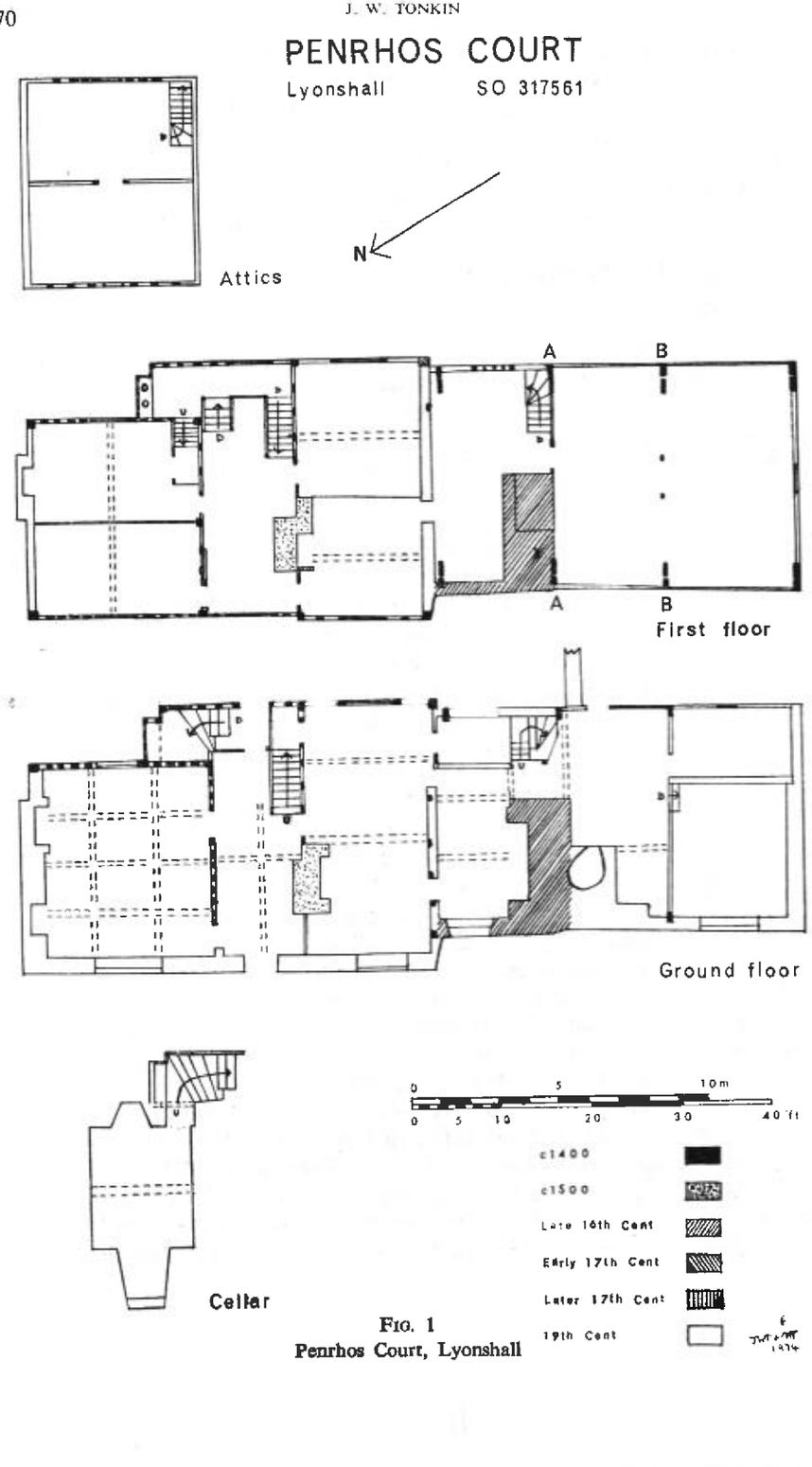


FIG. 1
Penrhos Court, Lyonshall

the room but the stack projects just over 1 ft. into the next room. Against the back wall is a small area where the heavy plank ceiling is replaced by a lighter timber. It seems likely that this marks the position of an earlier, simple stairway to the chamber above.

The next room is now the hall and is entered from the parlour by an inserted doorway to the north-east of the central post, the ogee-headed doorway being blocked by a later stairway. This hall is something of a puzzle for it seems to have been a narrow additional parlour-wing before the present end wing was built. It is about 10 ft. wide and seems to have lost most of its original external, lateral wall and all its back wall. On the other side it uses the wall of the earlier parlour-wing. The stairway which is at the back of the hall is quite delicate and well-made. It probably dates from *c.* 1830-1840 but could be earlier. On the north-west side at the back a doorway leads to the cellar stairs. The framing of the earlier wing is in big panels, while that of the later wing is close-set. The beams have 3 ins. chamfers. This wing appears to be of late 16th-century date, but has been so much altered that it is difficult to tell. Certainly it is framed independently of the later wing on the western side.

The latter probably dates from the early 17th century. The ceiling is divided by heavy beams with 5 ins. chamfers into twelve panels about 5 ft. 6ins. by 4 ft. 6ins. each with three joists. The joists in each panel are at right angles to those in the panels adjoining it. This is a type of work found in a number of wealthier houses in the 16th century in this area. Examples can be found at Almeley Manor, one of the earlier ones, Old Hall, Adforton, a cruck house with an inserted floor and Ford Street at Wigmore.

Today there are two fireplaces, for this room was divided for probably nearly two hundred years. However, recently it has been restored to its original size. The fireplace in the front part is 19th century while that in the back is of fluted cast-iron and appears to date from *c.* 1800 or just before and probably hides the original. Both use the outbuilt stack on the north-west wall.

The cellar lies below this wing and is approached from the hall as mentioned above. It is a simple, rectangular space 13 ft. by 11 ft. 2 ins. with a window at each end and a heavy beam with 5 ins. chamfers which carries the parlour floor. The 'trams' for the cider barrels are still in situ. Fastened to the close-set timbering of the wall by the stairs is some 17th-century panelling, moulded on three sides.

First Floor

On the first floor the main rooms run above those below and it is possible to see more of the construction of the house. The loft over the dairy and the rooms over the back kitchen and kitchen are not at present in use. However, it is clear from the remaining timbers that at one time they have been intercommunicating chambers. From these rooms can be seen the cruck-blades and the roof-members. The gable cruck has one purlin carried on a blocking-piece, one supported at the end of it and the third trenched into the blade. There is also a ridge-purlin. There are two collars, both straight. The next two crucks are very similar except

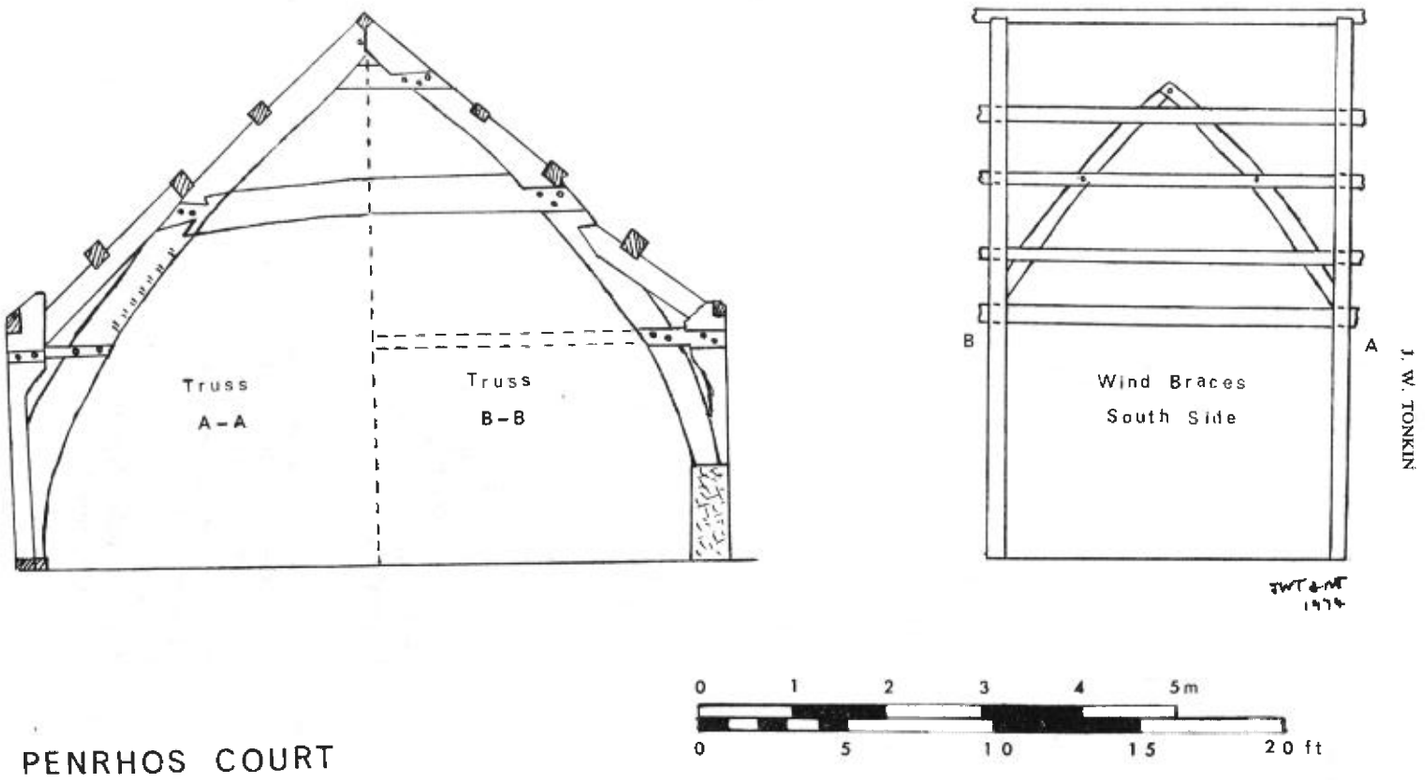
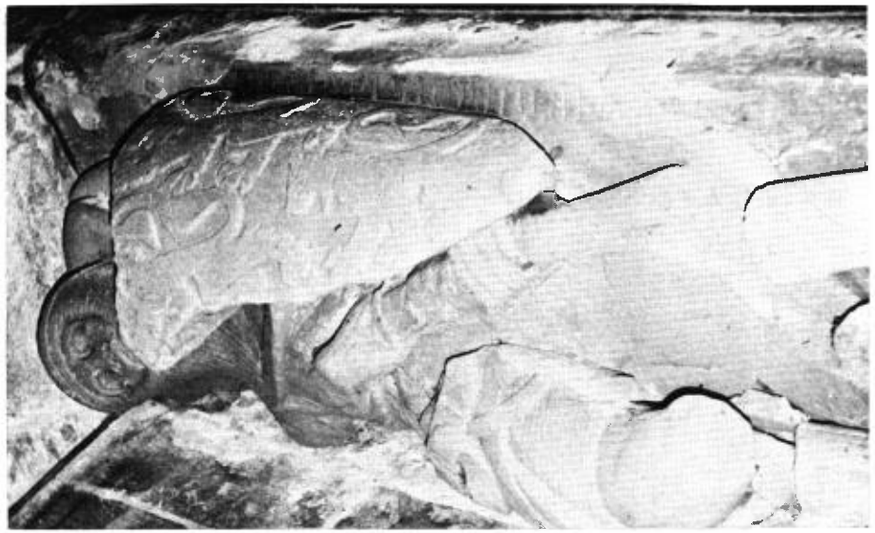


FIG. 2
Penrhos Court, Lyonshall

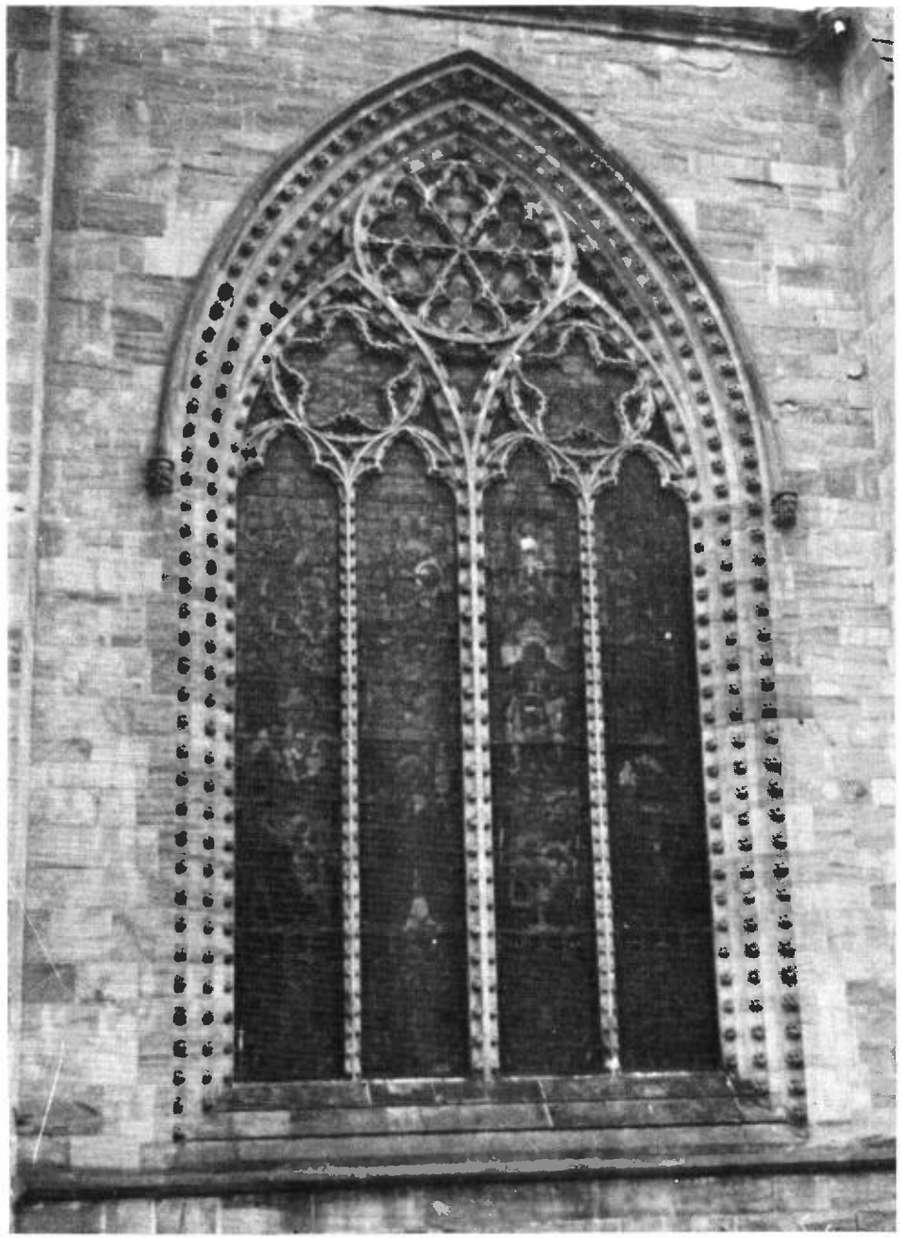
PLATES

I—The Pauncefot Arms

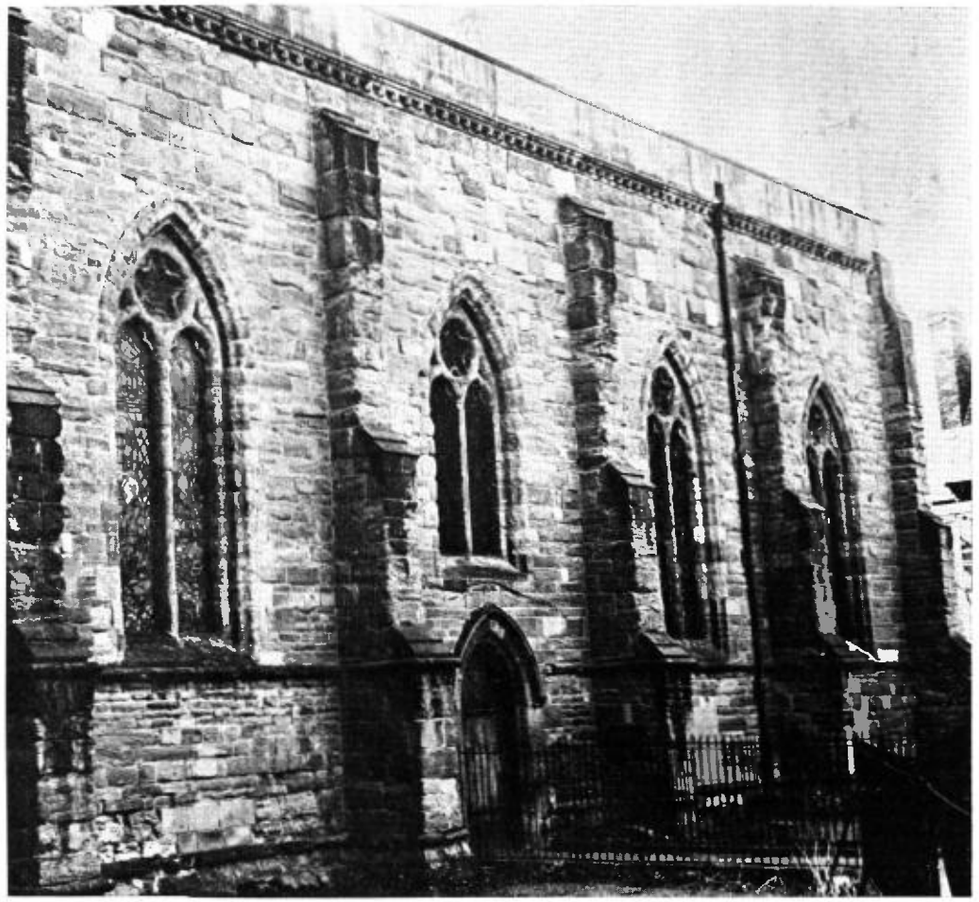
II—Sir Grimbald Pauncefot, Much Marcle



III—Sir Grimbald Pauncefot, Crickhowell

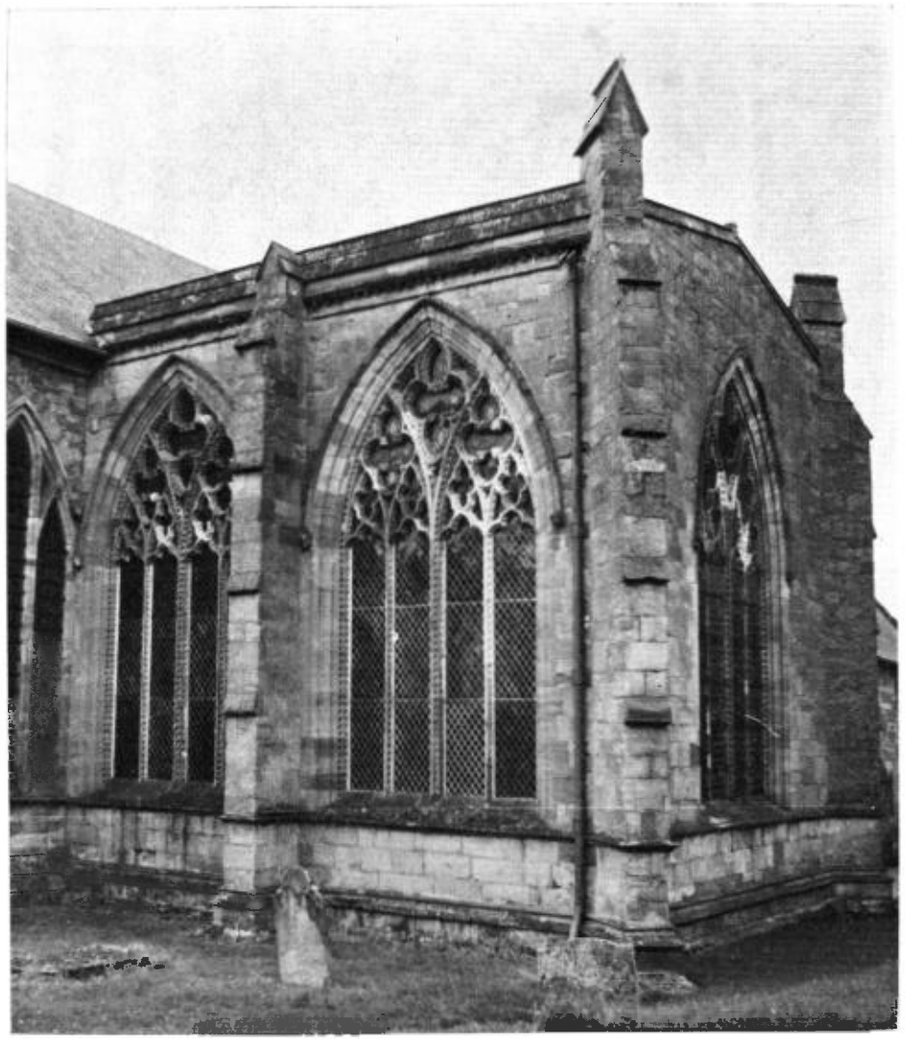


IV—Leominster, south aisle window



V—Ludlow, north aisle from the north-east

VI—Marden, chancel from the north-east



VII—Ledbury, St. Katherine's Chapel, from the north-east

that the collars are higher and the middle purlin rests on the projecting lower collar. The gable truss, and the second and fourth trusses from that end had tie-beams lower again. The collars, the ties and the spurs are all halved into the blades with notched joints. On the under side of the third cruck-truss are seven peg-holes in each blade which seem to indicate some form of applied moulding or additional timber.

The curved wind-braces in each bay start from the blocking-piece and pass behind the purlins to meet in a halved joint about 1 ft. above the topmost purlin. They are halved into the back of the purlins. On the western blade of the fourth truss is the sawn off remnant of a wind-brace which at one time was in a fourth bay which has been replaced by the medieval cross-wing. Some of the original rafters remain pegged into the purlins, but most have been replaced and no signs of the position of the louvre can be found.

The medieval cross-wing is divided into two chambers and probably always has been. The front chamber is heated by a fireplace above that in the parlour below. These rooms are now ceiled at collar-beam level and the plaster is brought down to the wall-plate. However, when some of this was removed recently it revealed heavy curved wind-braces. On three walls of the front chamber are traces of a mural with a vertical blue-and black flower pattern perhaps of the 17th century. In the other chamber in this wing on two walls there are the remains of an orange-and-black overall flower pattern on a green background which may well date from the 18th or perhaps late 17th century.

The landing over the hall shows clearly the separate framing of all three wings and the way in which the addition was made at the back. The wall-plate of the central wing has been removed from about 6 ft. back from the front of the house. Above this junction to take the water away from the valley is a V-shaped drain made of elm. Farther towards the back a blocked doorway above the tie-beam of the north-eastern wall presumably means that at one time there was an attic over the back part of the landing. Four stairs down there is a two-seat garderobe in the projection which overlaps the back of the north-east wing. In its present form it is probably 19th century, but it seems to have replaced something earlier. Between the landing and the garderobe are the stairs leading up to the attics over the parlour wing.

In the latter are two chambers over the room below. The beams here are like those below with big Wern Hir stops. The floor-boards are in a chequer-board layout because of the pattern of the joists below. The fireplace is in the northern room over the 18th-century one in the parlour.

The attic above is divided into two chambers by the central truss which has raking struts from the tie-beam to the principals and once had a collar. The stairs are awkwardly inserted taking up some part of the rear chamber over the parlour, but where they were originally, if not here, is difficult to say.

CONSTRUCTION AND DATING

Cruck Range

The south-western cruck range is clearly the oldest part of the building and appears to have been a two-bay hall with a two-storey service-bay and probably a two-storey parlour-bay at the other end. As the existing parlour wing is apparently of late 15th-century date, or at latest, early 16th century it seems likely that the cruck building would probably have served two, quite likely three generations, before the parlour-bay was taken down and replaced by the cross-wing. The only evidence for the earlier bay is the wind-brace running on from the cruck against the wing, but it seems unlikely to have been there unless there was a bay. The wing itself is separately framed.

There are no mouldings and no cusping on this part of the building. If the added timber on the third cruck-truss had survived it would probably have provided some evidence. The absence of cusped decoration in a house of this quality is unusual in cruck buildings on the Marches and may be a sign of an early date. Another unusual feature is the way the wind-braces pass behind all three purlins instead of being in separate tiers between purlins. Three other cruck houses known to the writer in the area have similar wind-braces. These are The Forge at Eardisley,[1] Carter's Croft at Stapleton and Black Hall at King's Pyon. It may simply be a local tradition, but as there are a number of other houses in the same area e.g. Great Quebb, Little Quebb and two houses at Apostles in Kington, The Wern at Brilley and Dairy Farm at Weobley which follow a 'normal' cruck tradition it seems quite possible that this type of wind-brace is a sign of greater age. A final peculiarity is the pegging of the third truss. Instead of the normal mortice and tenon pegged through the cruck-blade the peg-holes, seven in each blade, are into the edge as though something was pegged through from its face onto the inside of the truss. Rather than being evidence of an arch-brace this probably means that some form of moulding was applied to the central truss of the hall. The same method is used to apply mouldings to the edge of arch-braces at the White House, Aston Munslow, in Shropshire.[2]

These unusual features together with the evidence for a replacement parlour end *c.* 1500 probably indicate a date of *c.* 1400 for the original cruck building.

The cruck hall was divided into two storeys by an inserted floor, possibly when the first additional parlour-wing was built probably late in the 16th century. At the same time the stairway from the back kitchen would have been built and also the big stack, probably approximately over the position of the central hearth. The bake-oven and copper are, no doubt, 18th and 19th-century additions respectively.

Early Parlour Wing

This is of normal box-frame construction of two bays, heavy framing and quite big wattle-and-daub panels except for the first floor on the front. The posts are jowled and there are short curved braces from these to the tie-beams, heavier on the front than the back. The trusses each have a collar and a tie-beam with one butt-purlin on each side and no ridge-purlin. There is a single tier of curved wind-

braces. The upper floor projected over the lower in front in a jetty, the mortice and peg-holes for this still showing in a post in the parlour.

This wing with its chamfered ogee-headed doorway and the heavy plank ceiling already mentioned seems to date from *c.* 1500, more probably from the early 16th century than the late 15th. The position of the doorway on the external wall of the wing may mark an early attempt at added privacy by providing direct access to the parlour end without having to come through the hall. There is a medieval doorway in a similar position in the parlour cross-wing at Bridge Farm, Wellington.

The heavy plank ceiling is unusual and rather crude, consisting of fifteen pieces of timber of varying widths but equal thickness running from beam to beam with no joists at all. There is no attempt at over-lapping as at Harvington Hall, Worcestershire, or Churche's Mansion, Nantwich.

The Later Wings

These seem to be of separate construction from each other and from the early parlour-wing. The present entrance hall seems to have been built as a small additional parlour-wing probably at the end of the 16th century. It was about 10 ft. wide with seven close-set panels on the upper floor in front. It has been so much altered and so much of it has gone that it is difficult to be sure what it was like. The trusses were of collar and tie-beam type with one through, trenched, side-purlin and a ridge-purlin.

The new parlour-wing appears to have been built early in the 17th century and has two storeys, cellars and attics as already mentioned. It was of close-set framing all round on the ground floor and on the three external sides on the first floor, 28 ft. wide and had collar and tie-beam trusses with two trenched, through side-purlins and a ridge-purlin. The corner posts had squared jowls, not curved as in the medieval wing. The quarter-circle decoration with no cusping seems to have been popular in the northern part of Herefordshire and in Shropshire at this period. The central truss has raking struts from tie-beam to principals. As the ground floor against the slightly earlier wing is of close-set framing it was presumably intended to be seen and the framing of the former was probably removed at this level at the time of building.

On the first floor and in the attics are some typical carpenters' assembly marks of the period. There are two series differenced by one having a single stroke on the first Roman figures, the other having two strokes rather like a crow's foot.

But these later wings were altered again during the 17th century to make a stairwell. It may be that this was done at the same time as the big parlour-wing was built, but the workmanship is so much inferior to it that it seems unlikely. The back part of the roof of the second wing was taken away and a new roof constructed at right angles to the wings. It is of poorer quality, close-set framing and, unusually for this area, the upper floor has no rail. Exactly what form this took it is difficult to say for it has been altered again since then. Certainly, as mentioned above, there seems to have been an attic above the present stairs but

this has been removed. It may have been at this time that the rather awkward stairway into the attics over the parlour-wing was constructed. This involved an alteration of the earlier external wall.

Later again, probably in the 18th century, a garderobe was added onto the western end of the stairwell. The external timbering had weathered considerably before this was done.

Later alterations

These are fairly few. The most important was the insertion of the present main stairway, already mentioned, and the encasing of the ground floor in front in stone. All this was probably done at the same time perhaps *c.* 1840, and the heavy front door frame and sashed window frames with fine glazing bars no doubt date from the same time. The window above the front door has horizontal, sliding-sashes of the type often known as Yorkshire sliding-sashes.

The house was clearly the home of an important farmer possibly of the armigerous class and shows how a house was adapted and added to during the centuries to meet the changing fashions of the times. Its additions reflect the good period of English farming. For the last hundred and twenty years little had been done to it until recently and it had got into a poor state of repair; now once again this fine example of Herefordshire timber-work is being restored.

OUTBUILDINGS

The south side of the farmyard is occupied by a big stone threshing barn with good roof trusses probably of the late 17th century. It has narrow loops and a roof of local stone. Its western end appears to have been adapted for use as an engine house, but unfortunately the old horse-driven machinery has gone. At right angles to it is a ruined, stone building which may have been an earlier barn. This is continued northwards as a lower stone building, probably of 18th-century date. On the north side of the yard are some well-built pig sties. Behind the house, discreetly hidden by bushes, is a two-seater brick privy and a pump yard is behind the early part.

I am grateful to Mr. and Mrs. M. Griffiths for allowing me to wander round their house, to Mr. and Mrs. Boore who were looking after Penrhos before its present owners bought it, to Mr. and Mrs. J. G. Keely for helping to measure it and, above all, to my wife for helping to measure and draw up the house and for typing this report.

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The Hearth Tax in Herefordshire

By M. A. FARADAY

THE hearth tax was imposed as a parliamentary, but nonetheless perpetual, revenue by the Hearth Tax Act, 1662.[1] It was to be the *quid pro quo* for the abolition of certain so-called feudal dues, such as purveyance, wardships and reliefs. Where the latter, however, had fallen largely upon the better-off, the hearth tax was imposed on all but the very poor. The choice of hearths as the subject of charge was chiefly dictated by the desire to levy the tax according to the ability to pay. It was only a rough measure of this; expenditure on hearths depended on social position and fashions in display and comfort, which varied both geographically and socially, rather than on income. The hearth tax itself checked the increase of this particular mode of expenditure, just as the later window tax affected the incidence of windows. The tax was levied at the rate of one shilling a hearth each half year on the occupiers of all houses, excepting only those householders who were exempted by reason of poverty from church and poor rates or whose houses were worth no more than £1 p.a. A later elaboration to these rules forbade exemption to anyone occupying a house with more than two hearths.[2]

The tax was levied from Michaelmas, 1662, to Lady Day, 1689, being abolished after the Revolution.[3] Although the annual revenue from it was quite small compared with that from other direct taxes (in Herefordshire about £1,600 yearly compared with £13,580 for the royal aid in 1644 and £27,160 for the aid of 1690) it aroused considerable bitterness, mainly because of the novel necessity for the constables to enter houses where the occupier failed (in an age of sparse literacy) to notify his liability in writing. After the Revolution a window tax was imposed which was more acceptable because it could be assessed by an external survey. There were anti-hearth tax riots in Hereford city during November, 1666, which caused the government to send the Lord Lieutenant, Lord Herbert of Raglan, to enquire into them.[4]

Like all taxes at all times the hearth taxes were evaded. To an extent this was due to inadequate drafting of the statutes. Most taxing statutes, including the Hearth Tax Act, 1662, required subsequent Acts to explain away inconsistencies and to improve the machinery for assessment, adjudication and collection. The assessments for the first hearth tax charge were probably fairly comprehensive; the collection of the tax was, however, another matter. There were wholesale improperly authorised exemptions, which helped to confuse the problem of arrears. In Michaelmas, 1662, £875.95 was assessed on the county. Two years later £186.80 (or 21.3%) was still in arrear, of which £110 was by then in the Collector, William Bowdler's, hands, £47.05 was still in the constables' hands, £4.59 in the hands of, though unacknowledged by, the sheriff, Sir Herbert

Perrott, £2.86 taken as salaries for the constables, £1.75 over-charges, £1.85 sundries and £20.45 assessed on poor persons who were later discharged.

Bowdler eloquently summed up the problems of collection:

> 'I could never get any account from the constables of the City though I have often times prest it and have desired the mayors assistance in it. Some of this the constables have received but are poore and not responsible, much of it is upon poore people taken of by the Justices But the neglect of the constables in collecting it and the deaths of many or removals of others is so confused that it cannot be knowne where it is to be levyed'.

On a later occasion he observed, again of Hereford:

> '. . . the neglect of them in collecting it was soe great that it cannot be lodged. And what is in their hands they are soe poore it is never like to be had'.

In presenting his 1664 account for Grimsworth, Bowdler added the note:

> 'One of the chief constables of this Hundred never sent out his warrants and by too yeares neglect it was in great confusion. There might be errours in this But it is as neare truth as possibly can be done'.[5]

In fact there were arrears or discrepancies at every stage; there were persons whose taxes were never collected and petty constables, chief constables, county receivers and sheriffs in arrear or in dispute with each other.

A partial cause of the trouble was that the attempt to spread the tax burden involved a very high number of charges to produce a relatively small amount of revenue. For Lady Day, 1664, 7,924 charges amounted to £823, a little over two shillings per charge; the administrative effort was out of all proportion to the product. A few comparisons illustrate this.

	Tax	Place	Charges	Revenue per payment	Tax per charge
1664	Hearth Tax	Lyonshall	59	£4.50	8p
1656	Assessment	Lyonshall	118	£24.54	20p
1673	Assessment	Lyonshall	119	£26.01	22p
1664	Hearth Tax	Wigmore	654	£62.65	9p
1663	Subsidy	Wigmore	204	£120.22	59p
1664	Hearth Tax	Wormilow	852	£85.00	10p
1663	Subsidy	Wormilow	135	£70.73	52p

This comparison is related to the amounts of periodical payments rather than to the amounts of assessments.[6] In fact the comparison under-states the administrative effort required for the hearth tax. All taxes had the problem of identifying those entitled to exemption, but whereas most taxes were based on conventional lists, such as the church-rates lists or the subsidy-books, the hearth tax required the inspection half-yearly of all houses and an elaborate procedure for investigating, certifying and recording exemptions. That this was largely unproductive effort is shown by the fact that the stricter procedures of 1664 increased the numbers of listed exemptions but not the numbers of people charged and paying.

In the history of taxation the hearth tax is important only as an experiment in 'progressive' taxation in the guise of a sumptuary tax. It is more important for what the returns made under the statutes show about the structure of society and the distribution of population in the late 17th century. Only the returns for 1662 to 1666 and 1669 to 1674 were made to the Exchequer and so survive in the national archives. For Herefordshire the only surviving returns are those for Michaelmas, 1662, Lady Day and Michaelmas, 1664 and 1665, Lady Day, 1666, Michaelmas, 1670, 1671 and 1673.[7] Of these the most useful are those for Lady Day, 1664 and 1665, and Michaelmas, 1671, because they are the most complete and legible. The first and last also include the numbers or names of exemptions. The returns for 1662, Michaelmas, 1664, and Lady Day, 1673, are also of value. Table III following analyses these returns parish by parish within their hundreds and compares them with the 1801 census returns.[8] In order to save space they must be allowed largely to speak for themselves.

There are omissions, of which the easiest to identify are missing township returns. Less easy to identify are the omissions of all or, worse, some of the exemptions for particular townships. The tabular comparison throws some of these oddities into relief. In Table II an attempt has been made to repair these omissions to provide realistic totals for the county.

The 1662 return gives numbers of chargeable hearths, but, owing to evasions and misunderstandings, they include many cases subsequently exempted. The additional Acts of 1663 and 1664[9] regulated the granting of exemptions and later returns show a more stable relationship between charges and exemptions until the 1670s when greater prosperity or greater administrative zeal lifted a higher proportion of the population into the taxable range.

Between 1671 and 1801 the number of inhabited houses in Herefordshire increased by about 23%. This figure conceals wide variations across the county, for, while the number in Hereford City grew by 91% and the total for the five towns, Hereford, Leominster, Ross, Ledbury and Kington, rose by 70%, there were fewer houses in each of nearly a third of the parishes. The proportion of the county's houses in each of the hundreds of Greytree, Radlow and Wolphey and Hereford City increased, while the most significant decrease occurred in Wigmore (from 7.2% to 4.9%). Most of the increase manifested itself in the towns and larger villages, as Table I shows. Little net population movement occurred in the previous century; a 1548 census of communicants (Chantry Certificate, P.R.O., E.301/24) was distributed almost identically to the 1664 hearth tax for the same (72) places, calculated like Table I.

In this discussion houses represented by hearth tax charges and exemptions and in the census by inhabited houses, can, used carefully, stand in for actual populations. The census total of families is 11% greater than the number of houses, which is accounted for by both three generation households and multi-household houses. It is likely, in a period of rising population, particularly in towns, that house-building did not keep pace. In 1801 'multi-occupation' was

almost certainly more common than in 1671, for the census recorded 4.9 persons per inhabited house in Hereford City, while in 1757 there were 4.3 persons per house (1279 houses and 5526 people) and in 1796 4.4 persons per house (1361 houses and 6007 persons).[10] In Hereford the increase in population 1671-1801 may therefore have been about 118% but, as 'multi-occupation' was probably a mainly urban phenomenon, the increase in the population of the county was probably about 23% (from about 72,500 to 89,190).

The 18th century produced a greater disparity between the size of the population of the parishes. In 1671 the mean number of houses per parish was 58 and half the parishes had numbers of houses within ± 50% of this mean. In 1801, however, the mean was 71 and only 42% of the parishes were within ± 50% of it. This undoubtedly reflects the greater productivity of agricultural manpower, but it probably also reflects the greater unwillingness or incapacity of society to support the indigenous poor through under-employment and subsistence husbandry or plain relief.

The tabular analysis of the numbers of charges of each magnitude and the numbers of exemptions in 1671 gives a picture of the social structure; the vast majority of houses were apparently one-hearth houses whose occupiers lived perpetually close to, sometimes below, the recognized poverty-line. In 1664 39% of the households were exempt; this had fallen to 32% in 1671, which may have been partly due to stricter assessments, but is more likely due to increasing prosperity as there was a general shift upwards in the charges (see Table II). This shift is most apparent in the towns, especially Hereford.

TABLE I

Numbers of Houses in the Largest Places

	1671-73		1801	
	Numbers	%	Numbers	%
in the largest place	729	5.3	1392	8.2
in the 5 largest	2043	14.8	3466	20.4
in the 10 largest	2906	21.1	4478	26.3
in the 25 largest	4607	33.4	6801	40.0
in the 50 largest	6881	49.8	9531	56.1
in the 75 largest	8663	62.8	11516	67.7
in the 100 largest	10073	73.0	13125	77.2
in the 125 largest	11201	81.2	14350	84.4
in all 239 places	13800	100.0	17001	100.0

TABLE II

Numbers of Charges of Each Magnitude

	1664 L.D.		1665 L.D.		1671 M.	
	Returned	Adjusted	Returned	Adjusted	Returned	Adjusted
Exempt Hearths	5,156	5,239	—	5,467	4,387	4,424
1	4,295	4,340	4,180	4,217	4,997	5,034
2	1,668	1,689	1,646	1,655	1,931	1,940
3	807	812	809	816	1,090	1,092
4	459	464	422	424	581	582
5	239	243	202	206	309	310
6	128	129	127	129	160	160
7	77	78	67	69	102	103
8	56	57	53	53	67	67
9	42	43	40	40	61	61
10	21	21	25	25	27	28
11	18	18	18	18	28	28
12	8	9	11	11	10	10
13	8	8	6	7	8	8
14	9	9	9	9	7	7
15	6	6	9	9	8	8
16	1	1	1	1	2	2
17	3	3	2	2	3	3
18	1	1	1	1	4	4
19	—	—	—	—	1	1
20	1	1	1	1	2	2
21-25	(23)1	1	(23)1	1	(21)1	1
26-35	(28,35)2	2	(28,30(2	2	(28,35)2	2
over 35	(48,48)2	2	(40,48)2	2	(48)1	1
Charged houses	7,852	7,937	7,632	7,709	9,402	9,454
Total houses	13,008	13,176	—	13,176	13,789	13,876
Charged hearths	16,327	16,511	15,788	15,931	20,123	20,212

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[8] House of Commons Sessional Papers, *Abstract of Answers and Returns pursuant to Act 41 Geo. III, for taking an account of the Population of Great Britain in 1801, Part I: England and Wales*, 140, vi, 813 (1801), 128-136.
[9] 15 Car. II, c. 13, and 16 Car. II, c. 3.
[10] John Price, *An Historical Account of the City of Hereford*, (Hereford, 1796), 58; Isaac Taylor, *Plan of the City of Hereford*, (1757). The 1757 figures from both sources require correction.
[11a] Figures for 1673 are given only where the return is legible and complete.
b Includes Foy.
c Probably in Kentchurch.
d Foy included with Eaton Tregoes.

1671 : Numbers of Charges of Each Magnitude

	Total Houses	Over 10 (all)	10	9	8	7	6	5	4	3	2	1	Exempt	Certificates & Continued Hearths	Total Charged Houses	Net
Stroxsh Hundred																
Avebury & Hopton Sch	42			1	2											
Bedenham	126	1 (14)														
Bredenbury	17															
Burmarsh	115	1 (11)			1		1									
Callington	28															
Hampton Charles	25															
Much Cowarne	86					1										
Pelton	18															
Ceriadon Bishop	14						1									
Linton	78															
Marden & Amberley	145	2 (14,15)			1											
Moreton	73	1 (15)														
Oke Pychard	23															
Peperstow	95							1								
Sippey, Perry and Hide	68					1										
Stanford Bishops	49															
Stanford Kings	31															
Stoke Bliss	23															
Stoke Lacy	14							1								
Sutton	41	1 (11)														
Tedston Delamere	83							2								
Tedston Wafer	30							1								
Thornbury	15															
Ullingwick & L. Cowe	41	1 (11)						1								
Weston	40															
Whitbourne	17															
Wisdow	109	1 (11)						2								
Wolfelow	41							1								
Yarkhill	85	1 (11)						2								
Yazor	15															
	1460	9	2	2	4	6	14	28	62	111	177	322	494	Nil		

	1662 Michaelmas		1664 Lady Day		1664 Michaelmas		1665 Lady Day		1671 Michaelmas		1693 (b) Lady Day		1801 Census		
	Charged Hearths	Charged Houses	Charged Hearths	Total Houses	Charged Hearths	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Total Houses	Charged Hearths	Total Houses	Inhabited Houses	Persons
Wormelow Hundred														
Allensmore	57	47	56	43	73	65	44	63	46	86	46	79	79	416
Canon Frome	43	23	34	21	34	29	19	29	19	51	23	43	21	119
Castle Frome	81	41	58	37	53	51	34	52	33	80	37	48	42	245
Fencott	77	49	56	43	76	77	48	75	48	103	53	66	(a)	(a)
Fromes Hill	139	86	146	82	170	126	78	128	79	202	84	100	100	787
Hampton Bishop	113	58	70	52	78	101	55	103	54	121	54	63	63	92
Hereford	73	47	67	45	102	67	46	67	46	94	50	115	115	119
Holme Lacy	85	47	69	46	78	77	45	77	45	96	46	73	73	576
	668	352	538	371	671	591	369	594	372	833	393	587	493	2447
Greytree Hundred														
Aston Ingham	72	46	63	45	81	60	47	60	43	94	41	87	79	416
Brampton Abbotts	34	19	38	22	29	38	20	38	20	42	21	21	21	119
Eaton Tregoes	42	14	42	14	23	41	14	41	14	41	13	20	(a)	(a)
Fromehope	107	51	113	77	104	114	61	112	60	133	53	83	42	245
Hope Mansell	26	18	17	12	23	18	12	18	12	34	18	22	100	787
How Caple	29	12	38	9	20	35	16	34	13	33	14	16	16	92
Linton	87	37	69	38	82	66	35	68	36	95	44	76	76	119
Lea	27	14	21	12	34	24	13	24	12	29	13	13	13	576
Mordiford	151	94	100	61	91	112	71	112	71	148	91	110	110	100
Much Marcle	181	74	199	91	130	178	73	177	74	227	105	158	158	645
Putley	25	17	20	17	22	25	17	25	18	26	16	25	20	779
Ross Borough	373	138	396	164	228	365	135	368	134	464	215	221	(a)	(a)
Ross Foreign	90	36	101	47	84	88	35	88	35	122		54	54	145
Sellers Hope	33	19	32	19	23	33	20	31	19	40	21	26	26	2447
Upton Bishop	86	45	69	40	70	73	45	76	51	98	58	75	75	160
Walford	101	38	114	54	80	101	41	100	40	126	52	105	105	553
Weston under Penyard	66	29	67	30	52	71	37	70	37	97	49	67	67	725
Woolhope	134	86	117	69	131	138	87	137	86	157	103	152	152	571
	1464	787	1648	821	1263	1580	775	1589	759	2016	929	1310	1304	769
													1954	9757

1671 : Numbers of Charges of Each Magnitude

	Total Houses	Over 10 (all)	10	9	8	7	6	5	4	3	2	1	Exempt	Certificates & Continued Hearths	Total Charged Houses	Net
Ewyas Lacy Hundred																
Craswall	79						1			6	11	24	33	6	55	89
Cusop	43							2	4	5	12	8	18		32	57
Llancillo and Rowlston	48								2	8	13	12	12	6	38	48
Llanveynoe	69								2	3	16	14	12	2	58	70
Longtown	116					1		3	7	18	26	26	16	9	87	103
Michaelchurch Escley	66							1	4	14	21	16	9	9	55	66
Newton	75							1	2	9	16	22	6	3	54	60
Walterstone	59									6	10	21	27		59	63
	495					1	1	7	19	50	125	134	142	35	400	519
Greytree Hundred																
Aston Ingham	79								1	3	6	9	26			
Brampton Abbotts	21															
Eaton Tregoes	42															
Fromehope	100															
Hope Mansell	20															
How Caple	16															
Linton	101															
Lea	14															
Mordiford	129															
Much Marcle	(a) * 140															
Putley	20															
Ross Borough	521															
Ross Foreign	31															
Sellers Hope	99															
Upton Bishop	162															
Walford	95															
Weston under Penyard	164															
Woolhope	1954															

	1662 Michaelmas		1664 Lady Day			1664 Michaelmas		1665 Lady Day		1671 Michaelmas		1671 : Numbers of Charges of Each Magnitude											1673 (b) Lady Day		1801 Census	
	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Over 10 (a)	10	9	8	7	6	5	4	3	2	1	Exempt	1000s placed & Con-cealed Hearths	Charged Houses	Total Houses	Inhabited Houses	Population
Grimsworth Hundred																												
Bishopstone	37	22	36	21	33	36	21	36	21	40	21	31		1						1	2	3	14	10	2			31	172
Breinton	37	14	31	14	30	30	12	30	12	46	21	30			1		1				3	5	11	9		24	32	38	228
Bridge Sollers	26	12	26	17	16	28	12	28	11	27	11	15		1							2	3	5	4				7	53
Brinsop	31	13	30	12	19	30	13	30	13	39	18	28	1 (13)						1		1	3	12	10	1			19	114
Brobury	8	6	15	11	22	16	12	16	12	22	12	23				1					1	1	9	11	1	11	22	16	79
Burghill	99	44	95	44	72	92	41	92	41	106	49	88			1	1	1		3	3	5	5	30	39	1	49	91	120	639
Byford	39	17	38	17	37	41	18	40	19	52	23	43					1	1	1	1	3	5	11	29		22	42	42	203
Canon Pyon	101	42	97	46	80	96	46	95	46	123	59	100			2	1	1	1		3	6	9	36	41	3	62	97	128	621
Credenhill	33	16	27	11	23	31	14	31	14	36	18	24		1						2		3	12	6		20	26	32	167
Hampton Bishop	86	38	83	36	67	82	39	82	40	99	47	69				1			1	3	2	7	8	25	22	8	52	76	84	471
Holmer and Shelwick	102	52	89	45	61	94	48	93	45	107	47	67							3	3	2	6	7	24	20	1			76	368
Kenchester	37	11	35	10	18	36	11	36	11	40	13	17	1 (11)			1					2	1	2	6	4	1			17	85
Mansel Lacy	45	35	59	36	56	48	31	49	30	61	40	55								2		3	7	28	15	1			55	276
Mansel Gamage	35	14	39	15	34	40	16	36	15	43	21	28			2							1	4	14	7	4	22	36	24	120
Monington	37	11	37	11	20	37	11	36	11	40	13	20	1 (21)						1			1	1	9	7	2			27	135
Moreton-on-Lugg	41	13	40	12	28	52	24	52	23	53	25	31		1		1				1	1	1	3	17	6				14	83
Norton Canon	47	8	55	27	70	48	25	46	24	73	40	79						4			1	4	2	29	30	7			57	282
Pipe and Lyde	32	17	32	14	27	34	21	31	20	34	29	29									2	2	4	12		1	21	27	26	119
Stounton and Letton	63	36	62	33	51	60	31	62	35	74	47	89						1	3	2	4	4	35	22	3			80	430
Stretton Sugwas	27	7	22	5	14	23	7	23	7	30	10	21	1 (11)							1	1	1	1	5	11	3			27	138
Wellington	103	37	111	39	64	87	36	83	35	142	74	103	1 (11)				1		2	1	3	6	16	44	29	4			120	547
Wormsley	19	8	20	9	14	19	8	19	8	27	11	15					1		1		1		1	7	4				25	122
Yazor	44	23	44	24	45	40	24	45	23	64	36	47			1					1	2	1	5	26	13	3			34	195
	1129	496	1125	504	935	1100	521	1093	518	1375	678	1014	3		4	2	3	4	14	23	59	61	192	421	188	46			1100	5619
Hereford City	1265	352	1230	361	769	903	304	1158	376	1863	564	729	9	(2x11) (3x11) (2x12) (1x20)	9	12	12	14	19	43	65	94	152	127	166	13			1392	6828
Huntington Hundred																														
Bach	82	43	62	41	66	64	37	66	40	105	54	75						1	1	3	3	6	21	22	21	2	53	85	28	164
Brilley	80	40	85	46	95	80	45	76	44	91	52	80					1				3	6	12	30	28	7	52	84	95	467
Clifford	79	37	70	40	68	69	38	65	39	92	43	83					1	3			3	5	9	22	40	3			152	627
Eardisley	123	62	111	62	101	70	36	101	58	135	65	110				1	1				8	7	11	36	45	7	69	114	104	575
Huntington	39	22	38	21	28	39	22	39	21	45	20	36							1	2	4	7	6	16					38	209
Old and New Kington	371	160	220	102	128	340	164	201	101	334	145	258	1 (12)			1	1	2	2	7	10	20	43	58	124	7			289	1424
Bradnor, Chickward & Hergest			103	66	78			109	63	149	86	97		1			1			1	5	5	18	55		6			131	638
Whitney	58	20	53	25	36	50	19	50	19	58	22	50	1 (17)	1						1		2	3	14	37	3			44	199
Winforton	48	25	57	30	50	53	27	53	27	55	30	69	1 (11)							1	1	2	4	21	29	4			32	179
	880	409	799	433	640	765	368	760	412	1064	517	857	3		2	2	3	5	6	12	33	57	128	264	340	39			985	4492

	1662 Michaelmas		1664 Lady Day			1664 Michaelmas		1665 Lady Day		1671 Michaelmas			1671 : Numbers of Charges of Each Magnitude												1673 (b) Lady Day		1801 Census	
	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Over 10 (a)	10	9	8	7	6	5	4	3	2	1	Exempt	1000s placed & Con-cealed Hearths	Charged Houses	Total Houses	Inhabited Houses	Population
Radlow Hundred																														
Ashperton	35	24	30	21	43	33	21	33	22	38	25	50								1	3	4	17	25	4	25	51	63	309
Aylton	21	11	20	9	16	20	10	20	10	24	13	18							1		2	3	7	5	2	13	18	14	63
Bishops Frome	53	19	52	18	43	63	29	64	30	47	26	36							3	1		6	16	10	1	27	57	120	765
Bosbury	78	29	*missing*			68	27	66	27	94	39	74			1	1	1		2	4	3	8	19	35	4	35	105	74	411
Canon Frome	25	10	26	10	18	26	10	25	10	28	11	18	1 (11)								2	3	5	7				18	85
Castle Frome	47	20	48	21	25	43	18	42	17	46	19	23	1 (13)						1		1	2	3	11	4	1	19	24	30	190
Coddington	43	24	40	23	40	40	21	43	23	37	20	40									3	3	4	11	20		21	43	28	194
Colwall	139	67	130	68	84	127	66	127	66	124	65	102					2			1	3	10	12	37	37	3	65	128	111	635
Cradley	192	103	180	97	121	189	103	181	103	198	110	166							3	2	7	10	24	64	36	15	110	165	222	1317
Donington	22	13	24	12	16	24	12	23	11	24	11	20							1		2		2	6	9		13	22	22	121
Eastnor	92	42	*missing*			89	42	85	45	82	46	62	1 (12)								1	3	1	10	30	16	7	46	70	71	384
Egleton	32	25	26	18	28	12	7	11	6		*missing*																		29	152
Evesbatch	57	20	55	19	30	57	19	57	19	57	19	31		1				1			2	3	2	2	6	12	8	19	31	13	85
Halmonds Frome	43	18	43	16	28	46	15	43	16		*missing*																			Bishops Frome.
Ledbury Borough	295	97	291	95	227	291	94	260	91	314	109	205	2 (12 15)			2	1	2	4	7	10	22	23	36	96	10	104		577	3058
Leadon and Hatfield	50	23	53	22	47	56	25	54	27	59	28	42	1 (11)							2	1	4	2	10	14	1	28	42	Ledbury	
Little Marcle	25	15	24	13	23	24	14	24	13	33	15	22	1 (11)								1	1	3	9	7		15	22	20	128
Lugwardine	91	49	83	41	49	80	44	90	46	101	46	57	1 (13)				1	1	1		3	3	11	20	11		45	59	89	585
Moreton Jeffreys	17	10	15	9	13	16	10	15	9	14	9	10								1			1	7	1		11		9	64
Munsley	23	11	22	10	22	21	11	20	11	22	11	18								1		3	1	6	8		30	36	30	159
Pixley	41	12	36	12	12	38	13	37	13	40	12	18			1			1	1	1			2	5	6	2			16	107
Stoke Edith	60	23	58	24	50	57	22	57	22	62	26	60	1 (13)					2		1			4	10	24	4			47	258
Stretton Grandison	46	14	49	15	25	46	12	46	11	48	10	16	1 (13)		1	1					2	1	3	1	6	3	42	66	25	178
Tarrington	58	44	54	40	71	65	44	66	44	74	49	75									4	3	7	35	26	7			78	431
Upleadon	71	33	73	36	56	73	35	74	37	75	35	58						1		1	3	5	11	14	23	7	34		67	365
Wallhills	59	20	58	21	31	61	22	60	23	55	25	38			1				1	1		6	1	15	13	3	31		Ledbury	
Wellington	76	30	73	29	48	72	30	68	24	64	23	33						1		4	5		4	9	10		23		Ledbury	
Much el	34	15	38	18	24	38	18	39	19	37	18	23								2	1	1	6	8	5		18		Ledbury	
Westhide	38	20	38	23	38	40	24	40	25	40	23	34								1	2	2	3	15	11				30	161
Weston Beggard	44	24	28	19	21	39	21	39	21	41	23	28					1			1		1	5	15	5		22	26	37	199
Yarkhill	57	40	56	35	51	59	40	57	41	61	43	54						1			1	2	5	34	11	1			70	337
	1964	905	1723	789	1308	1913	896	1867	882	1939	909	1422	20	1	1	3	7	11	12	35	62	93	173	361	313	83			1936	10251

	1662 Michaelmas		1664 Lady Day		1665 Michaelmas		1666 Lady Day		1671 Michaelmas		1671 Census	
	Charged Hearths	Charged Houses	Charged Hearths	Total Houses	Charged Hearths	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Inhabited Houses	Population
Brentford Hundred												
Almeley	96	34	89	34	62	91	33	85	32	114	46	664
Bisley	22	13	22	13	26	25	16	25	16	34	25	176
Bosley	74	31	71	29	70	80	29	81	29	112	51	846
Eardisland	107	55	91	51	107	93	51	93	51	145	87	744
Kimnersley	61	29	60	29	48	52	26	53	27	61	30	108
Kingsland	130	87	116	76	140	140	89	134	86	169	104	948
Kings Pyon	49	25	41	22	61	40	21	40	21	84	44	302
Letton	17	11	17	11	25	17	11	14	9	16	8	60
Lyne and Tomkop	24	11	11	5	14	23	12	22	11	31	15	132
Lyonshall	104	61	90	59	86	81	50	76	46	148	72	678
Monkland	51	25	43	20	43	49	25	46	27	64	35	190
Shobdon	88	44	78	44	78	73	40	73	41	104	57	496
Staunton and Shucklow	38	14	28	17	38	18	16	15	13	19	15	394
Stretford	17	9	17	9	16	19	10	18	10	22	12	44
Weobley	135	59	142	62	126	117	56	103	50	156	71	608
Pembridge Borough	94	41	78	41	92	85	45	82	42	107	54	670
Brookwood	25	14	25	14	24	26	14	25	14	28	17	190
Body and Weston	29	11	22	12	19	26	13	23	13	28	13	24
Marston	18	9	20	9	19	24	13	23	11	25	12	72
Moorcott	27	8	23	9	17	24	9	18	7	28	22	17
Nuse	54	27	46	20	32	47	18	46	18	54	35	229
	1263	602	1125	586	1141	1311	705	1095	568	1555	807	7425

	1662 Michaelmas		1664 Lady Day		1665 Michaelmas		1666 Lady Day		1671 Michaelmas		1671 Census	
	Charged Hearths	Charged Houses	Charged Hearths	Total Houses	Charged Hearths	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Inhabited Houses	Population
Wolphy Hundred												
Allensmore	73	43	70	42	65	70	44	68	41	89	51	88
Bacton	11	9	20	13	24	20	13	20	13	29	14	23
Blakemere	41	15	35	15	22	35	15	35	11	44	17	26
Bredwardine	54	29	50	26	61	50	29	50	27	80	41	67
Callow	21	15	22	15	21	21	14	21	14	21	13	19
Clehonger	45	20	43	19	41	42	19	42	18	58	36	47
Daffey	31	14	29	14	23	29	14	30	14	43	20	25
Dinedor	48	22	48	23	48	45	20	45	19	52	26	41
Dore	94	49	94	42	96	92	47	90	47	112	51	87
Dovaston	55	39	57	41	66	46	35	47	32	95	53	85
Dulas	19	7	17	8	14	17	8	17	8	31	9	12
Easton Bishop	45	24	46	27	51	46	27	45	27	63	36	53
Ewyas Harrold	46	32	43	31	65	36	25	35	24	51	27	51
Garaton	11	5	13	7	9	11	5	11	5	13	6	7
Holme Lacy	100	31	101	31	51	102	32	102	31	104	34	54
Kenderchurch	25	11	25	11	17	24	11	25	11	17	10	14
Kentchurch	68	33	64	32	52	65	32	64	31	79	35	52
Kingstone	45	27	39	23	49	45	28	40	24	55	33	39
Lower Bullingham	29	19	28	16	28	26	17	26	17	28	19	28
Madley	141	79	134	64	140	137	77	134	73	184	88	122
Moccas	38	28	37	27	41	37	27	37	27	44	30	38
Peterchurch	100	59	88	51	102	95	55	93	54	120	58	113
Preston-on-Wye	54	25	56	25	50	40	23	40	23	65	28	37
Thornton	17	7	17	8	17	17	8	17	8	18	8	14
Turnastone	7	4	9	4	8	8	4	8	4	7	3	9
Tyberton	28	13	28	13	18	28	13	29	14	41	19	32
Upper Bullingham	26	11	26	11	20	26	11	26	11	27	13	18
Vowchurch	63	23	58	25	49	62	20	63	24	71	25	53
Wormbridge	23	8	21	6	23	22	7	23	7	28	10	23
	1358	707	1340	680	1281	1257	680	1282	659	1650	835	1248

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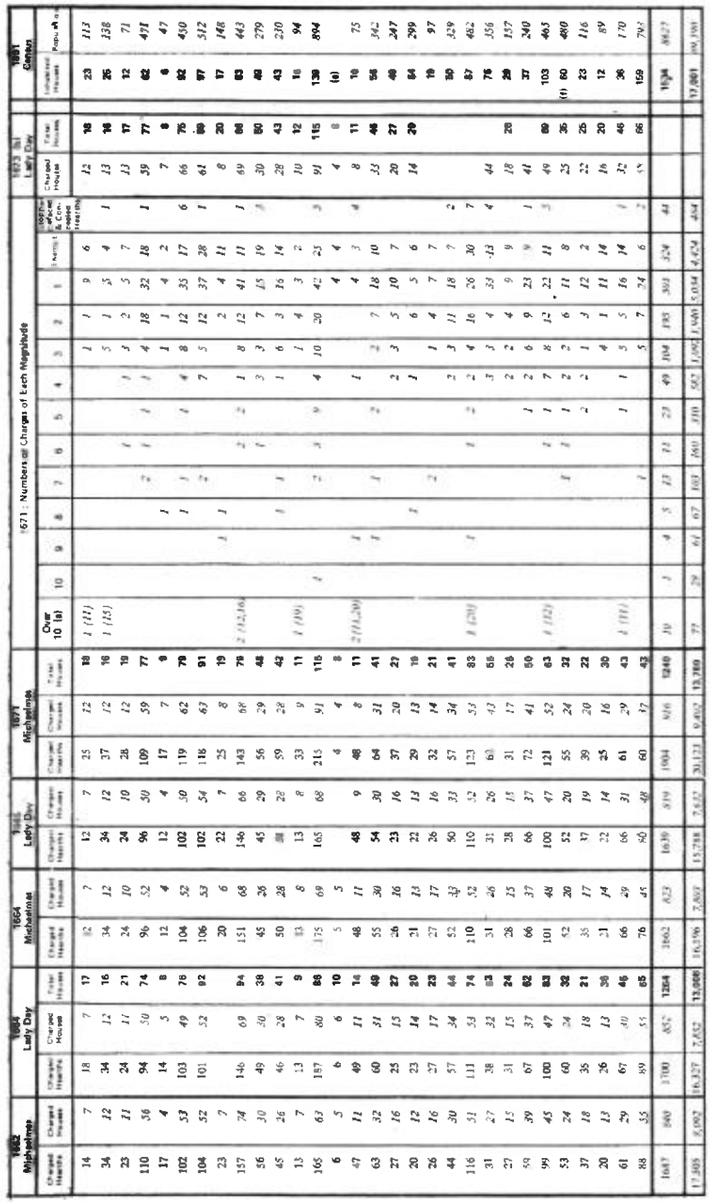
Wigmore Hundred																												
Adforton	35	25	32	27	27	43	34	31	25	40	29	38								4	3	20	9	2	32	41	45	214
Aston	13	8	17	11	26	13	8	13	8	16	11	27							1			1	9	16	14	32	12	51
Aymestrey	60	32	60	31	41	58	29	59	31	60	32	41						1	1	2	3	7	18	9	1	33	43	118	646
Brampton Bryan	28	10	36	10	13	41	11	40	12	46	13	24	1 (18)			1			1	1		3	6	11		13	17	21	177
Brockton and Coxhall	24	15	24	15	20	24	15	24	15	23	14	19			1							2	11	5		14	20	19	134
Burrington	57	27	62	31	38	55	27	57	29	68	35	38					2			2	4	7	20	4		34	35	52	227
Combe and Byton	45	29	52	27	38	49	24	47	23	53	25	36						2	1	1	2	7	12	10		28	34	40	208
Downton	31	13	28	12	12	25	13	25	13	28	14	18						1			2	5	6	4	2	14	20	14	102
Eaton	49	18	41	21	28	33	16	31	14	42	18	21					3				1	4	10	3		18	24	14	88
Kimham	47	25	45	25	33	44	24	44	24	45	24	26			1			1		1	1	4	16	1		25	31	20	112
Kinton	22	12	23	13	21	23	13	22	12	27	18	24									2		9	13	6	18	26	Leintwardine	
Knill and Harpton	36	19	32	17	28	32	16	31	15	36	16	29						3				1	3	9	13	17	26	26	149
Leinthall Earls	44	14	45	16	19	44	14	43	13	45	15	19	1 (11)						1	1	1	2	4	5	4	16	20	Aymestrey	
Leinthall Starkes	36	17	37	18	18	36	16	35	16	35	17	32					1			1		3	2	10	15	18	32	27	136
Leintwardine	84	43	82	47	70	76	48	76	48	96	57	103			1						1	9	11	25	46	3	63	95	127	625
Letton and Newton	23	17	25	18	26	23	17	22	15	25	19	27									1		3	15	8		20	27	Leintwardine	
Lingen and Limebrook	56	33	63	41	68	52	34	50	32	61	38	68										6	11	21	30	3	41	73	61	324
Litton and Cascob	26	15	29	17	26	25	16	24	15	31	16	24						1			1	2	3	9	8		17	26	14	85
Marlow and the Wood	11	9	13	11	11	11	9	11	8	11	8	12										1	1	6	4		9	12	Leintwardine	
Mowley	48	20	58	27	42	47	20	43	17	59	25	40					1	1	1	1	3	4	12	15		29	48	Stapleton	
Nether Lye	16	8	18	10	10	17	9	17	9	15	8	10									1	2	4	11		6	17	Leintwardine	
Pedwardine and Boresford	27	22	31	24	33	26	21	26	22	30	25	30										2	1	22	5	27	33	16	94
Peyto, Stanway and Grange	20	9	19	7	8	20	8	16	6	19	8	9			1							1	1	5	1	9	10	Adforton	
Rodd, Nash and L. Brampton	46	17	50	18	31	47	18	46	16	52	18	25			1					3	2	2	4	6	7	19	26	18	129
Stapleton and Frogstreet	54	22	48	20	20	41	17	40	17	54	24	28			1		1	1			1	2	4	14	4	28	32	26	179
Titley	68	32	63	29	29	64	35		missing	82	38	40			1		1	2			3	4	8	20	2	32	43	47	290
Walford	22	9	22	10	16	19	10	20	11	22	13	16										4	1	9	3	13	17	37	187
Wigmore	115	67	98	55	83	105	62	101	62	123	70	105				1				1	4	8	34	42	35	3	68	99	63	285
Willey	27	14	39	15	20	36	17	35	17	36	16	22									2	4	6	4	6		17	20	18	102
Wilton and Tripplefon	23	12	23	12	14	23	12	23	12	25	13	14				1						1	3	8	1		13	14	Leintwardine	
Yeaton	43	21	38	19	30	39	20	39	19	42	22	30				1				2	1	1		17	8	2	24	32	Aymestrey	
	1229	634	1253	634	906	1191	633	1091	578	1347	699	1003	2			4	6	10	14	15	26	74	133	415	304	16	729	1024	935	4491

	1662 Michaelmas		1664 Lady Day			1664 Michaelmas		1665 Lady Day		1671 Michaelmas			1671 Numbers of Charges of Each Magnitude												1673 (b) Lady Day		1801 Census	
	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Charged Hearths	Charged Houses	Total Houses	Over 10 (a)	10	9	8	7	6	5	4	3	2	1	Exempt	Ecclesiastical Exempt & Certificated Hearths	Charged Houses	Total Houses	Inhabited Houses	Population
Wolphey Hundred																												
Brimfield	70	41	56	37	61	57	36	57	36	68	45	65						1			5	8	31	20				82	415
Croft	18	2	18	18	18	18	2	18	2		missing																	3	18
Docklow	63	26	61	26	34	63	26	62	25	63	25	34				1		1	1	4	4	2	12	9	3			52	296
Eaton, Hamnor & Stretford	49	16	51	19	34	49	17	47	17	56	18	28	1 (18)					1	2			1	6	7	11	1		25	146
Edvin Ralph	45	23	43	23	27	43	23	41	20	45	24	26									1	5	8	10	2	1		27	159
Eye, Ashton and Morton	61	25	60	25	44	62	26	61	26	68	33	50				1	1	1	1			3	7	19	17	6		86	297
Eyton	21	8	21	11	25	25	11	25	11	37	18	19						1			1	3	5	8	1	1		39	147
Farlow	30	19	24	19	27	23	18	23	18	29	20	43										2	5	13	23	1		84	301
Hatfield	41	19	41	19	24	42	19	42	19	42	22	25	1 (11)							1		2	2	16	3	2		31	172
Hide	32	12	33	16	38	32	15	32	15	48	22	29								1	2	2	5	12	7			Ivington	
Hope and Hampton	79	19	79	17	27	79	20	70	19	81	21	34	1 (35)	1						1	1	3	4	10	13	1		82	420
Humber	38	17	39	18	30	37	17	34	16	41	20	24							1	1	1	4	1	12	4	2		42	203
Ivington	80	26	80	25	48	75	24	43	13	78	27	45					1	1	2	4	6	8	5	18	9			107	544
Kimbolton	96	39	60	28	49	65	28	65	28	97	45	58						1	2	8	5	5	24	13	10			100	504
Laysters	39	23	39	23	23	40	23	40	27	48	26	30							1	2	2	8	13	4				32	184
Leominster	644	241	579	217	446	570	254	550	228	691	280	420	2 (13,14)			2		4	6	11	29	53	79	94	140	15		687	3019
Little Dilwyn	72	30	74	29	48	78	30	missing		104	40	49	1 (33)			1			1	2	2	10	5	18	9	2	42	84	Dilwyn	
Little Hereford	66	36	61	37	58	47	38	67	38	65	37	61							2		2	3	6	24	24			72	417
Luston	27		32	13	21	33	13	33	13	35	14	22	1 (12)									3	4	6	8			28	156
Ludford	41	13	37	13	13	40	13	40	13	42	13	19	1 (18)									1	2	5	4	6		32	252
Luston	63	32	57	31	72	57	30	56	29	80	48	63						1	1			2	2	13	29	15	7	66	342
Middleton on the Hill	52	23	51	22	38	47	22	47	23	69	40	55										3	7	6	24	15	1	59	83	58	308
Newchurch	48	24	43	24	38	39	24	37	23	47	30	38						1				1	1	6	21	8	1			47	222
Orleton	69	44	67	44	93	77	49	76	48	91	56	88					1			1	3	1	13	37	32	5	56	89	95	507
Pudleston and Whitt	32	10	26	9	16	32	10	31	10	33	12	15			1			1			2		1	7	3		13	18	31	174
Richards Castle	55	29	58	28	33	52	27	54	28	66	34	50	1 (33)						1	1		3	3	25	16	4	35	48	75	509
Rochford	38	23	34	23	38	37	23	37	23	40	23	35									1	5	4	11	12	1	27	34	47	258
Sarnesfield	33	15	27	10	23	32	10	27	10	34	17	21	1 (11)							1			3	12	4	2	14	18	19	116
Stagbach and Clawstree	25	13	25	13	19	29	14	28	10	35	17	21									1	6	3	7	4		19	23	33	180
Stoke Prior	99	50	95	47	58	91	45	92	47	97	46	66				1	1			1	3	4	10	25	20	2	50	71	70	422
Upton	26	9	26	10	21	28	9	27	9	43	20	29	1 (25)								1	2	2	14	9	2	21	30	Little Hereford	
Wharton	98	18	71	18	37	71	18	66	19	78	25	28	1 (16)			1		1		1	4	2	4	11	3	4		46	269
Yarpole	76	32	69	39	72	71	41	71	40	91	56	82								1	3	8	6	18	26	4		114	523
	2272	949	2130	915	1660	2141	955	1992	956	2537	1174	1673	12	1	1	6	4	10	20	32	82	139	247	603	499	87			2850	11894



Ludford Paper Mill

By T. C. HANCOX

THIS former paper mill was, without doubt, in the county of Herefordshire, in its heyday, lying as it did on the Hereford bank of the river Teme. That its siting under the lee of the Shropshire border town of Ludlow had its commercial advantages none can deny, but it is as true today as it was in times past that none enter into business for reasons of sentiment and an assured market for his wares is something every manufacturer dreams and schemes for.

The officers of the Hereford Collection of Excise appear to have used Ludlow as a focal point when giving this mill the identifying no. of 495, but from this choice much confusion in name and identity appear to have arisen over the years. However, it is to be noticed that this said mill, and predecessors on its site have enjoyed the names of The Lord's Mill; Bragg's Mill; Sheet Mill; Grymes Mill; Ashton's Mill; Day's Mill; Chapman's Mill; Ludford Mill, as well as the incorrect Ludlow Paper Mill.

It has not been found easy to establish just when the particular paper mill came into being, or whom the owners or operators were, and the date made now as a starting point can but be 'Pre-1718', for in that year a newspaper advertisement[1] offered a 'Papermill, with 26 hammers, To Let'. Alas, we do not yet know by whom the earlier works were operated, or of the person or persons who took up the lease as a result of the advertisement, or the lengths or durations of their occupancy. It would appear though that the trade was something of a fluctuating one, perhaps, interspersed with periods of idleness, for the mill was again being advertised to let in July 1732[2] but now having only twenty hammers for working.

An advertisement of the 11 August 1747[3] in a newspaper informs that an apprentice lad, George Davenport, aged about eighteen years, had run away from the paper mill commonly called Chapman's Mill, near Ludlow. It was supposed that one John Lawrence, who had worked at Chapman's as a journeyman, had enticed him away. Absconding, enticement, and harbouring were all punishable offences, and the law of the time could be very cruel.

The mill is indicated on a map of 1750, but this Chapman's Mill is advertised[4] 10 March of that year as being 'To Let', and the mill is said to be . . . ' . . . one of the best works this side of the Kingdom'; inquiries were to be addressed to Somerset Jones, Esq., of Sheet, Ludlow. The mill is again shown on Taylor's 1754 Map of the county.

By the year 1771, names are beginning to emerge of the papermakers concerned with this mill, Thomas Hughes, papermaker, insured the paper mill against fire.[5] In earlier times if a mill had burned down due to some cause it had been customary for the victim to apply for a brief to solicit alms throughout the kingdom, which if granted took long to effect, necessitating the hiring of licenced mendicants to go from place to place, usually effecting their extractions by way of 'Retiring Collections' after church services, but their fees were such as to almost swallow up the whole of what was collected. 'Briefs' were finally outlawed, and self-assurance took their place. Through Inland Revenue records[6] we are made aware of this same Thos. Hughes, papermaker, took as his apprentice, Thomas Hughes, doubtless his own son.

Taylor's Map of the county, dated 1786, indicates continued presence of the paper mill, and by the year 1800 one of the papermakers bears the name of Richard Holland. The paper made was of a presentable quality, bearing watermark 'Holland and Co. 1800', and is to be found on paper used for Charles Allnutt's *Poverty*, a poem, along with several others on differing subjects, chiefly religious and moral, published by J. W. Eddowes in Shrewsbury 1801. This small book of 60 octavo pages, was printed on a wove paper with a somewhat rough surface, but of good bulk and substance.

On 11 October 1803, Richard Holland, Richard Taylor and Richard Russell, partners, and papermakers at the mill insured their machinery and fixed utensils.[7]

A Shrewsbury newspaper of 17 January 1810,[8] records ' . . . on Wednesday last at the great age of 92, died Mrs. Mary Holland, mother of Mr. John Holland, of the paper mills, Ludlow'. Holland and Co., papermakers, are shown in operation in *A Descriptive Tour of Ludlow* in connection with the papermaking industry of the area in the year 1811. Though Mr. John Holland is noticed in 1812, a Salop newspaper[9] announcing the marriage of Mr. John Harris of Ludlow Paper Mills to Miss Martha Griffiths, of Ludlow, indicates that a partnership change had taken place.

The year 1816 was a bad year for papermakers, as, following a slump in the iron and other industries following on the ending of the Napoleonic Wars, watermills formerly used as ironworks became vacant, and owners of these mills sought to engage them in other trades, and competition became acute. Ludford Mill did not change its industry, but it changed the partners operating the mill. Now the partnership is Holland and Russell, and Richard Holland this year built a Paper-drying House.[10] However, things were not going well for the owner of the mill, for on the 22 July 1816, Salt, agent for the Hon. William Hill, drew up an agreement for the sale of Ludlow Paper Mills, with fixtures, to Edmund Charlton.[11]

A Customs Excise Letter of 1817, indicates the Ludford Paper Mill has been given the number of 495 in registration, and included in the Hereford Collection. Further, this has taken place under a name of 'Chapman's Mill', a name more appropriate perhaps a hundred years earlier. The 'proprietors' (leasers) were shown as Philip Burt Adams and Thomas Colerick, signifying a short partnership

of their predecessors. In 1821, a second Ludford paper watermark appears, as 'ADAMS & Co. 1821', on a paper of good quality. An example is to be found in Charles Augustus Hulbert's sixteen page pamphlet *Bodhilin . . . A descriptive sketch* (Shrewsbury, Charles Hulbert, 1827). Proctor and Jones *History and Antiques of Ludlow* (1822), mentions (p. 192) that there is a considerable business done in papermaking. The papermakers then shown were 'Adams, Colerick and Henley, Ludlow Mills'. These partners are unchanged.[12]

In 1830, a newspaper records[13] the death of Mr. Thomas Colerick, papermaker, 'who died at the age of 66, "awfully sudden" at his house, Huxburrow, Ludlow'. In 1831,[14] a newspaper, of 4 March, records the death 'lately' at the age of 67, of Mr. John Henley, partner in the firm of Messrs. Adams and Co., papermakers, of Ludlow. Later in the same year an Excise Letter shows Mill no. 495, George Wood and Thomas Wade, but a year later the Excise Letter shows John and Thomas Wade in possession. In the light of what follows we may take it that Mr. Adams is no longer in the business. In April 1835[15] a newspaper mentions 'the late Mr. Adams, of Hanmer, Flint'. The Mill is shown on Bryan's map of that year. The partners are still John and Thos. Wade.

A newspaper dated 29 November 1837[16] indicated a Thomas Wade, of Birmingham, papermaker, had married, and it is about this time his name ceased to be mentioned in local directories. He may have retained shares in the family partnership though.

Ludlow Paper Mill is shown as being in operation, and a shared partnership in a paper mill at Lower Mellington, Mont.,[17] may have existed. This second mill was near Churchstoke, and an offshoot from a principal mill, perhaps to jointly satisfy aspects of the Birmingham paper trade. In 1844 a 'Jno Wade' is noticed, perhaps a representative of the younger generation. His residence shown as 'Temeside'.

On 5 June 1847[18] the paper mill was ordered to be sold to pay the debts of C. L. Charlton (prime landlord) at the time he died. This must have made things very uncomfortable for the papermakers, having the mill sold over their heads, being possibly only saved by the extent of their lease on the premises. However, if the business had been a family concern earlier, in directories of Shropshire for 1850 and 1851 'John Wade' is shown as sole proprietor of the paper manufactory at Ludford. (See also note Ludford Tithe Apportionment, 1846).

A contributor to *Bye-Gones* under the date of 18 January 1905, wrote to an effect that in the 1850's Ludford Mill was owned and operated by 'Jn Wade'. He added that he recalled that fifty or sixty years earlier (than 1905) 'Old Tommy Burns and Solomon Baker worked at the Mill'. He adds 'I have seen them both delivering bales of blue & puce sugar papers to firms (named) in Ludlow'. Another contributor of like period wrote of a Mr. W. H. Bessell of Gravel Hill, Ludlow, who had in his possession a sheet of notepaper manufactured at these (Ludford) mills, which was given to him by the late Mr. George Cocking, J.P.

In 1852 Ludlow Paper Mill was shown as working, and having one beating

engine.[19] The trade was becoming a dying one hereabouts, more up-to-date machinery, driven by steam power was faster, and could produce more and better paper at less cost than the old-fashioned water power mill could. Rags and other requirements were becoming harder to come by, and in 1856 John Wade appears in a Ludlow directory as 'Rag Merchant, and Bone Dealer, Old St.' He may even have used some portion of the paper mill to grind the bones into artificial manure, for sale, to tide things over. However, the Excise Letter for 1860 still records mill no. 495, with John Wade, papermaker. In 1861[20] three persons only, two men and a woman, were engaged in papermaking in the Ludlow district, signifying its decline.

Before the year 1868 the Ludford Mills had ceased to be shown in books of reference, and one such book, written in 1878 informs, 'a good corn mill is situated on the site of the old paper-mill'.[21]

An 1871 Directory gives, under Ludlow, 'Holland James, Miller & Corn Dealer, NEW CORN MILLS', but without any indication as to where these new mills were, or by what means they were operated. Since the Holland family appears not to have had anything to do with Ludlow paper mills after 1816, it appears unlikely that a later generation would convert the old paper mill, *c.* 1870.

NOTE

A few of the foregoing references have been earlier used by the late Mr. L. C. Lloyd, of Shrewsbury, in his articles on Shropshire Papermaking, appearing in the Shropshire Archaeological Society Transactions of 1938 and 1950. Permission to refer to the articles was given by that author in his lifetime. The material appearing in the present article, is in the main original research, and sources are quoted in order that future students may follow up matters on which they wish to pursue to a greater degree.

Ludford Tithe Apportionment, 1846.

191. C. Lechmere Charlton, Esq., Exors. of, as landowner. Jn Wade, occupier. House and garden, with ½ the river adjoining.
190. Exors. of C. Lechmere Charlton, landowner. Jn Wade, occupier. Paper Mill and Byletts, with ½ the river adjoining.
192. Exors. of C. Lechmere Charlton, landowner. John Wade, occupier. Garden & Drying House.
193. Exors. of C. Lechmere Charlton, Esq., landower. John Wade, occupier. Meadow.

REFERENCES

1 *Worcester Postman*, 6 and 13 March 1718-19.
2 *Worcester Journal*, 7 July 1732.
3 *Gloucester Journal*, 11 August 1747.
4 *Ibid.*, 10 March 1750.
5 Salop Fire Insurance Policy no. 304. 828, 20 November 1771.
6 Apprentice Book. Public Record Office. Inland Revenue 1. Entry no. 28/26 1774.
7 Salop Fire Insurance Policy, no. 753.721. 11 October 1803.
8 *Salopian Journal*, 17 January 1810.
9 *Ibid.*, 4 March 1812.
10 Shrops. Record Office. Salt Papers. 11/420.
11 *Ibid.*, 11/122.
12 Tibnam's and Salter's Directories.
13 *Shrewsbury Chronicle*, 29 April 1835.
14 *Ibid.*, 4 March 1831.
15 *Ibid.*, 29 April 1835.
16 *Ibid.*, 29 November 1837.
17 *Montgomeryshire Collection*, XL. (1928), 4.
18 *Loc. cit.* in note 10.
19 House of Commons Papers, 1852.
20 Census Returns.
21 Partridge, *Handbook of Ludlow.*

The Birds of Burley Gate in the Parish of Ocle Pychard

By PETER McDOUGALL, A. J. SMITH and J. VICKERMAN

SUMMARY

1. *The habitat of the study area of mixed farmland is described.*
2. *The problems encountered in census work are discussed.*
3. *The status of the birds recorded at Burley Gate is described.*
4. *It is suggested that the low numbers of breeding birds recorded on the study area in* 1962 *and* 1964 *may be due in part to the depressing effect of sublethal doses of toxic chemicals. The migrant birds were not subject to the severe winters of* 1962 *and* 1963 *yet their numbers have continued to increase in step with the resident birds each year since the voluntary restrictions on the use of these pesticides in* 1962 *and* 1964.

INTRODUCTION

In Britain farmland is an important habitat of many birds. In modern farming the emphasis is inevitably for increased efficiency. Because of the complex ecological inter-relationships of farmland birds with their changing habitats it is of interest and importance to know what birds were present in a given area at a specific period in time.

This paper therefore records the birds observed at Burley Gate between the autumn of 1949 and the autumn of 1966 together with an account of the habitat.

STUDY AREA

The area covered in the survey is the 80 hectares bounded on the south and west by the Leominster and Bromyard roads from the Burley Gate crossroads. Bullock's Brook flows westwards along the northern edge and there is no natural boundary to the east (MAP).

The ground slopes downwards from 100 metres at its highest point along the Bromyard road to 75 metres along Bullock's Brook. It lies on the Red Downtonian series and the soil is a fertile heavy red marl which is largely impervious. The only buildings are situated along the Bromyard road. The ground is divided into fields by 10 kilometres of hedges which vary in height from 1 metre on the

roadside to 6 metres around the 4 hopyards. Some of the hedges around the fields of pastures have been allowed to grow tall to shelter stock. These hedges are thick and bushy above browse level. The hedges contain hazel *Corylus avellana* L., oak *Quercus* spp., ivy *Hedera helix* L., dogwood *Thelycrania sanguinea* (L.) Fourr., maple *Acer campestre* L., sycamore *A. pseudoplatanus* L., hawthorn *Crataegus monogyna* Jacq., dog rose *Rosa canina* agg., elder *Sambuca nigra* L., cherry plum *Prunus cerasifera* Ehrh., blackberry *Rubus fruticosus* L., sallow *Salix* spp., holly *Ilex aquifolium* L., elm *Ulmus* spp., ash *Fraxinus excelsior* L., spindle *Euonymus europaeus* L., honeysuckle *Lonicera peryclymenum* L., and along the brook some alder *Alnus glutinosa* (L.) Gaertner, but the chief plant is hawthorn.

Along the hedges are occasional ash trees pollarded for fence rails and hop poles. There are a few large oak trees and on the highest point of ground is a line of tall elm trees. Included in the area is a coppice of 2 hectares, largely sycamore, ash and oak. The sycamore and ash are coppiced for poles but the oaks have grown into tall standards. The ground cover is blackberry, bluebells *Endymion non-scriptus* (L.) Garcke, and red campion *Silene dioica* (L.) Clairv. The 4 hopyards total 12 hectares. 37 hectares are under other forms of cultivation, mainly cereals but small areas of varying size each year are given over to potatoes, mangolds and kale. One field of 3 hectares was planted with blackcurrant bushes until they were uprooted in 1964 and the field sown with cereals. Derelict cider orchards planted just after the Napoleonic Wars occupy 5.2 hectares. The rest of the ground (20 hectares) is permanent pasture.

Stock in the lower fields drink at the brook. At one time the beasts on the higher ground were watered from dewponds dug in the clay. Only one of these is in use now. Traces of two others can be seen, one as a slightly marshy area, the other as a bramble tangle in the corner of what is now a cultivated field. The other pastures now have troughs supplied with piped water.

METHOD

In the first years of this study the visits were walks of which records were made of the birds seen. No attempt was made to cover the whole ground on each visit or to count all the birds present. From the winter of 1961-62 a more systematic approach to the problem was begun. Three observers made regular monthly visits to the area from August to March, and weekly or fortnightly visits to the area from the middle of March to July. The ground was quartered by the three observers walking separately round the edges of the fields. In the fields with high hedges it was often necessary for an observer to be on either side of the hedge. At the end of each individual field check the observers met and correlated their results on the separate tracing of a 25 ins. to the mile map which was carried round on each visit.

During the breeding season the method was largely that described by Williamson (1967) and Williamson and Homes (1964). The basis of the census was the territorial male. Each male, singing or not singing, pair and nest were marked on the map for that particular visit by a letter code for each species and a

number for each individual. Where a bird, such as a yellowhammer, would sing from several points in hedges some distance apart its song posts were marked on the map and linked with arrows to show the flight paths.

The lie of the land, sloping downwards to the north, allowed the observers to stop frequently, to look, listen and count ahead, before going forward and disturbing the birds. Visits were made alternately in the mornings and evenings. They usually lasted four hours and began at dawn or ended at dusk. In addition to these regular visits it proved necessary to make extra visits to individual territories to find the nest and to define the boundaries from observation.

As the breeding season progressed a series of maps accumulated recording the position of the birds at each visit. All this information was then transferred to master maps for each species. On these it proved possible to map out the territory of each pair.

In the winter every bird in the area was counted. Because of the considerable amount of movement shown by birds during the winter the counts do not show all the birds which might have been present in the area during the whole day. For example morning counts might miss the skylarks which would return at dusk to roost.

METHOD PROBLEMS

Snow (1966) discussed the effectiveness of census methods and found that 8 visits to a farmland area of 150-200 acres (60-80 hectares) even by an experienced observer indicated on average only some 60-70% of the pairs or territories that will be recorded if twice as many visits are made.

Every effort was made during this study to organise field-work in the manner most conducive to accuracy in particular circumstances, and whilst an assessment of effectiveness in terms of percentage of birds located has not proved possible the following factors are relevant:

1. It was of special importance that one observer resided within the census area and was in close touch with local events and the farming community; in consequence incidental checks on specific or controversial points were a normal part of count procedure and, it is believed, added much to the overall accuracy.
2. Attention was given to count frequency and timing, i.e. counts were organised of necessity rather than on a calendar basis.
3. Most counts involved three observers and no full census, as distinct from check visits, was undertaken by less than two.
4. Thick cover was always approached simultaneously from two sides and the obvious advantage of this manoeuvre was often apparent in the field. It would have been useful for the benefit of the present exercise to have noted the significant number of birds only recorded by observation on the "wrong side" of such cover.
5. Location by sound, other than song, was always considered an important adjunct to other methods, some obvious examples being:—confirming the presence

and position of willow tit; fixing yellow wagtail in large fields; finding tree sparrow nest sites at long range through tracking flying birds located in the first instance by flight-note.

UNMATED MALES

Some species such as whitethroats did not present much difficulty. Unmated whitethroats appeared to move about over a more extensive area and to sing for a longer period of time than paired birds. They began to show up on the visit maps and a number of concerted visits by three observers to watch the bird would show the bird to be alone. In other species unmated males perhaps do not show up as clearly and could possibly lead to a certain amount of error.

INCONSPICUOUS SPECIES

Song thrushes were frequently silent for extended periods during the breeding season, and here it was important that one author lived on the study area and it is probable that most were recorded. A song thrush breeding in the observer's garden in 1963 only sang for the first time on the day its young left the nest.

Lesser whitethroats sing only for a short period after they first arrive and then become very secretive, when they are extremely difficult to observe or hear again until their broods leave the nest.

Semi-colonial species presented difficulties because of the larger area over which they roamed, but as these greenfinches, goldfinches and linnets nested later in the season than many other species the early visits tended to show on the species maps likely places where these finches would nest. It was necessary to make special visits for these birds. It was often found that not all the birds were nesting.

Blackbirds were reasonably easy to count in the orchards where they were densest. Their territorial activity was much in evidence in this optimum habitat. On the open farmland they were much less conspicuous and it proved much more difficult to separate the individual records of blackbirds one from another. Later in the study some ringing was attempted to help solve this problem but it proved to be very time consuming and the attempt was not persisted with. It was found to be a more profitable use of time to observe a particular bird for a period of time and map out its territory in this way.

NEST FINDING

If at all possible attempts were made to find the nests. It often proved possible to do this once the young were being fed if not before.

CHARACTERISTICS OF THE HABITAT IMPORTANT TO BIRDS

Herefordshire has as fine hedges as any part of the country. Hedge laying is a skill of which the local farmworkers are extremely proud and in which they compete at shows. The laid hedges provide good cover with a dense, impenetrable

top. Mechanical hedge trimming alters the growth characteristics of the hedges; in particular it leaves the top open enough to allow predators to find hedge nests easily.

The pollarded ashes at intervals along the hedges provide song posts while their saucer like tops surrounded by the rim of branches give cover to little owls and provide nest sites for mallard.

In winter the hopyards have a thick ground cover of chickweed *Stellaria media* (L.) Vill., on which the winter finch flocks feed. In the summer, although the ground in the hopyards is cultivated, a thick band of fat hen *Chenopodium album* L., grows around the edge.

The stubbles remain usually until early October when the end of hop-picking allows other farmwork to recommence. This allows the spilled grain and the *Polygonum* species which grow up quickly after the harvest to be eaten by the seed eaters. However, an easy harvest may allow time for the ploughing in of the stubble before the hop-picking begins in September.

The cider orchards of old, gnarled and often hollow trees provide nest sites for the green woodpecker, little owl, stock dove and jackdaws as well as tits, starlings and tree sparrows. Some varieties of apples fall less easily than others, occasionally leaving a whole tree of apples for the first winter flocks of the migrant thrushes.

Kale is cut as it is required to feed stock so that some is left standing for most of the winter providing a source of food and cover for some farmland birds.

The roots are gathered and stored under cover before November ends. Sheep are not folded over them.

SPRAYS

All the cereals are sprayed in spring with herbicides. Most seed bought from merchants was pre-dressed with dieldrin until the voluntary restrictions recommended by the Advisory Committee on Pesticides and other Toxic Chemicals in 1962 and 1964.

The hopyards receive the greatest attention. They are regularly dusted through the summer with sulphur to prevent downy meldew, and they are sprayed with an organo-phosphorus systemic insecticide.

No bird casualties have been found to have resulted from this spraying programme.

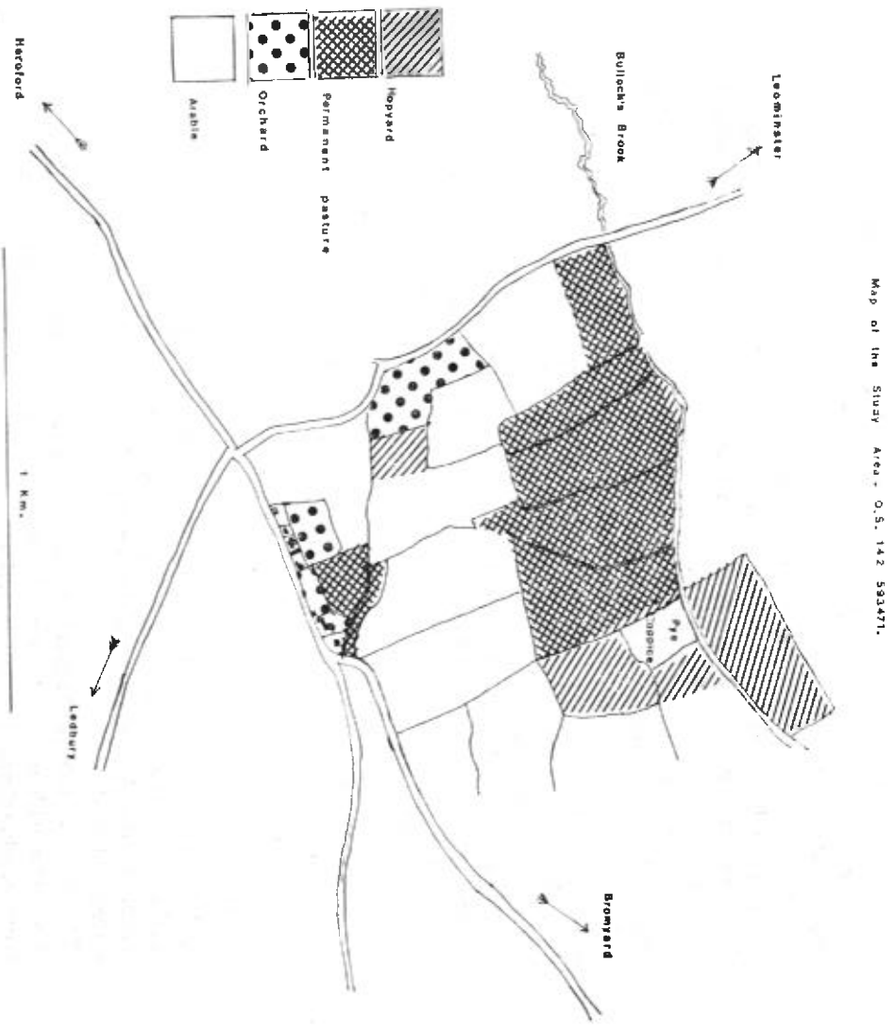


FIG. 8
MAP
The Birds of Burley Gate
The Study Area

RESULTS

TABLE 1. **The Status of Birds Recorded at Burley Gate Between 1949 and 1966**

Birds breeding on the 200 acres	Birds breeding in Herefordshire	Birds which may be found in winter on the 200 acres	Birds which may be found in winter in Herefordshire	Birds seen only on migration	Accidentals
Mallard	Heron	Lesser B-b. Gull	W-front. Goose	Wheatear	Ringed Plover
R. leg. Partridge	Teal	Common Gull	Golden Plover	Stonechat	Snow Bunting
Partridge	Mute Swan	Fieldfare		Whinchat	
Pheasant	Buzzard	Redwing			
Moorhen	Sparrow Hawk	Brambling			
Lapwing	Kestrel				
Curlew	Quail				
Stock Dove	Water Rail				
Wood Pigeon	Snipe				
Cuckoo	Black-h. Gull				
Little Owl	Turtle Dove				
Tawny Owl	Barn Owl				
Swift	Nightjar				
Green Woodpecker	L. S. Woodpecker				
G. S. Woodpecker	Sand Martin				
Skylark	Raven				
Swallow	Rook				
House Martin	Jay				
Carrion Crow	Coal Tit				
Jackdaw	Nuthatch				
Magpie	Mistle Thrush				
Great Tit	Nightingale				
Blue Tit	G'hopper Warbler				
Marsh Tit	Sedge Warbler				
Willow Tit	Goldcrest				
Long Tailed Tit	Meadow Pipit				
Tree Creeper	Tree Pipit				
Wren	Pied Wagtail				
Song Thrush	Grey Wagtail				
Blackbird	Redpoll				
Redstart	Reed Bunting				
Robin					
Blackcap					
Garden Warbler					
Whitethroat					
Less. Whitethroat					
Willow Warbler					
Chiffchaff					
Spotted Flycatcher					
Hedge Sparrow					
Yellow Wagtail					
Starling					
Greenfinch					
Goldfinch					
Linnet					
Bullfinch					
Chaffinch					
Yellowhammer					
House Sparrow					
Tree Sparrow					

TABLE 2. **The Numbers of Pairs of Nesting Birds Present on the 80 Hectares from 1962-1966**

	1962	1963	1964	1965	1966
Mallard	1	1	1	2	1
Red-legged Partridge	4	1	2	2	1
Partridge	4	4	5	6	2
Pheasant	0	0	1	1	0
Moorhen	1	0	1	2	1
Lapwing	0	0	0	1	1
Curlew	2	2	0	1	1
Stock Dove	0	0	0	2	1
Wood Pigeon	10	9	10	NC	8
Cuckoo	1	1	0	1	1
Little Owl	3	3	0	1	2
Tawny Owl	0	0	0	0	1
Swift	3	4	4	4	4
Green Woodpecker	0	0	0	1	0
G. Spotted Woodpecker	0	0	0	0	1
Skylark	20	17	24	20	27
Swallow	1	3	3	1	2
House Martin	5	1	2	2	1
Carrion Crow	5	4	4	3	5
Jackdaw	7	6	7	13	5
Magpie	1	2	1	2	2
Great Tit	9	5	9	11	14
Blue Tit	9	7	9	11	13
Marsh Tit	0	1	1	0	1
Willow Tit	0	0	1	2	1
Long-tailed Tit	0	0	0	1	1
Tree Creeper	0	0	0	0	1
Wren	5	1	1	3	7
Song Thrush	8	2	1	6	7
Blackbird	20	14	16	27	26
Redstart	2	2	3	3	5
Robin	6	4	9	17	14
Blackcap	0	2	3	1	3
Garden Warbler	0	0	1	1	2
Whitethroat	12	4	11	13	10
Lesser Whitethroat	4	3	6	1	3
Willow Warbler	0	2	2	7	7
Chiffchaff	0	1	2	1	1
Spotted Flycatcher	0	3	1	1	1
Dunnock	6	11	13	21	19
Yellow Wagtail	0	0	0	1	1
Starling	10	12	14	NC	13
Greenfinch	1	0	3	0	2
Goldfinch	0	1	3	1	3
Linnet	1	3	2	3	5
Bullfinch	1	3	4	5	2
Chaffinch	9	15	15	25	21
Yellowhammer	3	5	7	11	12
House Sparrow	14	NC	NC	NC	NC
Tree Sparrow	22	16	16	22	26

NC—Not Counted

TABLE 3. **Winter Counts of Birds on the 80 Hectares from 1962-1966**

	1962			1963			1964			1965			1966	
	Jan.	Feb.	Nov.	Dec.	Jan.	Feb.	Nov.	Dec.	Jan.	Feb.	Nov.	Dec.	Jan.	Feb.
Mallard	0	2	0	0	0	0	1	0	0	2	0	2	0	4
Kestrel	0	0	1	0	0	0	0	1	0	0	1	0	0	0
R. legged Partridge	0	6	1	0	5	2	0	5	0	0	8	0	0	2
Partridge	9	1	0	15	11	11	9	33	25	10	19	4	7	4
Pheasant	0	1	1	0	0	0	1	1	0	3	0	1	0	1
Lapwing	0	63	0	43	0	10	0	1104	66	0	16	65	1	0
Golden Plover	0	0	0	0	0	0	0	5	0	0	0	0	57	0
Curlew	0	2	0	0	0	1	0	0	0	0	0	0	0	0
Lesser B. b. Gull	0	0	1	0	0	0	0	0	3	0	1	0	0	2
Common Gull	0	0	0	1	0	0	0	7	0	1	10	2	13	0
B. headed Gull	0	0	0	0	0	0	2	0	0	0	0	1	3	0
Stock Dove	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wood Pigeon	0	170	233	142	9	57	45	2	2	4	154	28	6	9
Little Owl	1	1	1	0	1	0	1	0	2	1	0	0	1	0
Tawny Owl	0	0	1	0	0	0	0	0	0	1	0	0	0	0
Green Woodpecker	0	2	2	2	0	1	0	0	0	0	0	0	0	0
Great S. Woodpecker	0	0	1	1	2	2	0	0	0	0	0	0	0	0
Skylark	0	16	58	8	0	1	10	138	52	24	42	24	27	29
Carrion Crow	5	6	18	15	7	4	40	17	14	12	5	12	10	9
Rook	0	5	2	0	4	0	110	0	4	3	0	0	0	0
Jackdaws	0	32	22	7	20	6	51	26	1	42	30	6	14	10
Magpie	0	4	4	1	2	2	7	3	2	3	1	0	0	2
Jay	0	0	0	0	0	0	1	0	0	1	2	1	0	0
Great Tit	2	10	14	4	4	11	7	13	12	12	3	9	8	5
Blue Tit	5	12	31	6	4	15	16	10	14	17	9	21	8	8
Coal Tit	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Marsh Tit	0	0	1	0	0	0	0	2	2	2	1	0	1	2
Willow Tit	0	0	1	0	1	0	0	1	1	0	1	0	0	0
Long-tailed Tit	0	0	2	17	0	0	0	0	0	0	0	0	0	0

	1965			1966	
	Nov.	Dec.	Jan.	Feb.	
Mallard	0	2	0	4	
Kestrel	1	0	0	0	
R. legged Partridge	8	0	0	2	
Partridge	16	0	4	4	
Pheasant	4	0	0	1	
Lapwing	190	126	3	0	
Golden Plover	0	0	0	0	
Curlew	0	0	0	1	
Lesser B. b. Gull	2	4	3	2	
Common Gull	0	3	5	55	
B. headed Gull	2	0	0	2	
Stock Dove	4	0	0	2	
Wood Pigeon	21	41	7	31	
Little Owl	0	0	1	0	
Tawny Owl	0	0	0	0	
Green Woodpecker	0	1	0	1	
Great S. Woodpecker	0	0	0	0	
Skylark	31	38	11	11	
Carrion Crow	9	12	8	21	
Rook	0	0	0	2	
Jackdaws	4	11	3	1	
Magpie	6	0	0	10	
Jay	0	1	0	0	
Great Tit	15	1	6	12	
Blue Tit	18	17	14	25	
Coal Tit	3	3	1	2	
Marsh Tit	4	3	0	0	
Willow Tit	6	10	0	0	
Long-tailed Tit					

Tree Creeper	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	2	1	0	1	0	0	0	0	0	1
Wren	0	1	8	2	0	1	2	1	2	2	2	2	2	2	1	0	1	0	0	2	3	1	0	0	0	1
Mistle Thrush	12	8	5	1	1	0	0	0	1	2	0	0	3	0	0	5	2	1	0	1	0	0	0	0	0	2
Fieldfare	0	17	70	47	0	4	0	16	3	92	22	0	346	16	14	23	83	48	0	16	14	5	2	4	0	16
Song Thrush	6	5	41	20	1	0	7	0	3	0	5	0	7	2	4	4	6	10	7	0	2	0	0	0	0	2
Redwing	0	1	226	115	0	0	1	2	3	83	126	0	55	0	15	32	27	43	1	2	0	0	0	0	0	0
Blackbird	6	54	66	23	16	11	4	26	27	37	30	21	24	37	11	25	32	38	26	8	13	4	3	1	0	8
Robin	5	5	15	5	3	4	3	13	13	17	20	10	11	8	14	10	17	14	8	13	11	3	2	0	0	4
Dunnock	1	3	9	2	0	3	0	11	12	13	14	14	12	10	13	15	13	10	9	11	12	5	3	1	0	5
Meadow Pipit	0	0	0	0	0	0	0	1	0	4	3	0	0	1	0	0	0	8	0	1	0	0	0	0	0	0
Pied Wagtail	0	1	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Starling	2	115	82	70	7	24	0	30	28	118	41	33	26	64	38	76	151	67	42	28	30	0	0	0	0	0
Greenfinch	0	2	35	33	0	0	0	1	1	3	2	12	8	3	16	5	1	115	11	1	0	0	0	0	0	0
Goldfinch	0	0	35	3	0	0	0	1	0	0	0	0	0	7	12	26	1	8	0	1	0	0	0	0	0	0
Linnet	0	2	240	34	0	0	0	0	0	35	2	3	3	17	10	42	2	0	0	0	0	0	0	0	0	0
Bullfinch	2	2	7	4	6	3	0	15	4	5	7	5	10	29	12	22	13	11	6	15	4	0	0	0	0	0
Chaffinch	5	10	48	38	3	3	0	112	32	33	16	43	60	25	147	38	39	200	56	112	32	0	0	0	0	0
Brambling	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	3	0	0	0	0	0	0	0	0
Yellowhammer	0	2	5	2	0	0	0	0	1	16	3	3	5	14	5	1	11	22	2	0	0	0	0	0	0	0
Reedbunting	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
House Sparrow	6	26	166	18	15	14	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Tree Sparrow	0	17	50	60	3	4	16	23	11	4	8	5	14	16	23	25	26	41	1	11	3	27	29	27	32	34
Total Species	14	34	38	31	21	23	33	38	27	32	33	25	36	33	33	32	33	38	27	29	27	32	34	25	36	33

NC—not counted although present

TABLE 4. The annual totals of breeding pairs of residents and summer migrants at Burley Gate from 1962-1966

	1962	1963	1964	1965	1966
Resident pairs	182	146	179	223	246
Summer migrant pairs	28	26	38	37	41

WILDFOWL

Mallard have bred every year on the study area, nesting in the tops of the pollarded ash trees 3 metres above the ground and up to 200 metres from the brook.

HAWKS

Buzzards are occasionally present in Moreton Wood (a large sycamore, ash and oak wood, surmounting a round-topped hill 300 metres to the north of the study area) for a few days in autumn when they may be seen hunting over the area.

The sparrow hawk has not been recorded in the study area since 1960. Before this time it was usual for a pair to breed each year in Moreton Wood. Although the birds were most often shot they were occasionally to be seen hunting along the hedges.

The kestrel breeds in the parish but is usually only seen in autumn over the study area.

GAME BIRDS

Shooting, occurring on only about two days a year, is done by walking up and shooting over dogs. The bags on these occasions show a ratio of 4:1 common to red-legged partridges not only reflecting the larger number of common partridges present but also showing the bias in shooting caused by the different behaviour of the two species—the Frenchman is inclined to be a "runner" whereas the common partridge lifts off when disturbed by dogs, presenting a good shot as it goes.

WADERS

Lapwings did not breed in the study area until 1965 although their post-breeding flocks have always begun to build up on the lower-lying fields from about ten or so in the first weeks of June until several hundred are present on the autumn roosts.

The curlew breeds on the lower-lying permanent pasture in most years. They return to the area in early February and their young hatch at the end of May before hay-making begins.

GULLS

The lesser black-backed, common and black-headed gulls which feed on the study area during the winter roost on the Severn estuary. Flight-line observation suggested that spring black-headed gulls and the occasional summer bird are mostly visitors from Welsh or border-breeding sites.

OWLS

The little owl breeds in the hollow apple trees or the tops of the pollarded ash trees.

The tawny owl did not breed in the study area until 1966 when a pair occupied a barrel placed in Pye Coppice in October 1964.

The barn owl breeds in two places in the parish but has not bred on the 80 hectares. Yet in most Septembers a pair takes up residence in a large hollow oak tree in the middle of the area and stays till October and sometimes November.

CORVIDS

Carrion crows breed in all parts of the area building their nests in the tops of oak trees, apple trees and the tall hedges. In winter there is no evidence that the territories are maintained and parties of non-territorial birds may be found feeding anywhere on the area.

The jackdaws nest colonially in the hollow trees of the orchards and attempt to build in the chimneys of the buildings on the southern edge of the study area. Post-breeding flocks concentrate over the hopyards where the poles and connecting wires provide convenient perches. Later in the summer they resort to Moreton Wood joining the flocks of rooks which breed there.

Magpies are often present in small parties of five or six through the winter but on fine days in January a pair may be seen rebuilding their nest in the high hedge. From the beginning of March the pairs begin to roost each night at the side of their nest.

THRUSHES

The first winter flock of migrant thrushes begin to appear on the study area in early October when the cider fruit is still on the trees. At this time of year the flocks are very wild, not settling long in any place. Later in the winter the fields surrounded by high hedges prove attractive to them.

Although mistle thrushes breed on neighbouring farms none has yet bred on the 80 hectares.

STARLINGS

The nearest winter roost of starlings is 4 km. south of the study area in Westhide Wood. Large flocks fly over at dusk all through the winter and in foggy weather many thousands use the tall elms on the southern edge of the area as an assembly point before continuing their flight home to roost.

FINCHES

The hopyards attract large mixed flocks of finches in winter. In 1962 a field of 13 hectares planted with linseed drew flocks of several hundred linnets. The chaffinch is the commonest breeding finch, nesting in the hedges and singing from the pollarded trees in the hedges.

ROOSTS

During autumn and winter the study area provides shelter for many roosting birds. The first roosts of the season begin with the post-breeding flocks of lapwings roosting on the permanent pasture where they feed. Once the stubbles are ploughed in, numbers of lapwings which feed outside the study area fly in each evening onto the fresh plough to roost. These flocks of up to 500 birds remain until the first severe weather.

Skylarks which also feed on neighbouring farmland return every evening to join the birds which have stayed on the 80 hectares. They number in all about 200 birds. These skylark roosts do not break up until early spring when the birds which are going to breed on the study area take up their territories and the rest disperse.

The winter thrushes roost sporadically in the high hedges or in Pye Coppice.

Most of the tit flocks and the tree sparrows feed back along the hedges towards Pye Coppice at evening time and can be seen flying into the trees at dusk.

BIRDS ON PASSAGE

In spring and autumn there is a passage of birds through the area. In the last week of April and the first few days of May wheatears in ones, twos and threes may be seen in the same fields in the middle of the study area year after year. The birds are moving slowly from east to west and can be traced over several farms in the parish. The birds seen are thought to be of the race *Oenanthe o. leucorrhoa*. Although single birds are more usually seen in September and October, on 11 October 1961 an unusual concentration of 40 wheatears was seen together with a pair of stonechats feeding in a freshly ploughed field. In some autumns they are accompanied by whinchats.

PREDATION

Foxes *Vulpes vulpes* L., stoats *Mustela erminea* L., weasels *M. nivalis* L., badger *Meles meles* L., and squirrels *Sciurus carolinensis* Gm., have all been recorded on the study area but it is extremely difficult to judge just how significant predation by these animals is. The one or two feral cats *Felis domestica* L., usually present on the study area would seem to be a more important factor especially in their effect on newly-fledged birds.

The avian predators present are the owls and corvids. Crows always appear to know where the nests of the larger ground-nesting birds are. If a curlew is disturbed from the nest a crow will almost immediately fly over only to be buffeted for its pains by the anxious curlew. Jackdaws and magpies sit about in the hedges watching and they must certainly destroy some nests although how many is not known.

Examination of owl pellets allows a simple estimate to be made of the incidence of their predation on birds, although Southern (1954 and 1969) has shown some of the biases inherent in this method. The barn owls which live on the study area in the autumn take largely wood mice *Apodemus sylvaticus* L., voles *Clethrionomys glareolus* Schr., and *Microtus agrestis* L., and the mole *Talpa europaea* L. No avian remains were found in their pellets. The tawny owl pellets contained mostly small mammal bones but there were periods when bird remains formed the greater part of the pellets. It was not found possible to identify all the avian remains but in early January 1966 it appeared that many tree sparrows were being taken, perhaps from a roost in Pye Coppice near where the pellets were recovered. Little owls are present all the year round on the study area. They are comparatively easy to find and the posts on which they perch when regurgitating their pellets are known. Their pellets contain beetle elytra, worm chaetae, millipede segments and some small mammal bones. In the 17 years in which the study area was under observation there were very few cases of the taking of birds recorded, except for the remains of birds found regularly in the

roosting and nesting hole of a little owl in an apple tree between June 1961 and February 1964. It is presumed that this was the work of one pair of birds only. In June 1961 they had one young bird which was fed largely on young blackbirds. In 3 years this hole produced the remains of many blackbirds, goldfinches, starlings, chaffinches, skylarks and the dismembered bodies of a green woodpecker, a moorhen and a partridge. These last three larger birds were all found in the hole between 17 January and 26 January 1963 when not once did the temperature rise above freezing and for a large part of the time was below—8° C. The lowest temperature recorded in this week was—16° C.

As the sparrow hawk has not been seen in the study area in the last few years the hawks are no longer of importance as a source of predation although a kestrel was once seen to take a linnet out of a flock and fly away with it in its talons.

DISCUSSION

In the 17 years in which birds were recorded 93 species of birds were seen at some time on the 80 hectares (Table 1). Some of these records only serve to illustrate the inherent mobility of birds, but most of the records emphasize the importance of farmland as a habitat for birds in Britain. 50 species bred in at least one year (Table 2) between 1962 and 1966, the five years in which a breeding census was made. 28 species bred every year.

The count of resident breeding birds recorded in 1963 (Table 4) is significantly lower ($P = < 0.01$) than in other years. This breeding season followed severe weather conditions in the preceding winter. The effects of this period on birds in Britain have been discussed by Dobinson and Richards (1964). On the study area, of the 25 species of resident birds (the species which would have been subject to the rigours of the 1962-63 winter) which bred in 1962, 4 species maintained their numbers in 1963; mallard, partridge, curlew and little owl. Of these only the partridge and the little owl are resident in the study area throughout the whole winter, the mallard moving to whatever open water it can find (which must have presented difficulties in the winter of 1962-63) and the curlew to undetermined winter-feeding grounds possibly the Severn estuary, although small numbers have been recorded closer at hand in every month in the year at Llowes on the Wye where the Digedi Brook enters the river. 7 species increased their numbers in 1963; magpie, dunnock, starling, linnet, bullfinch, chaffinch and yellowhammer. In addition the marsh tit and the goldfinch which did not breed in 1962 bred in 1963. 14 species showed a reduction in numbers; red-legged partridge, moorhen, woodpigeon, skylark, carrion crow, jackdaw, great tit, blue tit, wren, song thrush, blackbird, robin, greenfinch and tree sparrow.

But it has been said that farmland birds are like the coal miners' canaries in that they are sensitive indicators of the health or otherwise of the habitats they occupy. Ash and Sharpe (1964) in a sample of 19 bodies of birds which died during the 1962-63 winter, found pesticide residues in all of them and suggested that birds containing such residues are more likely to succumb in adverse environmental conditions than those without residues. In this respect it is of interest to

consider (Table 4) the numbers of pairs of summer migrants breeding at Burley Gate between 1962 and 1966. The lowest numbers occurred in 1962 and 1963. After this date their numbers progressively increased. These birds were not subjected to the influence of cold British winters. It is rather more likely that there is a correlation with the ending of the application of poisonous seed dressings in 1962. Organo-chlorines such as dieldrin are not excreted quickly but stored in the fat of the bird. There it may do little harm until the fat is mobilised during times of stress, e.g., starvation, reproduction or migration, and although no deaths in the study area were ever attributed to this cause it is suggested that sub-lethal doses of these poisons possibly had a depressing effect on the population. It is difficult to otherwise explain the significant rise ($P = < 0.01$) from 28 pairs in 1962 and 26 pairs in 1963 to 41 pairs in 1966. Similarly this stopping of the continued application of the poison might explain in part the continued increase of the resident pairs into the summer of 1966.

The winter counts (Table 3) illustrate the importance of mixed farmland as a habitat for birds. Even in the severest weather it provides some shelter and food. No trend is visible in their numbers, perhaps because of the high degree of mobility of birds during the winter and their lack of attachment to a particular site. Many more birds than were actually present during the count would probably use the area at some time during the day.

CONCLUSION

Changes in the countryside appear to be inevitable. Since the study ended in 1966 the orchards have gone and a new school, a vicarage and a bungalow have been built on the study area. Moreton Wood has been clear felled. In the parish of Ocle Pychard new methods of apple culture are being practised involving dwarf stocks closely planted in fields sheltered by high hedges. The disappearance of the old, hollow trees and the increase in high hedges will probably lead to a reduction or loss of some species and an increase in others. What is certain is that the countryside will not remain static in a frozen patchwork and that it will be necessary for a long time to come to monitor these inevitable changes and the effects they will have on populations of birds.

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APPENDIX

The scientific names of the species of birds mentioned in the text. The nomenclature is that of the *Status of Birds in Britain and Ireland*, The British Ornithologists' Union, Blackwell, 1971.

Heron	*Ardea cinerea*
Mute Swan	*Cygnus olor*
White-fronted Goose	*Anser albifrons*
Teal	*Anas crecca*
Mallard	*Anas platyrhynchos*
Sparrow Hawk	*Accipiter nisus*
Buzzard	*Buteo buteo*
Kestrel	*Falco tinnunculus*
Red-legged Partridge	*Alectoris rufa*
Partridge	*Perdix perdix*
Quail	*Coturnix coturnix*
Pheasant	*Phasianus colchicus*
Water Rail	*Rallus aquaticus*
Moorhen	*Gallinula chloropus*
Lapwing	*Vanellus vanellus*
Golden Plover	*Pluvialis apricaria*
Ringed Plover	*Charadrius hiaticula*
Curlew	*Numenius arquata*
Snipe	*Gallinago gallinago*
Common Gull	*Larus canus*
Lesser Black-backed Gull	*Larus fuscus*
Black-headed Gull	*Larus ridibundus*
Stock Dove	*Columba oenas*
Wood Pigeon	*Columba palumbus*
Cuckoo	*Cuculus canorus*
Barn Owl	*Tyto alba*
Little Owl	*Athene noctua*
Tawny Owl	*Strix aluco*
Nightjar	*Caprimulgus europaeus*
Swift	*Apus apus*
Green Woodpecker	*Picus viridis*
Great Spotted Woodpecker	*Dendrocopus major*
Lesser Spotted Woodpecker	*Dendrocopus minor*
Skylark	*Alauda arvensis*
Sand Martin	*Riparia riparia*

Swallow	*Hirundo rustica*
House Martin	*Delichon urbica*
Yellow Wagtail	*Motacilla flava*
Grey Wagtail	*Motacilla cinerea*
Pied Wagtail	*Motacilla alba*
Tree Pipit	*Anthus trivialis*
Meadow Pipit	*Anthus pratensis*
Wren	*Troglodytes troglodytes*
Dunnock	*Prunella modularis*
Robin	*Erithacus rubecula*
Nightingale	*Luscinia megarhynchos*
Redstart	*Phoenicurus phoenicurus*
Whinchat	*Saxicola rubetra*
Stonechat	*Saxicola torquata*
Wheatear	*Oenanthe oenanthe*
Blackbird	*Turdus merula*
Fieldfare	*Turdus pilaris*
Redwing	*Turdus iliacus*
Song Thrush	*Turdus philomelos*
Mistle Thrush	*Turdus viscivorus*
Grasshopper Warbler	*Locustella naevia*
Garden Warbler	*Sylvia borin*
Blackcap	*Sylvia atricapilla*
Whitethroat	*Sylvia communis*
Lesser Whitethroat	*Sylvia curruca*
Willow Warbler	*Phylloscopus trochilus*
Chiffchaff	*Phylloscopus collybita*
Goldcrest	*Regulus regulus*
Pied Flycatcher	*Ficedula hypoleuca*
Spotted Flycatcher	*Muscicapa striata*
Long-tailed Tit	*Aegithalos caudatus*
Marsh Tit	*Parus palustris*
Willow Tit	*Parus montanus*
Coal Tit	*Parus ater*
Great Tit	*Parus major*
Blue Tit	*Parus caeruleus*
Nuthatch	*Sitta europaea*
Tree Creeper	*Certhia familiaris*
Yellowhammer	*Emberiza citrinella*
Reed Bunting	*Emberiza schoeniculus*
Snow Bunting	*Plectrophenax nivalis*
Chaffinch	*Fringilla coelebs*
Brambling	*Fringilla montifringilla*
Greenfinch	*Carduelis chloris*
Goldfinch	*Carduelis carduelis*

Redpoll	*Acanthis flammea*
Twite	*Acanthis flavirostris*
Linnet	*Acanthis cannabina*
Bullfinch	*Pyrrhula pyrrhula*
House Sparrow	*Passer domesticus*
Tree Sparrow	*Passer montanus*
Starling	*Sturnus vulgaris*
Jay	*Garrulus glandarius*
Magpie	*Pica pica*
Jackdaw	*Corvus monedula*
Rook	*Corvus frugilegus*
Carrion Crow	*Corvus corone*
Raven	*Corvus corax*

A Polished Flint Axe from Fownhope

By W. R. PYE

DURING the late 1960's, Mrs. A. Lowe, who formerly lived at 15 Scotch Firs, Fownhope, Hereford, found an incomplete, polished flint axe whilst preparing her garden on the recently developed 'Scotch Firs' housing estate. She took the axe to Hereford Museum, where it was identified and returned to her via the identification service in operation. Later, when she was about to move from the area, it was given to Mrs. Edwards, 39 Breinton Road, Hereford, who kindly donated it to the Hereford Museum, where it may be seen under Accession Number 9501. The axe is of grey and white mottled flint with greyish cherty inclusions. Its weight is 7⅜ ozs. (0.2 Kg.), the length is 3.85 ins. (9.6 cms.), with a width of 2.45 ins. (5.8 cms.), and a maximum thickness of 1.2 ins. (3.1 cms.). An apparently parallel-sided axe ,originally of much larger proportions, it was broken in antiquity, and is approximately only half to one third of its original length, polished overall.

Broken fairly cleanly in antiquity, and almost at right angles to the main axis of the axe, probably during usage, the formation of a hinge fracture on the one side of the axe proved to be of use in re-hafting. A flake was struck from the opposite side of the axe, and after a certain amount of trimming, it appears to have been re-used. The cutting edge of the axe shows signs of damage through usage.

The site of the find is SO 57743473, just below the 200 foot contour line, and some 500 yds. east of the river Wye, which flows some 70 ft. lower than the site, which is on a gentle slope near the foot of Cherry Hill where the ground starts to fall towards the river.

Whilst it has been suggested that the type of flint utilised in this axe could have come from Wiltshire, I feel that the true provenance is more likely to be in the eastern part of England, probably Lincolnshire.

In *The Transactions of the Radnorshire Society*[1] Dr. H. N. Savory's comment on a narrow, parallel-sided axe from Dolyhir, Rads., that ' . . . the type is more at home in the eastern counties', would certainly be borne out by earlier finds, remembering that in this case the find constitutes probably between one half and one third of the original axe dimensions. Its similarity, including colour, to the Botesdale Axe[2] is fairly pronounced in plan, also alternatively could be that from Delmeny, Linlithgow,[3] and one from Pendle, Lancs.[4]

It should be borne in mind that although this axe has no broad facets, the parallel-sided axe could be a phenomenon produced as a by-product of cultural overlap with the continental producers of the 'Scandinavian' type axe.

In writing this article I would like to thank the curator and staff of the Hereford City Museum, for making the axe available to me, and P. Leach of Caerphilly for some help with details of the original find.

REFERENCES

[1] F. Noble, 'Archaeological Finds in the Knighton Area', *Trans. Radnorshire Soc.*, Vol. XXVII (1957), 65 and 67.
[2] J. Evans, *Ancient Stone Implements of Great Britain*, 100, fig. 53.
[3] *Ibid.*, 102, fig. 55.
[4] *Ibid.*, 106, fig. 61.

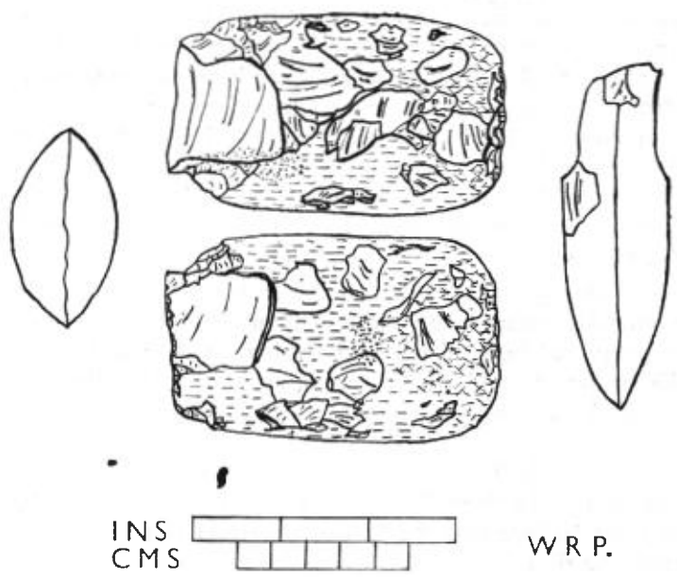

FIG. 1
A Polished Flint Axe from Fownhope

More Flint and Stone Implements from Herefordshire

By A. E. BROWN

THE finds described here were made during the years 1965-7 in ploughed fields in various parts of the county. While some come from sites already known, other sites are additions to the growing number of places in Herefordshire where flints have been found, and they help to show once again how common flint-knapping debris is in the county, and the wide variety of topographical situations in which such material turns up—along ridgeways (e.g. Upper Godway, Peterchurch), on low-lying land (e.g. Mortimer's Cross and Chilstone), from slopes or the sides of valleys (e.g. Craswall), from hill tops (e.g. Pen-Twyn, Urishay), from bluffs overlooking rivers (e.g. Woodbury Hill, Peterchurch and Clehonger). Many more sites of this kind must remain to be discovered. In most cases the debris marks sites of unknown status but presumably of Neolithic or Bronze Age date, but the two microliths shown below suggest earlier influences. However, although of well-known regular Mesolithic forms they may merely represent the survival of earlier traditions of flint-working and should not in themselves be considered as evidence of Mesolithic occupation of the sites in question, which produce more abundant flints of later periods. A similar state of affairs has frequently been noted elsewhere in the region.[1]

The geological identifications are the work of Professor F. W. Shotton, F.R.S., of the University of Birmingham, whose help is gratefully acknowledged. The fragments of fine-grained volcanic rock, which are frequently found in the west of the county and presumably imported from Wales, again show the importance of this material as an addition to flint for the manufacture of tools.

Clehonger	SO 470391	Six flakes
Clifford	SO 236444	Broken scraper and small flake
Craswall	SO 272381	The "Abbey A" site described by R.S.G. Robinson in 'Notes on Bronze Age Settlements on Abbey Farm, Craswall' (*Trans. Woolhope Natur. Fld. Club*, XXXIII (1950), 112-7). The site has produced numerous cores, scrapers, utilized flakes, waste pieces and burnt flints in addition to the following: (FIG.)

1. Fragment of an axe of Graig Llwyd rock subsequently used as a hollow scraper or spokeshave (Reference number: He 47c).

2. Narrow blade of rhyolite or rhyolitic ash.
3. Fragment of rhyolitic ash from a broken implement, carefully trimmed around edges.
4. Fragment of polished flint axe of light-grey flint showing secondary trimming along two opposed edges and bright lustre along one of them; possibly a sickle flint.
5. Tiny microlithic blade with battered back.

Craswall	SO 274383	Leaf-shaped arrowhead of light-grey flint from a molehill close to the 'Abbey A' site.
Craswall	SO 262378	The 'Birches B' site in Robinson. *op. cit.* above. Cores, edge trimmed flake, burnt flints, waste pieces.
Holme Lacy	SO 538341	Two flakes.
Lucton, Mortimer's Cross	SO 428637	Four flakes and burnt flints.
Madley, Upper Chilstone	SO 398393	Five burnt flints and flakes from field formerly containing earthworks.
Michaelchurch	SO 311371	Six flakes and a small circular scraper from the field formerly containing a mound.
Peterchurch, Upper Godway	Area of SO 353404	Core of rhyolite (6) (FIG.).
Peterchurch, Woodbury Hill	SO 343408	Triangular microlith blunted down whole of one edge; also round scraper and four flakes (7) (FIG.).

REFERENCE

[1] As at Pucha Farm, Urishay; A. E. Brown, 'Records of Surface Finds made in Herefordshire 1951-60', *Trans. Woolhope Natur. Fld. Club*, XXXVII (1961), 81; Much Marcle, *ibid.*, XXXIX (1969), 479; Chase Hill, Ross, *ibid.*, 480.

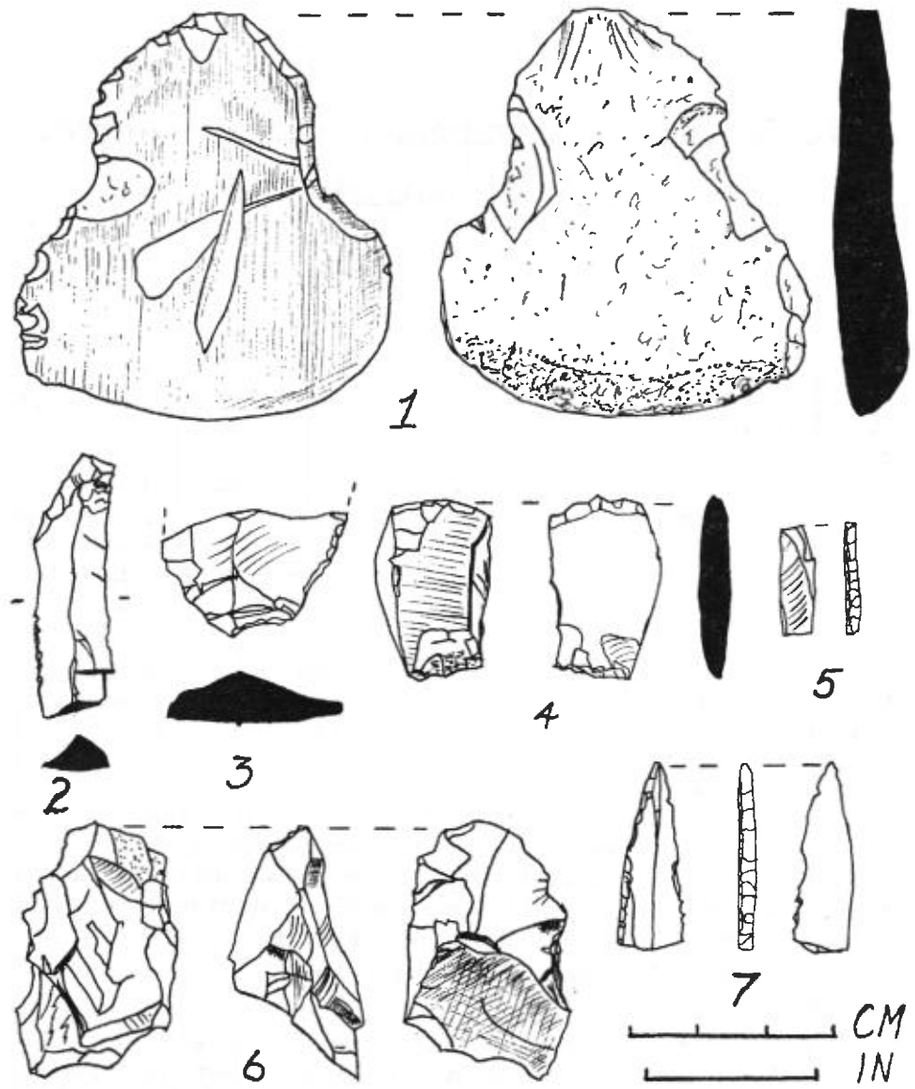

FIG. 1

Flint and Stone Implements from Herefordshire

1-5 Craswall; 6 Upper Godway, Peterchurch; 7 Woodbury Hill, Peterchurch

The Scientific Examination of Soil Samples from Archaeological Sites

By N. P. BRIDGEWATER

MUCH of the evidence used by the archaeologist is of a circumstantial nature. His interpretation of the evidence can be made much more effective when supported by results obtained from a scientific examination.

Scientific techniques can be applied to the examination of soil samples, specific objects or environmental materials. Although useful work has been undertaken on such problems as the examination of corroded iron swords, the discovery that leather may be preserved by copper salts, and the detection of burials from their silhouette stains, these spectacular revelations are not usually the type of aid that most archaeologists need.

It has been found in practice that the physical and chemical analysis of soil samples yields information which enables the soil investigator to confirm or refute the tentative interpretations of the excavator. This is a service which provides a true description of particular layers in terms which define their composition and assesses their mode of formation. At the same time, the differentiation of soil residues can indicate the type of former activity by human or other agencies. The results of such scientific examination can only be fully utilised by a close co-operation between excavator and soil investigator, and the value of the enquiry will be enhanced where the latter has received training in archaeological techniques. The main types of soil layer for consideration include:

1. A natural layer undisturbed by human activity, such as a turf line or subsoil.

2. A constructional deposit, such as a make-up layer, where material is moved from one location to another. This material may have previously existed as a natural layer or it may have contained residues derived from previous occupation.

3. An occupation layer. This could either be some type of floor surface, or a soil surface, which had been overlaid by food and animal wastes, corpses, corn and straw, timber structures, clay and daub, mortar or cement, metallic residues etc., and which can contain some of their residual degradation products.

4. Accumulation deposits, including the fill of silted hollows, rubbish pits or post holes. Such fill often under anaerobic conditions, creating special conditions of preservation.

5. Destruction deposits, containing residues from structures destroyed or burnt, or consisting of the levelled rubble from demolished areas of occupation.

It must be remembered that the uppermost layer on a site may contain materials foreign to archaeological deposits, such as those from cultivated top soil—current plant growth, artificial and natural manures and fertilisers, or modern pesticides. However, interference from these sources has been exaggerated. Two other potentially disturbing factors which have previously been stressed concern the disturbance of buried layers by worm activity and the loss of compounds in solution by leaching. Whilst there is undoubtedly a transference of bases (cations) due to leaching, this does not apply to phosphorus and humic substances. Studies on Nigerian forest soils by Bates and Baker have shown that the decomposition of vegetable litter is confined to the top 2 ins. of soil and that the bulk of the phosphorus is in a closed biological cycle. The main worm activity was also found in this small upper zone. The stability of phosphorus is also confirmed both by Black and by Jacks, who state that it does not appear in soil in the soluble form. A more realistic type of loss can occur where decomposing organic matter overlies a porous sandy layer which is practically free from humic material.

Whilst a few rapid field tests for the detection of certain residues in soils have been developed, such as in the location of micro-podzols around former timber posts, the excavator must be prepared to await the results of comprehensive analyses of an appreciable number of samples to yield worthwhile information. Practical work has shown that, in our context, the composition of a soil layer can be defined by a rough particle grading followed by the lens examination of individual residues, together with chemical analyses involving the determination of total organic carbon, total phosphorous, total nitrogen, calcium, total iron and ferrous iron. These are routine determinations, which can be supplemented as required by special tests for such materials as mortar, plasters, comminuted slag, brick particles, charcoal, clay and daub (burnt and unburnt), and copper residues. Indications of the mode of soil formation are given by pH and particle size distribution.

The above routine examination, with variations, has been successfully applied to composite samples representing given layers, but another method of approach, classically used with phosphate determinations, has been the determination of one or two parameters taken on a grid system to define the limits of an occupied area, such as a cattle stall.

Of particular interest is the possibility of detecting the site of timber buildings, since totally decomposed. Provided that the underlying soil layer was loam or clay which would aid the fixation of decomposition products, detection of polyphenols by Thin Layer Chromatography may well be a useful technique.

Reports of Sectional Recorders

Archaeology, 1973

By R. SHOESMITH

Berrington Street, Hereford (SO 507398). Demolition in 1972 on a site previously occupied by St. Vincent's Convent and St. Francis Xavier's R.C. School exposed the remains of some 60 m. of the Saxon defences of Hereford. The western boundary of the site is the medieval city wall.

Previous excavations in 1968 and 1971 to the north and south of the site had established a sequence of occupations and defences from the post-Roman period through the Saxon period down to the middle ages.

The excavations were restricted to occupation layers on and under the various tails of the Saxon defences and had to be taken in three parts to enable building work to continue.

In half of the first area, most of the post-Conquest levels had been removed by the floor and foundation walls of the recently demolished semi-basement building. Under this, some 20 pits, of the 11th to 16th centuries, produced a very useful series of pottery types for the city.

The second half of the first area had much less disturbance and produced occupation levels associated with Chester ware and earlier levels without pottery. A coin dated to the later years of the reign of Alfred was found under the Chester ware level.

The second area was excavated some 7 months later and, although somewhat disturbed by medieval pits, the plan of a small timber Saxon building was established.

The final area is to be excavated during the winter of 1973.

Castle Green, Hereford (SO 512395). Excavations were carried out in advance of re-scarping and revetting the riverside bank of the bailey of Hereford Castle. Previous excavations to the north of the site had established the position of a church, considered to be that of St. Guthlac, associated with Saxon and medieval burials. To establish the occupation of the site, two areas were excavated behind the raised footpath which ran along the top of the river bank, in an area where drains and electricity cables were likely to be laid. Machine cut trenches joined these areas through the raised footpath to the river bank, in an attempt to find traces of the original river defences.

The raised footpath was long supposed to reflect these defences, but pottery finds established that the bank was constructed in the 18th century solely as a landscaping feature. A series of revetting walls, at the south-east corner of the bailey, one of which had already been made apparent by river bank erosion, are presumably connected with this landscaping.

The almost complete disuse of the castle between the 14th and 18th centuries was reflected in the pottery finds. However, beneath the footpath embankment, an undisturbed layer of brown soil and mortar spread produced 12th and 13th century potsherds, arrow heads and animal bones.

Stretching beneath the medieval layer, and encompassing the whole of the main area of excavation was a burial ground, from which, in all, the remains of 87 bodies were recovered. Further skeletons were exposed by the contractors working on the river bank. Some of the burials may be medieval, but it would appear that the main use of the burial ground was in the Saxon period. All articulated burials were aligned east-west, but there were no finds at all associated with the skeletons.

Different burial techniques were used, and in the upper levels one of the skeletons was buried in a stone-lined cyst. Four burials were provided with packing stones at either side of the skull.

Many iron nails and iron coffin fastenings were found *in situ*, and these clearly delineated the coffin shapes, although it was impossible, except at the lowest levels, to find the original grave cuts due to the constant re-use of the site.

Amongst the earlier burials, eight were found associated with quantities of charcoal. These would seem to be similar to burials found at Winchester, York, Oxford, and Exeter. In four of these cases, associated coffin nails were found, and in one case the coffin impression was clearly visible. Two of the charcoal burials had stones on either side of the head. In all cases the bodies were laid on a bed of charcoal, although in one or two cases the charcoal seems to have covered the body as well.

Four of the 'charcoal burials' were within the limits of the corner of a loose stone built structure which was presumably the support for a timber-framed building. The stonework had one re-building phase and was roughly oriented east-west. One 'charcoal burial' was cut into the re-built stonework.

Lack of time and finance and the activities of the construction workers made it impossible to remove all the earlier burials.

Rear yard of Lamb Hotel, Hereford (SO 514398). At a point where the City Wall becomes part of the structure of outbuildings in the yard of the Lamb Hotel, St. Owen's Street, excavations were carried out by workmen to strengthen and provide a solid foundation for the wall. Three trenches approximately a metre wide were dug, each extending for some 2½ m. from the wall, and each undercutting the wall to a maximum distance of 15 cm. The trenches varied in depth from 75-90 cm. immediately under the wall to about 50 cm. at the end away from the wall.

Observations throughout the period of excavation indicated:

1. that the area adjacent to and underneath the wall had been previously excavated, probably more than once;
2. that timber structures had previously existed adjacent to the wall, and these may have continued under the present wall line.

It is assumed that the previous excavations and undercutting were associated with previous attempts to stabilize the wall on this section, and fragments of brick indicate that the work was post-medieval and possibly 19th century.

Sutton Walls Camp (SO 523465). Excavations were carried out for 2 days in August 1973, when a human skeleton was revealed in section during machine activities. The skeleton was reported to the Department of the Environment as the section was liable to fall.

The skeleton, evidencing many fresh breaks resulting from bank settlement, was laid on its left side, with hands at left hip and lower legs (lost in machining) bent back. The head was thrust forward to accommodate the body in the 50 cm. deep hollow, scooped from the occupation level of the primary embankment.

The skeleton is probably a male of advanced age.

One sherd of iron age pot was recovered from the grave.

Archaeological Research Section, 1973

By J. B. LEWIS

THE Archaeological Research Section has had an interesting and useful year in its endeavours to discover or confirm facts about various archaeological aspects in the county.

It has had nine field days, a discussion evening and an Annual General Meeting and additionally made a contribution to the Council of British Archaeology's Group 8, Regional Meeting, in Hereford, last April, with a display of archaeological items.

Field days have included the investigation and study of the old Leominster Canal at Putnal Fields, Stockton Cross and Tick Bridge—some industrial archaeology at Alford Mill and surrounds—an investigation of a Roman road near Vowchurch—hedgerow analysis in the Stretton Sugwas and Moccas areas—a reconnaissance of the St. Devereux district and a survey of field monuments around Byton.

The Putnal tunnel on the Leominster Canal was given a somewhat hazardous exploration and photographed and the canal sluices at Stockton Cross recorded and isometric drawings prepared; the dam and feeder at Tick Bridge have been studied and will be further investigated. Altogether a considerable advance in our knowledge of the design and function of this old canal.

Evidence of an old and extensive village near Stockton Cross has been noted and confirmed by aerial photography and further examination of this area is contemplated.

Alford Mill produced some interesting examples of late 18th-century industrial activity with extensive water works; the mill owner also reported the one time existence of hide tanning pits in one of his water meadows. In the same district an intriguing round stone wall with a great depth of charcoal nearby was another find as was a puzzling area at Bent Orchard surrounded by ditches, both inviting further investigation.

The hedgerow analysis field days were aimed at trying out Dr. Max Hooper's theory that a hedgerow initially established with only one species will acquire new ones at a rate of one per hundred years. Using some 18th and 19th-century estate and enclosure plans of the Moccas and Bredwardine areas it was possible to confirm the theory in some instances but difficulties arose where in some hedges it seemed likely that they had been planted with more than one species in the

first place. In the Stretton Sugwas area, known 17th-century hedges were confirmed by the formula. But it would seem that a lot more field work is required before Dr. Hooper's theory is accepted as more than a reasonable hypothesis.

It was hoped to cut a section across the controversial Roman road in the Golden Valley but in the event, crops on the most likely stretches prevented this. A survey of the Turnastone-Peterchurch district revealed several possible irrigation trenches dating from Roland Vaughan's 17th-century water works in the angle between the Trenant Brook and the River Dore.

The reconnaissance of the St. Devereux area included a further look at the possible housing platforms in the fields to the N. and W. of the church. A visit was also made to the moated site of Trelough and the motte and bailey at Didsley, where previously unrecorded fish-ponds to the S. of the earthworks were noted. In the area known as Crizeley numerous derelict dwellings and a network of tracks suggested a substantial post-medieval settlement.

The survey in the Byton area produced some interesting items. The condition of the recorded barrow near Kinsham seemed satisfactory but it was noted that the standing stone had been removed from the centre to the N. corner of its field. A look was taken at an old brick-yard, now heavily wooded, near Eywood and also a 15 ft. diameter barrow with signs of a surrounding ditch was discovered; as far as is known this has not been previously recorded. The party also looked at the motte at Shobdon Court and its almost unique 19th-century home-producing gas-plant and holder.

On the social side a very successful dinner and a discussion evening were held during last winter when a convivial atmosphere encouraged interesting discussion on past and future activities of the Section. Membership continues at around fifty although a larger proportion would be welcomed on field days.

Botany, 1972, 1973

By F. M. KENDRICK

AFTER intensive field-work over many years the county has been thoroughly explored botanically and we should not therefore be surprised that no new county records have turned up in these two years. However, I have received records of some interesting plants during the two seasons which are worth recording. I have given the plants the reference numbers from Dandys *List of British Vascular Plants.*

37/1 *Trollius europaeus* L. Field in Huntingdon.
38/2 *Heleborus viridis* L. Risbury Camp, Ivington, Boresford.
46/9 *Ranunculus parviflorus* L. Goodrich (reported Miss Trafford).
168/6 *Geranium phaeum* L. Lane side Clifford.
169/3 *Erodium cicutarium* L. Phocle Green.
191/3 *Melilotus alba medic.* Sutton quarries.
283/2 *Bupleureum rotundifolium.* Goodrich (reported Miss Trafford).
325/18 *Rumex maritimus* L. Byton Marsh.
392/3 *Symphytum orientale* L. Hole in the Wall.
397/1 *Lycopsis arvensis* L. Phocle Green.
439/1 *Lathraea squamaria* L. North end of Coppell Hill.
475/8 *Campanula patula* L. Roadside Bredwardine/Dorstone. Brilley.
506/6 *Senico sylvaticus* L. Phocle Green.
603/1 *Paris quadrifolia* L. Llanrothal.
663/68 *Carex muricata* L. Near Lucton village.

Buildings, 1973

By J. W. TONKIN

THIS has been a busy year and again the Recording Group has met regularly, its principal work having been in Ledbury and in the Broxash Hundred. This is not reported below as it is hoped to publsh a full account of the work at a later date. As in previous years we are greatly indebted to the University of Birmingham and the W.E.A. for their active encouragement of this work.

A University Extramural weekend course with the writer as tutor was based on Ludlow and spent some time in North Herefordshire, especially in Yarpole, while a long weekend at Attingham Park was directed by the writer with help from Mrs. M. Moran, my wife and Messrs. C. H. I. Homes and R. C. Perry.

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

HEREFORD

6 Castle Street. SO 512397

A pair of semi-detached, late-medieval houses now converted into one. They may in fact be the end pair of a longer row for the west wall of the western house has been replaced by the wall of a 19th-century brick house and a joint in the wall-plate close to this may indicate that it ran on to another house. Each house apparently consisted of a one-bay open hall and a two-storey bay.

CRADLEY

Upper Vinesend. SO 750476 (R.C.H.M. 12)

Now restored. Hall appears to have had one bay open and the other floored over the screens-passage.

EARDISLEY

Great Quebb. SO 302519 (R.C.H.M. 33)

Two complete cruck trusses remain and there appears to have been a third. It would appear to have been a two-bay hall with a service-bay and perhaps a parlour cross-wing replaced by the present one in the 17th century. Alternatively there may have been a parlour bay.

KINGTON

Oxford Arms. SO 299567

At first sight this is a 19th-century building with much stucco decoration on the front. However, inside there is evidence of a five-bay timber-framed building, probably built in the late 17th century. A cellar runs most of the length of the house.

LEINTWARDINE

Greensleaves, Whitton. SO 411739 (R.C.H.M. 50)

A long-house with two-room plan and byre having direct access to hall. It appears to date from the mid-17th century. The initials W S are carved on the fireplace lintel. William Smith was assessed for £5 in 1652 and had two hearths in 1665.

St. Mary's House, Kinton. SO 411747 (R.C.H.M. 41)

Recent restoration has shown this to be an open hall and cross-wing, probably of early-16th-century date.

ROSS-ON-WYE

23 & 24 Brookend Street. SO 601244 (R.C.H.M. 37)

A three-bay house which is undergoing restoration. Part of a mural decoration has been found on a wall in the northern room on the ground-floor. It appears to be a blue and black pattern. On the first-floor the beams and some exposed joists are painted with a black pattern on a white ground. The roof trusses are of the upper-cruck type.

Old Gaol, New Street. SO 599243

A strange building which probably dates from the 19th-century Gothic period in Ross *c.* 1840. The vaulted undercroft, the two-centred doorway and the weathered red sandstone all look genuine enough, but the lancet windows and the tablet over the doorway do not look right.

WEOBLEY

Old Vicarage. SO 401518 (R.C.H.M. 19)

Redecorating of the house revealed what appears to be a date, 1319, in the centre part of the bracket on the north wing. As it is in Arabic figures on a Renaissance bracket it is certainly not a contemporary date, though it may have been put there when the wings were added. What it means, if anything, is a mystery. The roof has quatrefoil windbraces of the 15th, or perhaps, the 14th century.

WIGMORE

OAK INN. SO 413690

Now entirely roughcast this building appears to date from *c.* 1600 with close-set framing on the ground-floor at the front of the house and square framing above. There appear to have been two rooms on the ground-floor and three on the first and in the attics.

During the year members of the listed buildings sub-committee looked at 39 buildings, most of which were for minor changes. Of these eight were demolitions or part demolitions. Protests were made about the proposed demolitions of Bewell House, Hereford, the Old Railway Inn, Ross, 4 High Street and 16 and 17 Mill Street, Kington, and the Town Hall, Leominster. Of these Bewell House and the facade of 4 High Street, Kington, are definitely being preserved. As far as is known no listed building was demolished during the year.

In addition to the additional trusses at Great Quebb mentioned above and the upper cruck at Ross a previously unrecorded cruck building was found at Thinghill Grange. These can be added to lists already published.

Entomology, 1973

By M. W. PRYCE

As about 85 per cent of all known animals are arthropods, and the class INSECTA so vast, this survey is necessarily incomplete. I have attempted to include records of most of the main Orders. The numbers of recorded species is limited, but it is hoped to add to the list in forthcoming years.

By definition, an insect is an invertebrate animal whose body is divided into head, thorax, and abdomen. Its head bears a pair of antennae, its thorax very often has wings, and bears three pairs of legs. There is no general definition for the immature stages—some have no legs and are not divided into obvious thorax and abdomen. The sub-class APTERYGOTA undergo no true metamorphosis and are wingless. The sub-class PTERYGOTA are normally winged insects and metamorphosis is present. Of these some Orders are known as the Exopterygota because the wings develop outside the body. Here metamorphosis is incomplete because there is no pupal stage. In the Endopterygota the wings develop inside the body and there is complete metamorphosis from egg-larva-pupa-adult stage.

Of the sub-class APTERYGOTA I have only recorded a member of the Order Thysanura. This is *Lepisma saccharina* (silverfish) and is common in houses, old and new, where it feeds on carbohydrates and insect remains, normally in kitchens. The Order Collembola has not been studied in detail because these insects are very small, though they are abundant in the soil, under stones and in organic matter.

Proceeding to the EXOPTERYGOTA, this includes the following Orders:

Order Orthoptera (cockroaches, crickets, grasshoppers).

Family. Acridiidae *Omacestus viridulus* and *Chorthippus bicolor* (Golden Valley).

Family Tettigoniidae (longhorned grasshoppers and bush crickets).

Pholidoptera griseoaptera in hedgerows between Belmont and Ruckhall, and *Meconema* (longhorned green grasshopper) apparently fairly widespread in Wye and Golden Valleys.

Order Dermaptera (earwigs) represented by the common earwig *Forficula auricularia.*

Order Plecoptera (stone-flies) *Perla* sp.

Order Ephemeroptera (may flies) *Ephemera danica* and *Procloeon pseudorufulum* recorded in Dorstone. *Baetis buceratus* larva from river Wye.

Order Odonata (dragon-flies).

Group Anisoptera (stout bodied spp) *Libellula depressa* (Wye Valley).
Group Zygoptera *Aeshna cyanea* (Eaton Bishop). *Coenagrion puella* (Honeymoor Common, Eaton Bishop). *Pyrrhosoma nymphula* (Wye Valley).

Orders Psocoptera and Thysanoptera are common but have not been studied in detail.

Order Anoplura (lice). Sub-order Mallophaga.

Specimens of lice collected by Mrs. Kay (Eaton Bishop) from male turkeys (broad breasted whites) appear to be *Menopon pallidum.*
She observed that they were found only on the male birds and that the females were not infested.

Order Hemiptera (bugs). Sub-order Heteroptera.

Nepa cinerea (water scorpion) collected from a stream on Honeymoor Common, Eaton Bishop, is predatory on mosquito larvae, water beetles, etc. *Notonecta* sp. and *Corixa* sp. (water boatmen) are widespread in ponds and streams in the county.
Anthocoris nemorium, the common flower bug, a general predator of greenflies, red spider mites, etc., is widespread.
The shieldbug *Dolycoris baccarum* which is usually found on sloe, damson and also wheat, was recorded at Eaton Bishop.
Four members of the Fam. Miridae, *Calocoris norvegicus* a minor pest of potatoes, carrots and chrysanthemums (at Vowchurch) and *Stenodema laevigutum* on damp grasses (at Dorstone) also *Megaloceraea recticornus* (similar habitat). *Notostira elongata* is common on roadside grass verges.

Sub-order Homoptera (froghoppers, aphids, leaf-hoppers). In addition to the common *Philaenus spumaris* (nymphal stage in "cuckoo-spit") the less common species of froghopper *Jassus lanio*, and the red and black froghopper *Cercopis vulnerata*, which feeds on the roots of grasses in the nymphal stage, was also found. (Vowchurch).

Of the ENDOPTERYGOTA, members of the following Orders have been recorded.

Order Neuroptera (lacewings, snake-flies, alder flies). The green lacewing *Crysopa carnea* is common and enters houses to hibernate where it undergoes a colour change to reddish-brown, regaining its green colour in the spring. The eggs are attached to long stalks and the larvae eat aphids.
The alder fly *Scalis lutaria* (now reclassified as the O.Megaloptera) has also been recorded in the larval stage (aquatic).

Order Mecoptera (scorpion-flies).

Panorpa communis male and female adults found in Dorstone. Both adults and larvae are carnivorous but the larvae live underground and are not often seen.

Order Trichoptera (caddis flies).

Adults of the family Limnophilidae, *Limnophilus* sp. and *Chaetopteryx* were recorded along the Dore Valley. The larvae of *Hydropsyche* sp. were collected from the river Lugg, also cases from *Lymnophilus*, *Agapetus*, and *Tinodes*.

Order Lepidoptera (butterflies and moths).

This has been a particularly good year for butterflies, drier and sunnier than usual. *Anthocharis cardamines* (orange tip) was very plentiful during May and early June, and a specimen of *Gonepteryx rhamni* (brimstone butterfly) was seen at Vowchurch in May. The wood white *Leptidea sinapis* is still found in many parts of the county. *Thymelicus sylvestris* (small skipper) is fairly widespread, and the large skipper *Ochlodes venata*, and the dinghy skipper *Erynnis tages* have also been seen.

In early June *Hamearis lucina* (Duke of Burgundy fritillary) was recorded near the Black Mountains above Snodhill. The holly blue *Calastrina argiolus* appears to be more common than *Polyomattus icarus* the so-called "common blue" butterfly. *Polygonia c-album* (comma butterfly) is still fairly common in the Wye Valley, and peacock butterflies *Nymphalia io* were abundant from early August until the Autumn. Small tortoiseshells *Aglais urticae* and red admirals *Vanessa atalanta* are common but only one specimen of *Vanessa cardui* (painted lady) was seen in Dorstone. *Argynnis paphia*, the silver-washed fritillary was also recorded here. In addition to the common meadow brown *Maniola jurtina* other recorded species of the Fam. Satyridae were *Maniola tithonus* (hedgebrown) *Coenonympha pamphilus* (small heath) *Pararge megera* (wall brown) and *Pararge aegeria* (speckled wood).

I have not, this year, attempted any survey on the moth population, but mention should be made of the somewhat rare alder moth (*Acronycta alni*) a single larva of which was collected by Angela Lilwall and found by the Cagebrook, Clehonger. This caterpillar is peculiar in that it has curious clubbed hairs, and is strikingly coloured with black and yellow stripes, which at first sight gives the appearance of cinnabar moth caterpillars. The brightly coloured vermillion and greyish-black cinnabar moth (*Callimorpha jacobaeae*) has been very abundant this year, even in the streets of Hereford City. Another interesting (plume-wing) moth *Alucita pentadactyla* (the 'white-feather' moth) whose larvae feed on convolulus, had also been widespread this year.

From my observations, *Tineola bisselliella* the formerly common 'clothes moth' is now rarely seen in houses, possibly because man-made fibres have largely replaced the woollen garments, which provided food for the moth larvae. Much more commonly seen are *Hofmannophila pseudo spretella* (the 'brown moth' house) and *Endrosis lactella* (the 'white-shouldered' house moth) the larvae of which feed on stored food and debris in kitchens.

Order Coleoptera (beetles)

I am most grateful to Mr. John Cox of the Bockleton Country Study Centre, Near Tenbury Wells, for sending to the Woolhope Club a detailed list of members of the Family Chrysomelidae, specimens of which were collected over the last year within the boundaries of Herefordshire. His findings are listed as follows:

Fam, Chrysomelidae :

Cassida rubiginosa	4.8.72	Aymestrey
	12.8.73	Queen's Wood, Dinmore
Zeugophora subspinosa (F)	12.8.73	Dinmore Hill
Lema melanopa (L.)	7.5.72	Haugh Wood
		Marston Stannett
Cryptocephalus pusillus (F)	2.8.73	Dinmore Hill
Cryptocephalus labiatus (L)	12.8.73	Dinmore Hill
Chrysolina varians (Scholl.)	28.7.72	Lingen
	7.8.73	Wigmore
Chrysolina polita	6.7.83	Aymestrey
Phaedon tumidulus (Germ.)	6.8.73	Aymestrey
Phyllodecta vitellinae (L)	12.8.73	Dinmore Hill
Timarcha tenebricosa (F)	17.4.72	Aymestrey
Phyllotreta undulata (Kutsch.)	15.6.72	Leintwardine
Phyllotreta tetrastigma (Como.)	28.4.73	Wigmore
Apthona euphorbiae (Schrank.)	7.5.72	Haugh Wood
Haltica lythri (Aube.)	4.8.72	Aymestrey
Batophila rubi (Payk.)	7.5.72	Haugh Wood
	28.4.73	Wigmore
Crepidodera transversa (Marsh)	4.8.72	Aymestrey
Crepidodera ferruginea (Scop.)	28.7.72	Lingen
	2.8.73	Dinmore Hill
Derocrepis rufipes (L.)	15.6.72	Leintwardine
Chalcoides aurea (Geof.)	8.5.72	Marston Stannett
Chalcoides aurata (Marsh)	8.5.72	Marston Stannett
Chaetocnema concinna (Marsh)	7.5.72	Haugh Wood
	8.5.72	Marston Stannett
Chaetocnema hortensis (Geof.)	7.5.72	Haugh Wood
	15.6.72	Leintwardine
Sphaeroderma testaceum (F.)	8.5.72	Marston Stannett
	28.7.72	Lingen
	4.8.72	Aymestrey
Sphaeroderma rubidum (Graells.)	4.8.72	Barnett Wood, Lingen
Apteropoda orbiculata	7.5.72	Haugh Wood
Psylliodes napi (F.)	8.5.72	Marston Stannett
	28.4.73	Wigmore

My own records of the Coleoptera are largely confined to species with which I am most familiar, i.e., the insects associated with stored food products and the buildings in which they are housed.

Fam. Anthicidae	*Anthicus floralis* introduced on fruit.
Fam. Staphilinidae	*Ocypus olens* on stone floor of dairy, Madley.
Fam. Cleridae	*Necrobia violacea* decaying carrion, Dorstone.
Fam. Tenebrionidae	*Blaps mucronata* house in Eaton Bishop.
Fam. Cryptophagidae	*Cryptophagus* sp. outhouses and cellar.
Fam. Lathridiidae	*Enicmus minutus* common fungus feeders.
	Corticaria pubescens hay stacks.
Fam. Mycetophagidae	*Typhaea stercorea* hay stacks.
	Mycetophagus quadriguttatus damp store.
Fam. Ptinidae	*Niptus hololeucus* golden spider beetle in Hereford food shop.
Fam. Dermestidae	*Anthrenus* sp. larva as carpet beetle 'woolly bear' adults seen on flowers in summer.
	Attagenus pellio black carpet beetle, common in houses in Wye and Golden Valleys.
Fam. Anobiidae	*Stegobium paniceum* box of groceries, Dorstone.
	Anobium punctatum—the common furniture beetle common in old houses, barns, and furniture.

Recorded members of the Family Curculionidea (true weevils) include *Otiorhynchus singularis, Phyllobius urticae* (common on nettles) and *Phyllobius argentatus* at Vowchurch.

I have been unable to find a specimen of *Lampyris noctiluca* (glow worm) though I am told that they occur at Craswall and Cusop.

I received from Paul Barber (Dinedor) two stag beetles larvae Fam. Lucanidae, one too damaged to identify to species. The other remains firmly embedded in the wood and it is hoped that finally the adult beetle may emerge.

Fam. Coccinellidae—members of this family recorded in the Golden Valley include *Adalia bipunctata, Coccinella 7-punctata- Coccinella decempunctata* and *Thea 22-punctata.*

Order Hymenoptera (saw flies, ants, bees, wasps, ichneumon-flies).

The first division into Symphyta includes the saw-flies, which have no constriction at the waist and the ovipositor is modified to form a saw. The larvae are very much like the caterpillars of the Lepidoptera but differ in having a single eye on each side of the head and there are normally 6 or more pairs of abdominal feet. *Phymatocera* was found in large numbers on solomon seal in Dorstone, another species was collected from grass (Vowchurch) and yet another unidentified species caused defoliation on wild plum (Dorstone).

Specimens of *Allantus arcuatus* were collected from a hillside in Vowchurch' Members of the second main division (Apocrita) have a constriction or waist between the fore and hind body, and the larvae are legless 'grubs'. The ichneumon flies and chalcid wasps belong to this group. Examples of ichneumon flies seen in the Golden Valley were *Amblyteles palliatorius* and *Ophion luteus* which is nocturnal and very often attracted to lights in houses. The small green *Torymus* sp. (chalcid wasp) was also observed. Of the social wasps, *Vespa vulgaris* appeared in much less frequent numbers than last year. *Vespa sylvestris* was occasionally seen and *Vespa crabro* (hornet) is still frequently to be seen in the Wye and Golden Valleys.

Several members of the Fam. Chrysididae (ruby -tailed wasps) were seen.

A solitary wasp of the Fam. Pompilidae (spider-hunting wasp) was seen in numbers in Vowchurch and Dorstone in the late summer.

Mr. G. W. Thomas of Kimbolton reported large numbers of *Bombus pratorum* (early bumble bee) in Middleton churchyard, and with *B.terrestris* (buff-tailed bumble bee) and *B. lucorum* these appear to be widespread in the county.

Large numbers of honey-bees (*Apis mellifera*) were noticed on young laurel leaves in the spring where they were possibly collecting some secretion used in nest-building.

Order Diptera (flies)

The flies are so numerous and widespread that I have not attempted to collect specimens, except of the Fam. Calliphoridae and Fam. Syrphidae. The former family includes species of *Lucilia* (green bottles) and *Calliphora* (blue bottles), but one interesting species *Pollenia rudis* (cluster fly) lays its eggs in the ground and the larvae are parasitic on earthworms during the summer months. In the autumn the adult flies enter houses in large numbers to hibernate and usually cluster together in groups, hence their common name. *P. rudis* has been very numerous this year, The related *Onesia* has also been recorded, and the flesh-fly *Sarcophaga carnaria*. All these species seem also to be attracted to the flowers of giant hogweed, mints, and ivy. In similar habitat, and on Michaelmas daisies the following hover flies (Fam. Syrphidae) were seen—*Syrphus nitidicollis, S. luniger, Heliophilus pendulus, Volucella pellucens*, and *Eristalis tenax*.

My attention has been drawn to News letter No. 20 of the Herefordshire and Radnorshire Nature Trust which given further information about other members of the Diptera found within Herefordshire.

I should be grateful to receive any specimens or records of unusual insects.

Industrial Archaeology, 1973

By C. H. I. HOMES

I HOPE that this report will be the first of a long line on the industrial archaeology of the county, a subject that has been very neglected possibly because many people only associate industrial archaeology with big industrial monuments like the Cornish beam-engine.

Herefordshire contains a large number of industrial archaeological items and sites, both large and small, mainly of an agricultural or domestic use.

In the city of Hereford are fine examples of cast-iron work e.g. Victoria Bridge with its fine lamps; the Mitre porch in Broad Street; the Green Dragon balcony opposite or the gas bracket on the front of the City Library.

The oldest and most numerous examples are the water-mills of the county of which there are some four or five hundred sites. These mills have been used for many purposes besides milling, e.g. paper-making, the cloth industry, saw-mills and generating electricity. Similarly the water on its way down the mill-race to the mill, and after it has gone through the mill has been used for many purposes, e.g. fish hatcheries; pumping; irrigation; domestic use; farm use and power for farms.

A typical example is Kingsland Mill (or Lugg Mill) near The Day House, Kingsland.

A weir across the river Lugg (SO 441625) diverts water via a half-mile long mill-race to the mill (SO 447623). The Domesday account gives two mills in the parish. This is probably one of them.

In the 18th century the mill-race was tapped upstream off the mill and water carried southward over the river in an aqueduct (SO 446623) to a pond in front of The Day House. From this pond an irrigation leet over a mile long was cut, down the side of the drive, under the road (SO 448621) and across the riverside meadows eventually rejoining the river. Practically all traces of this irrigation leet have now gone.

The main stream carried on from the pond southwards across the orchard where sluices diverted water into a shorter irrigation leet, passing under the road (SO 447619) on to the riverside meadows. Only the culvert under the road and remains of the sluice survive. The main stream crossed diagonally across the next orchard under the road (SO 446618) and on to the fold-yard pond (SO 450614) at St. Mary's Farm, with at least three sluices tapping off irrigation water on the way.

At St. Mary's the water divided. One stream flowed down the yard to a horse pond and out into the road where it flushed the village sewer. The rest of the water flowed across the fields to Holgate pond (SO 453613) and on again to the river.

The sluices and most of the ditches of this main-stream system, are still visible and were in use for watering farm stock up to seven years ago. The total length of the water courses is over three miles.

In 1873 the water supply to the mill appears to have been rebuilt. The aqueduct was replaced by a riveted iron trough, extra sluices fitted and an undershot water-wheel 15 ft. in diameter and 5 ft. wide bearing the inscription R.R. & W. MILLES LEOMINSTER FOUNDRY 1873 installed at the Day House (SO 446622) to drive a stationary threshing box and barn machinery. The wheel and its sluices, the aquaduct and the sluices at the mill appear to be all of the same date and type.

The barn machinery has been removed to make way for modern grain-drying equipment but all the rest is in situ and was last used about thirty years ago.

Farm water-wheels were not a common feature in the county. The only other surviving example that I know of is at Leen Farm, Pembridge (SO 383591). There appear to have been wheels at Broom Farm, Eardisland (SO 401595) and Trecilla, Llangarron (SO 535212), while at Paunton Court, Bishop's Frome (SO 670500) a wheel now removed alongside the barn has at various times driven barn machinery, a cider-making plant, a bone mill and hop-drying machinery.

Mammals, 1973

By W. H. D. WINCE

BATS. During September 1973 Mr. B. Stebbings of Monks Wood Experimental Station (Nature Conservancy) visited Herefordshire for a few days. He reported a small colony of long-eared bats (*Plecotus auritus*) at Coughton and found colonies of Pipistrelle (*Pipistrellus pipistrellus*) at Coughton, Ken Bridge and the Brilley district. Miss Laird also reported long-eared bats at Ashperton. There have been several records of bats, probably Pipistrelle, being found in recently built houses. In some of these they favour roosting sites where tiles are hung on the facing of a wall, the bat is able to get into the roost through a small gap between two tiles; this behaviour has been noted at Fownhope and Leominster.

RABBIT (*Oryctolagus cuniculus*). There has been an increase in numbers, the epidemic of Myxomatosis reported in 1972 being over.

HARE. Perhaps most commonly seen on roads at haymaking time. Several road casualties at this time seen in lanes. The hare tends to run away from a car whereas the rabbit tends more often to run across the road and make for a hedge. The impression is that a greater percentage of hares on the road become casualties.

RED SQUIRREL (*Sciurus vulgaris*). Mr. Kendrick saw one at Pontrilas in October and reported a colony at Abbey Dore.

WATER VOLE (*Arvicola terrestris*). A report by Mrs. Stephanie Roden Ryder is appended.

YELLOW NECKED MOUSE (*Apodemus flavicollis*). The cold weather movement of this species to houses was again noted. This species deserves study as to its status in the county and its movements during the year.

POLECAT (*Mustela putorius*). Polecats are exterminated on estates where there are pheasant shoots, Fenn traps being used. On one estate no less than 12 were killed by this method. On the other hand the polecat is encouraged in forestry areas as it is a predator on rodents. Polecats are to be found round rubbish dumps where rats abound.

OTTER (*Lutra lutra*). Statements that the otter is increasing in numbers should be taken with caution. It is said to have spread to smaller streams and that numbers are near pre-war figures due to this change of habitat. These statements have not been scientifically proved, there is much greater disturbance to its usual habitat nowadays because of increasing numbers of fishermen and picnicers on river banks in some districts and the popularity of canoeing in other areas. No figures are available of otter numbers on small streams and ditches, in any case these would dry up in a drought and one would then expect to have records of sightings from the bigger rivers.

FALLOW DEER (*Dama dama*). The long haired variety has been observed at Gatley. Two fallow deer were killed by traffic on Dinmore Hill, this number may well be an underestimate, there are reports that deer so killed in other parts of the country end up in larders.

RED DEER (*Cervus elaphus*). Dr. Smith of Bircher saw a stag in that district. She is very familiar with this species and noted that the animal was a 'royal'.

Arvicola Terrestris

By STEPHANIE R. RYDER

WATER VOLES are reported to be less numerous in the west of the British Isles than they are in the east and south-east. They are absent in the Scottish Isles and the whole of Ireland. Yet the river Wye appears to support a very satisfactory number of these harmless and unobtrusive rodents.

Round about Ross-on-Wye some interesting specimens have been observed this year. As well as some sporting a white tuft to the tail, a fairly common variation, there are also several animals having a white spot between the ears. One female has a spot between the shoulder blades as well as between the ears. The small patch of white hairs is approximately two centimetres by three, being slightly oval shaped.

Previously such white spotted water voles have only been observed in Surrey.

Unfortunately, the popularity of the Wye as a fishing river is resulting in a large spread of *Rattus Norvegicus*, the brown rat. Anglers leave behind them large amounts of sliced bread, sandwich bits, and greasy paper. As soon as they leave their swims for the day, the rats emerge to scavenge.

The brown rat is also a great predator of water voles, destroying their litters, killing and eating adults and taking over their runs and burrows.

If the water vole is to survive, an effort will have to be made to eradicate the rat from the river banks.

Little observation has so far been carried out in the county, and any member wanting a new project would find fresh ground if he took up the study of Arvicola.

Information is sought of colour mutants, estimated numbers along reaches, of both the river Wye and other water bearing parts of the county.

R. H. Johns Ltd., Daniel Street, Newport.