

# HEREFORDSHIRE

its natural history, archæology, and history.  
Chapters written to celebrate the Centenary  
of the WOOLHOPE NATURALISTS' FIELD CLUB,  
founded in 1851

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## FOREWORD TO THE CENTENARY VOLUME OF THE WOOLHOPE CLUB BY THE RIGHT HONOURABLE J. P. L. THOMAS, M.P. FOR HEREFORD

AT Midsummer last year that indefatigable scholar Mr. F. C. Morgan, to whom Herefordshire owes so much, warned me that the members of the Woolhope Club had resolved to ask me to write the foreword to the Centenary volume of this Club. Only the madness so closely associated with that time of the year could have prompted them to ask me, and, now that the moment for writing the foreword has arrived, I am appalled at my inadequacy. I have a deep and abiding affection for the Woolhope area from which the Club takes its name, but my knowledge of the ecology of Herefordshire is deplorably skin deep compared with the knowledge of those who have written the chapters of this book. They study at leisure and in detail the geology and the botany and the ancient architecture of Herefordshire; I catch only glimpses of all these attractions from the wheel of my car as I hasten from village meeting to village meeting in the hurry of modern politics. How different, for instance, is the lot of Mr. Gavin Robinson, in the peace of his Golden Valley home studying the characteristics of the prehistoric man of Herefordshire, from mine when I face the latter's descendants and their characteristics in the High Town of Hereford at the open air meetings of election time!

We who love Herefordshire have reason to be proud of the Woolhope Club for bringing much fame to our county, but surely this Club has done far more than that. By its researches into the botany and the geology of this most important district it has done much to help the economic life of the whole country. It may be invidious to mention the names of individuals, but I feel sure that, among those who have gone, Herefordshire must feel special gratitude towards the memory of the Rev. W. S. Symonds who founded the Club; to Dr. H. G. Bull and his "forays among funguses" which led to the forming of the Mycological Society; to Mr. Henry Bulmer of apple fame; and in later years to Mr. George Marshall, F.S.A. The present leaders of the Woolhope Club speak for themselves in the articles in this book. Those who read these chapters will find a wealth of information, both scientific and topographical, and they will realise how many experts we have amongst us in the unspoiled county of Hereford.

J. P. L. THOMAS.

ADMIRALTY HOUSE, WHITEHALL,  
4th January, 1954.





WILLIAM SAMUEL SYMONDS, F.G.S.  
(1818-1887)



HENRY GRAVES BULL, M.D.  
(1818-1885)



GEORGE MARSHALL, J.P., F.S.A.  
(1869-1950)



ALFRED WATKINS, J.P., F.R.P.S.  
(1855-1935)

# WOOLHOPE NATURALISTS' FIELD CLUB

## CHAPTER I

### *An Outline of its History* 1851-1951

By F. C. MORGAN, M.A., F.S.A., F.L.A.

WITH the greater freedom of thought permissible after the Reformation, men such as Francis Bacon and others tried to solve the secrets of nature on a surer basis than hitherto had been possible. Herefordians, however, may be interested to know that at intervals from Norman times onwards their city was a centre for the study of natural science. Robert de Losinga, bishop 1079-95, was learned in all the arts, particularly astronomy and calculation, and at the end of the twelfth century these subjects were taught here.<sup>1</sup>

The rise of scientific societies really began in 1660 A.D., when 'The Royal Society of London for Improving Natural Knowledge' was founded. The nucleus of this existed, however, fifteen years earlier, when weekly meetings were held by 'divers worthy persons inquisitive into natural philosophy, etc.'<sup>2</sup> Richard Boyle spoke of the 'Invisible College' in 1646. Some 'Philosophers' formed a society in Oxford about 1648, in the rooms of Dr. Wilkins, Warden of Wadham College. In 1660 the members met at Gresham College to listen to a lecture by Mr. Wren, and afterwards 'did withdrawe for mutuall converse', and discussed a proposal to found a 'College for the promoting of physio-mathematical-experimental learning'. Sir Robert Moray (Murray) was elected the first president, and the charter of incorporation, dated 15th July, 1662, was obtained. From this source societies for the study of nature sprang up at intervals throughout the country. In London the Linnean Society was founded in 1788, the Geological Society in 1807, and the Astronomical Society in 1820. The work of members of these societies soon spread its influence. In 1831 the British Association held its first meeting in York, it being the offspring of the Yorkshire Philosophical Society, founded in 1822. At that time England lagged behind other countries in scientific knowledge: Sir David Brewster said that not a single philosopher (a term then applied to scientists) enjoyed a pension, an allowance, a sinecure, the favour of his sovereign, or friendship of his ministers.<sup>3</sup> Even the British Association was the butt of Dickens.<sup>4</sup>

From this time onwards progress became rapid, and geologists especially became active. Sir Roderick Impey Murchison (1792-1871) published his 'Silurian system' (largely a study of the areas to the west of the Malverns)

in 1838. John Phillips<sup>3</sup> wrote for the Geological Survey *The Memoirs of the Malvern Hills*, published in 1849. For these works various geologists stayed at the *Duke of York Inn*<sup>6</sup> at the east foot of the Holly Bush Pass, where they discussed their problems. Here they were met by the Rev. William Samuel Symonds, rector of Pendock nearby, a distinguished Herefordian, born in the city in 1818. He was a geologist of great distinction, a lover of the history and folk-lore of his native county, and besides writing on these subjects wrote several good historical novels.<sup>7</sup>

In 1851 Symonds addressed the 'Literary, Philosophical, and Natural History Institution' of Hereford, founded in 1836 as the 'Herefordshire Natural History, Philosophical, Antiquarian, and Literary Society'. He spoke of the success of the Cotteswold, Tyneside, and Berwick field clubs,<sup>8</sup> and inspired by this, and by the wonderful discoveries then taking place around them, members of his audience and others decided to found the 'Woolhope Naturalists' Field Club'. This is named after the Woolhope dome, where the Silurian rocks have been greatly uplifted and appear through the Old Red Sandstone cover.

At first the Club was limited to forty members, with the addition of Honorary Members. An annual meeting had to be held in January in each year, when the President and Hon. Secretary were appointed, and the places for three field meetings selected. For these members resolved to meet for breakfast at 9 a.m. at the country inn nearest to the place chosen for study. Afterwards they began their researches, had dinner at 4 p.m., and then heard papers relating to the days' work.

The first field meeting was held on the 18th May, 1852. Members had breakfast at Tarrington at 9 a.m., with the Rev. W. S. Symonds in the chair in the absence of the President, Mr. R. Lingwood, through illness. Mr. M. J. Scobie (whose bust is on the wall in the Woolhope Club room) was Secretary. Unfortunately heavy rain prevented out-door work before noon, but bones of an extinct elephant, and other mammals, found at Bosbury during work for the Hereford and Gloucester Canal, were examined. The Secretary then read a learned paper on the geology of east Herefordshire. By 2 o'clock the weather cleared and after visiting Stoke Edith Park and gardens, by permission of Lady Emily Foley, under the guidance of Mr. Robertson, her horticulturalist, the party proceeded to what at that time was called the Woolhope valley of elevation, seeing various quarries on the way. Bad weather again prevented a visit to Woolhope, but 'a party of fatigued and hungry philosophers discussed with evident relish a new class of subjects in the shape of an excellent dinner',<sup>9</sup> and after drinking the loyal and other toasts, they separated about 8 p.m. Some had travelled twenty miles each way, a long journey in those days, to attend this memorable meeting.

The next meeting was at Whitchurch and district on 20th July, 1852, when a start was made in a stage coach at 7 a.m. Mr. Lingwood presided, and Sir Roderick Murchison, Hugh Strickland, the Rev. P. B. Brodie, and other distinguished geologists were present. After doing much geological and botanical work they had dinner at the Crown Inn, papers were read, healths were drunk, and the party returned home at 7 p.m.

The details of these two meetings give some idea of the strenuous work

of our great predecessors. The annual meeting was the only one held indoors, and at first took place in private houses; later in either the Green Dragon, the museum in Castle street, or the City Arms.

In 1866 revised rules came into force, and the limit of forty members was removed. The first mention of archaeology, which in the twentieth century became of importance equal to the other work of the Club, appeared the same year. A joint meeting of the Worcester, Cotteswold, Woolhope, and Malvern clubs was held at Malvern on the 12th September, where 'a grand gathering of naturalists' took place at Townshend House, the hydropathic establishment of Dr. —. Grindrod, whose museum was inspected. A visit to the Priory followed, where a description of the building was given by the Rev. G. Munn. Unfavourable weather prevented outdoor work, therefore the party returned to Townshend House, where papers were read. During the proceedings a diversion was caused by the production by Edwin Lees, a skilled Worcester botanist, of 'a rude drinking cup . . . that had been buried with the ashes of a Silurian chieftain on the summit of the Worcestershire Beacon'. The Presidents of the clubs and others drank water out of this vessel, which is illustrated in colour in the *Transactions*. As the host was a staunch teetotaler this was a suitable thing to do, perhaps. Other members had tea and coffee provided for them. The weather having cleared, the party examined the North Hill, and afterwards nearly seventy sat down in the new concert room to dinner. This was 'good as far as it went', but the guests had to take their share in 'waiting' in more senses than one. Evidently this was an early occasion of food rationing.

In 1867 fine drawings in colour of fungi began to appear in the *Transactions*, in addition to illustrations of trees, etc., in black and white, and actual photographs. The drawings of fungi were due to the great Dr. H. G. Bull<sup>10</sup>, who next year on the 9th October began the famous 'forays among the funguses'. These led eventually to the formation of the British Mycological Society<sup>11</sup>, known throughout the scientific world. This has had inestimable results for the benefit of humanity by the study of fungus diseases of plants and animals and their remedies. The uses of fungi are also studied. Indirectly perhaps the discovery of penicillin may be traced back to the early days of the Woolhope Club. The Mycological Society still call their outdoor meetings 'Fungus forays'.

Distinguished scientists and members of the Club continued to contribute important papers to the *Transactions*, especially on geology and botany. These are often referred to by scientists at home and abroad, who acknowledge their debt to the Club. Many species of fossils and living plants and animals are first recorded in the *Transactions*.

The large number of specimens collected, and the importance of the work of the Club, soon made a permanent home necessary. In 1870 Mr. (afterwards Sir) James Rankin generously offered to build a museum for the Club in Hereford. Being requested by the citizens to add a Public Library he consented to do so on the understanding that the Club should have a permanent home in the building. The Corporation of Hereford accepted Mr. Rankin's gift and agreed to this. From 1874 onwards a room on the first floor of the library was considered to belong to the



Club, and the door lettered 'Woolhope Club Room'. Unfortunately as the Club is not a corporate body it cannot own real property, and is not mentioned in the deed of gift to the city. The moral right to the exclusive use of the room is undoubted, but, in the opinion of the members of the City Council in 1949, the Council's legal right to the room being the greater, the Club officials had to sign an agreement whereby a tenancy only was acknowledged. Opinion on the justice of this must be left to others to decide.<sup>12</sup>

The benefits derived from the close association of the Club with the museum and library have been mutual. The Club had the full use of the room free of all charges, and in return gives all its collections to the city museum. Some of these are of supreme importance. Practically all specimens in the museum of local natural history (local fossils, birds, birds' eggs, and mammals), and of archaeology (including the results of excavations at great cost of pre-historic camps and Roman settlements) are gifts from the Club. Additions are constantly being made. Type specimens of Old Red Sandstone fishes collected over many years, and a cabinet of diptera (two-winged flies) bequeathed by Dr. J. H. Wood, being of national importance, are now in the British Museum at the request of the Trustees. In exchange for the former they have given a number of life-like reproductions of the fishes, and the representatives of the Wood family have allowed the interest on £200, bequeathed to the Curator for the time being for the care of the specimens, to be paid to the Museum Committee for the purchase of scientific specimens.

Dr. T. A. Chapman's fine collection of lepidoptera in expensive cases must also be mentioned.

All through the hundred years of its existence the Club has published lists of local specimens of animals and plants: these are added to as new discoveries are made. Among these lists are:—

- Fungi, frequently in the first fifty years.
- Carices, 1881, by the Rev. A. Ley.
- Rosaceae, 1882, by the Rev. A. Ley.
- Lepidoptera, 1866, by the Rev. T. Hutchinson.
- Birds, 1889, by Dr. H. G. Bull.
- Birds, 1899, by the Rev. T. Hutchinson.
- Birds, 1941, by H. A. Gilbert and C. W. Walker.
- (A new edition of the last is now being prepared and probably will be published by Messrs. Witherby.)
- Shells, 1898, by A. E. Boycott and E. W. W. Bowell.
- Mosses, 1933, by the Rev. C. H. Binstead.
- Coleoptera, 1949-50, by J. R. le B. Tomlin.
- Aculeate hymenoptera, 1934, by H. M. Hallett, with additions in 1951.
- etc., etc.

In 1874 an important decision was made concerning the publication of the '*Herefordshire Pomona*'. This was due to the initiative of Dr. Bull, who took a great share in the work of production, and resulted in the issue of two magnificent folio volumes with full page illustrations of every known variety of apple and pear grown in Herefordshire and

elsewhere. Mr. Henry Bulmer, of Credenhill, a noted pomologist, brought Dr. Robert Hogg to the meeting when the question of publication was considered and induced him to edit the text.<sup>13</sup> The excellent drawings were made by Miss Edith E. Bull, the doctor's daughter, and Miss Alice B. Ellis. The Club possesses a copy of the '*Pomona*' which Dr. Bull had bound in an especially beautiful binding for his wife. These volumes were given by his last surviving child, Miss Lelia Bull: it is a work of which any society could be proud. The Club also issued an octavo volume on '*The apple and pear as vintage fruits*', by R. Hogg, edited by Bull, in 1885.

Another important publication is the '*Flora of Herefordshire*', by the Revs. Wm. Henry Purchas and Augustine Ley, in 1889. It includes the mosses and fungi, and holds a high place among county floras. With the changes in drainage and agriculture, and the spread of population, that have taken place during this century a new edition is needed, and the work of preparation for this is being undertaken by members of the Club and other botanists.

The geological work of the Club has been ably carried on by Prebendary Crouch, Dr. D. M. McCullough, Mr. G. H. Piper, Mr. W. Elliot and in more recent years by Mr. L. Richardson, who contributed '*An Outline on the geology of Herefordshire*' (68 pages with illustrations) in 1907, and '*The Water resources of Herefordshire*' as his Presidential address in 1947. The Rev. B. B. Clarke has also contributed papers on this subject in 1949, 1950, and 1951, and is the author of the chapter on geology in this volume. In 1951 he discovered in the rocks towards the top of Dinmore Hill the fossil of what is thought to be the earliest air-breathing animal so far found in this country: it is a little Myriapod, and he has named it *Kampecaris dinmorensis*.

As previously mentioned, by the beginning of the twentieth century the Club was devoting more time to the study of local archaeology and history, without neglecting scientific activities. Dr. Henry Cecil Moore began his career as an engineer in the Indian Army and saw service in the mutiny. In 1866 he turned to the medical profession, owing to a breakdown in health due to strenuous work at Aden. He began his new profession in Birmingham General Hospital, and was later House Surgeon at Hereford Infirmary from 1872-79, and Medical Officer for Hereford from 1899 until his death in 1908. After Dr. Bull's death in 1885 Moore was the prime mover in the work of the Club, becoming Hon. Secretary from 1887<sup>14</sup> to 1907, but holding the office jointly with Thomas Hutchinson from 1896-98 and 1900-1907, except for 1899, when Hutchinson acted alone. He was an indefatigable editor of the '*Transactions*', and was responsible for the publication of the volume which covers the period from 1852 to 1865, which he compiled from the minute books and articles in the local newspapers. His own contributions number about one hundred on natural history, archaeology, history, and other subjects.

Thomas Hutchinson, another well-known local naturalist, was Hon. Secretary from 1908 until his death in 1916, holding the office jointly with Herbert Jones in 1915. He contributed many papers, including those on birds and lepidoptera.

The volume of *'Transactions'* for 1900 shows the variety of subjects studied by members of the Club under the leadership of Moore and Hutchinson. It includes papers by writers on local manorial customs, the Kemble family, local churches, the Mappa Mundi, history of Hereford, and local tokens, in addition to several on natural history.

George Marshall, F.S.A., succeeded Hutchinson as Hon. Secretary. He was the son of George William Marshall, York Herald, and had an unrivalled knowledge of local history and archaeology. His contributions to the *'Transactions'* are numerous, beginning in 1904 with an account of a columbarium of the first half of the thirteenth century he had found in the tower of the church at Sarnesfield. During the time he was Hon. Secretary he arranged and led all the field meetings, and gave innumerable talks upon the churches and other places visited. These talks he usually developed into papers for the *'Transactions'*, and they are the best descriptions extant of many buildings, as their history was treated equally with their architecture. In his young days Marshall had visited many of the churches in Herefordshire, and described them as they then were in well-written folio volumes, with illustrations made by himself. After his retirement in 1946, and when stricken by illness, he continued to write papers under many difficulties, and almost completed a description of all the fonts in the county, recording many hitherto unknown facts. This work was finished by his daughter, Mrs. E. Ball, and the present writer from material left by Mr. Marshall, who lived to see two of the three parts of the publication through the press. He also wrote a long paper on *'Early Herefordshire coats of arms'*, published in 1946, but left uncompleted papers on the monumental effigies, the monumental brasses, and other local subjects, which it is hoped may be finished by experts at some future date. His principal publication, however, was not issued by the Club, although dedicated to the members. It is *'Hereford Cathedral, its evolution and growth'*, to which he devoted years of study, although unable to begin the writing until 1947, and then under severe handicaps. He greatly hoped to see the volume in print, but sad to say, it did not appear until exactly one month after his death on 11th December, 1950.

George Marshall's name will be remembered as long as the Woolhope Club exists, both for the value of his contributions to it, and for the bequest of his important archaeological library, together with the sum of £250 for its upkeep. His gifts while alive were always anonymous.<sup>13</sup>

Another twentieth century stalwart was Alfred Watkins, F.R.P.S.,<sup>14</sup> the inventor of the photographic exposure meter and the tank development of negatives, and a constant contributor to the *'Transactions'* from 1890 until his death in 1935. His principal work was a volume on all the remains of preaching crosses in this county, with a photograph of each, published by the Club in 1930. The number of photographs by Watkins that appeared in the *'Transactions'* is very large, and made the latter some of the best illustrated volumes of their kind.

In 1912-3 Mr. G. H. Jack, F.S.A., on behalf of his fellow members, superintended excavation of the Roman city of Kenchester, which was continued in 1925, the break being caused by the war. Reports upon

this costly work appeared in the *'Transactions'* and also were published separately, profusely illustrated in colour and in black and white. Numerous relics of this Roman residential city are housed in the Hereford museum, and include two tessellated pavements.

Another excavation was at the Iron Age camp at Poston by Mr. G. Marshall and the owner, Mr. R. S. Gavin Robinson, in 1933, 1934, and 1937. This also resulted in the finding of important relics of the past, and has thrown much light on the times of the occupation. A preliminary report by Marshall appeared in the *'Transactions'* for 1934, but the war and illness prevented him from completing the story. A large quantity of material still awaits description, and it is hoped that conclusions on the development and history of this camp and of its relation to Sutton Walls will be written in full ere long by an expert archaeologist.

Much work has been, and is still being, done by Mr. J. Griffiths on pottery sites in the north of Herefordshire. Interesting discoveries in the art of local potters from about 1600 to about 1800 have been made. Mr. Griffiths has a large collection of a great variety of wares, which he has pieced together from sherds found on the sites of the kilns. Some are of great beauty and of a style not found elsewhere.<sup>15</sup>

#### THE LIBRARY

By 1929 the Club had an important library of scientific and archaeological books which had been catalogued on cards inserted in the City Reference Library catalogue by the library staff. This was done by arrangement with the Library Committee, and in return the Club agreed to allow the free use of their books by non-members in the Reference Library, under proper supervision. Students have made much use of this privilege, as many volumes only to be found in special libraries are available. They include the publications of some few learned local societies in the southern half of England and Wales (kept up-to-date by exchanges), and many valuable (some unique), books on stone crosses, bequeathed by Miss Madeline Hopton in 1918. In 1941 the late Mr. C. A. Benn gave the sum of £90 for printing a catalogue of the library to which he added many volumes from his own collection.

Lists of additions are regularly printed in the *'Transactions'*.

The Woolhope Club, having completed its first hundred years of life, can look back with pride upon its past and with hope for the future. It has somewhat changed its character and increased its membership from forty to about three hundred and fifty; new members are always welcomed and are urgently needed.

The strenuous meetings of the eighteen-fifties are held no longer. Modern facilities for travel permit a later start for outdoor studies which are made under skilled guidance. In earlier days when many sciences were in their infancy, it was possible for a student to know all that had been written upon several, and a beginner frequently was able to make new discoveries. Now the accumulation of knowledge is too vast for this to be done. All members of this and other clubs, however, can help

scholars by carefully watching for, and reporting, finds in any field of research to the Club's specialists.<sup>18</sup> There is much to be learned about Herefordshire, and although the 'Transactions' of the Woolhope Club contain by far the most authoritative information on the county that is available, this must be added to regularly if the great reputation of the Club is to be maintained. The increase in the sum of human knowledge ultimately leads to the benefit of humanity. Even in these hard days the motto of every member should be that of the Club

'HOPE ON, HOPE EVER'

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3. Howarth, O. J. R. *The British Association for the advancement of science*. 1931.
4. In *The Mudfog Papers*, first published in *Bentley's Miscellany*, 1837-1839.
5. Phillips's mother was a sister of William Smith (1769-1839), the founder of the science of stratigraphical geology. A conglomerate at West Malvern was found by the sister of Phillips and was named after her.
6. From information given by the late R. F. Towndrow, A.L.S., of Malvern, who knew W. S. Symonds well.
7. *Malvern Chase*, 1880, and *Hanley Castle*, 1883. The first is a story of the Wars of the Roses, and the second of the Civil War of the 17th century; both are full of local lore.
8. Woolhope Club *Transactions*, 1852-65, pp. 1-2.
9. At the *Green Man*; see *Transactions* 1852-65, pp. 9 et seq.
10. Dr. Bull had the following qualifications: Diploma in Medicine, Edinburgh; Diploma in Surgery, London; Diploma in Surgery, Edinburgh; License from the Apothecaries Co., London; Gold Medal from University of Edinburgh for *Dissertation on diseases of the brain*; Sir Charles Bell prize for senior class of Surgery, Edinburgh, 1841; Gold Medal for best essay on the *Viability of the Infant*, Edinburgh.
11. Founded 1896.
12. For a history of the negotiations between the Hereford City Council and the Club see the *Transactions*, 1949, pp. 86-7.
13. These volumes contain coloured illustrations of 432 varieties of fruit, English and foreign, on 72 large plates, in addition to a wood-cut section of each. It has a learned introduction by Bull on the history of the apple and pear from classical times onwards. Lists of varieties recommended by the Club for various purposes, with their origins, etc., are given. The lives of Viscount Scudamore (1601-1671), who was the first grower who tried to improve Herefordshire orchards, and of Thomas Andrew Knight (1759-1838), who began to breed plants on scientific lines for the first time,

are included. In 1878 Dr. Bull wrote to his wife, then at Clifton, to say that he was thinking of returning all subscriptions received as the cost of plates and blocks had increased from £7 and 10s. to £16 and 14s. each.

14. He succeeded the Rev. Sir G. H. Cornwall, Bart., Hon. Secretary, 1866-75, Arthur Thomson, 1876-7, and Theophilus Lane, 1878-86.
15. A Presidential badge in memory of Marshall was given anonymously in 1951. It is in colours and depicts the Woolhope dome in the centre, with a salmon in the Wye and a geologist's hammer and botanist's vasculum below, surrounded with the name of the Club. The reverse commemorates George Marshall.
16. See obituary notice in the *Transactions* for 1935, p. 165. Watkins supplied free of cost 90% of the photographs reproduced between 1900 and 1933.
17. A short account, with illustrations, written by G. Marshall was published in the *Transactions* for 1946. Since then many more types of pottery have been found by Mr. Griffiths.
18. An example of what can be done in this way is the reporting of the cist in the Olchon valley by the late James Smith to a member in 1930. Shortly after this report was received a party of archaeologists, a doctor, and photographers were on the scene, and so saved this relic of Bronze Age man from destruction. It is now in Hereford museum.



# The Geology of Herefordshire

By THE REV. B. B. CLARKE, M.A., M.Sc.

## INTRODUCTION

ONE of the main things the geological research of the past hundred years has revealed is the vast length of time taken in building the landscape as we know it to-day. From childhood we are familiar with the meaning of a year, because it is between two birthdays. As we study history we become familiar with the significance of a century. It is however with very much longer tracts of time, to be measured in millions of years, that the geologist is concerned. It is often difficult even for him to realise the great lengths of time with which he is dealing. A special time-scale is used for measuring the age of rocks divided into *systems*, the very large divisions of geological time shown in column 1 in fig. 1; *formations*, rather smaller divisions shown in column 2; and for very detailed work *zones* which are the smallest divisions of all. A time-scale in millions of years, based on the breakdown of radio-active elements, is given for comparison in column 3. The actual scale is taken from the works of Professor A. Holmes but the figure for the Devonian has been slightly adjusted to allow for the classification of that system adopted here. It will be seen from the chart in figure 1 that geological history from Cambrian times, when the fossil record begins, represents some 500 million years. Before that is a great division of geological time, the Precambrian, so great in its antiquity that its record can now only be read with difficulty. Certainly a very great length of time is represented by the Precambrian rocks, at least as much as the whole of the rest of geological time or perhaps even three times as long.

For the last 500 million years, that is from Cambrian time onwards, we have fossils preserved in the rocks which help us to understand the conditions under which the rocks were formed and enable us to date them sometimes with great precision. It is the lack of fossils that makes the long period of the earth's history during Precambrian time so difficult to understand.

The whole vast length of geological time, Precambrian and all the systems that follow, perhaps 2,000 million years altogether, is occupied by three earth processes: periods of mountain building, cycles of erosion and cycles of sedimentation, these three processes following one another in any one area.

In the mountain building periods great ranges of mountains were built up by the folding of the earth's crust. The folds include every gradation from the giant upfolds, or anticlines, that make the continents, and the giant downfolds, or synclines, that make the oceans, to minute ruckles only a fraction of an inch across that can be seen in some rocks. Intense lateral pressure caused the earth's crust to buckle into folds often of a most complicated nature to give great ranges of mountains where before there were none, and often indeed where before was the bed of the sea. The same pressure caused huge masses of rock to over-ride one another

## CHART OF THE GEOLOGY OF HEREFORDSHIRE EXCLUDING PLEISTOCENE AND HOLOCENE

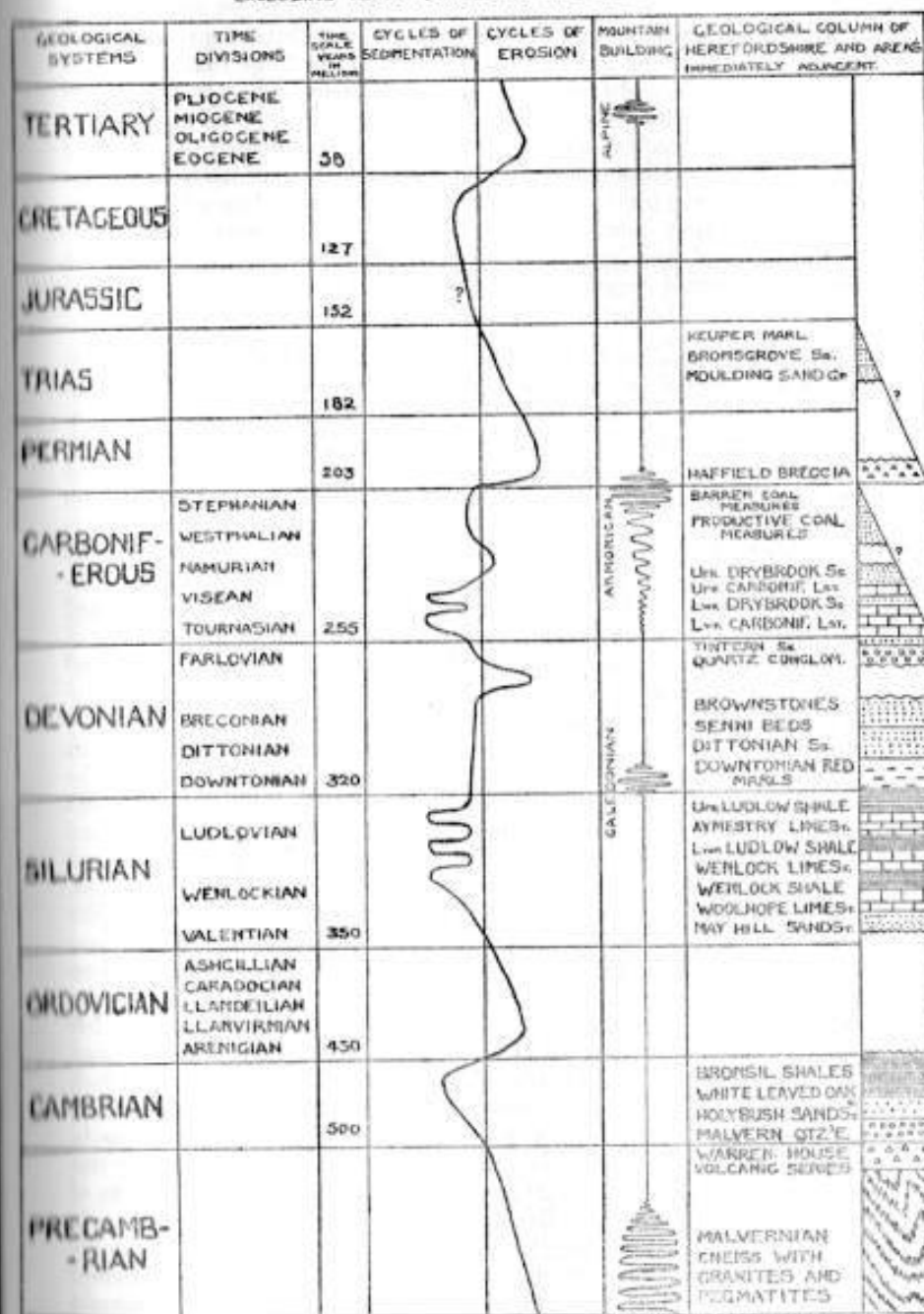


Fig. 1

sometimes for many miles along lines of slip called thrust faults. Associated with this mountain building there were intrusions of molten igneous rock into the surface rocks, sometimes in huge masses like the granite intrusions and sometimes into long narrow cracks in a region of tension called dykes. The intrusions of molten rock caused alteration of the surrounding rocks, and sometimes even partial melting. The lateral pressure was sometimes so great that the individual minerals that make up the rocks were forced into alignment to give rocks like schists. Associated with these mountain-building periods also, though not always limited to them, were periods of vulcanicity when volcanoes threw out in roughly concentric rings round the vents such rocks as lavas, tuffs and ashes.

Although generally periods of mountain building and cycles of erosion follow one another in any given area, actually erosion begins as soon as there is anything exposed above sea level to erode. Thus the cycle of erosion begins before the period of mountain building ends. Perhaps it would be true to say that sometimes in the earth's history mountain building is in the ascendancy and when it begins to die down erosion rapidly gains the ascendancy. One of the chief factors in erosion is weathering. This is the breaking up of rocks into their aggregate particles chiefly by solution. Rain water is always very slightly acid and this percolating into the rocks breaks them up. Some minerals expand and contract more than others, so that the alternate heating and cooling of day and night also cause the rocks to be split up. Alternate freezing and thawing of percolated water have a similar effect. Another powerful factor in erosion is corrosion, the cutting up of a landscape by streams and rivers. At the same time as the cycle of erosion operates in one area in another the dominant earth process is the cycle of sedimentation. The broken particles created by weathering are washed into streams and carried down to the sea to form new rocks. The fine material is carried in suspension, coarser material rolled along the bed of the stream, and pebbles and boulders carried along a little at a time when floods occur. It is this load of hard grains carried by the moving water that enables rivers to wear away the land surfaces. Thus the cycle of erosion in one area causes a cycle of sedimentation in another. Deposits are formed on flood plains, in the estuaries of rivers and out on the sea bed. Generally the material is finer in texture and less in quantity as the shore line is left behind. The sedimentary rocks formed in this way are conglomerates, grits, sandstones, clays and marls. There are other agents of erosion such as the wind which can wear away and polish even the hardest of rocks and cause the formation of new rocks such as the wind blown sands. The sea is also a very powerful erosive force. Stones often of great size flung against the base of a cliff in a high sea will break up the rocks of which the cliff is made. Other rocks are formed in the cycle of sedimentation besides those mentioned above. The organic limestones are perhaps the chief of these. Columns 4, 5, and 6 in figure 1 are an attempt to show the various cycles of sedimentation and erosion and the mountain building periods that have contributed to the geological growth of this Herefordshire area.

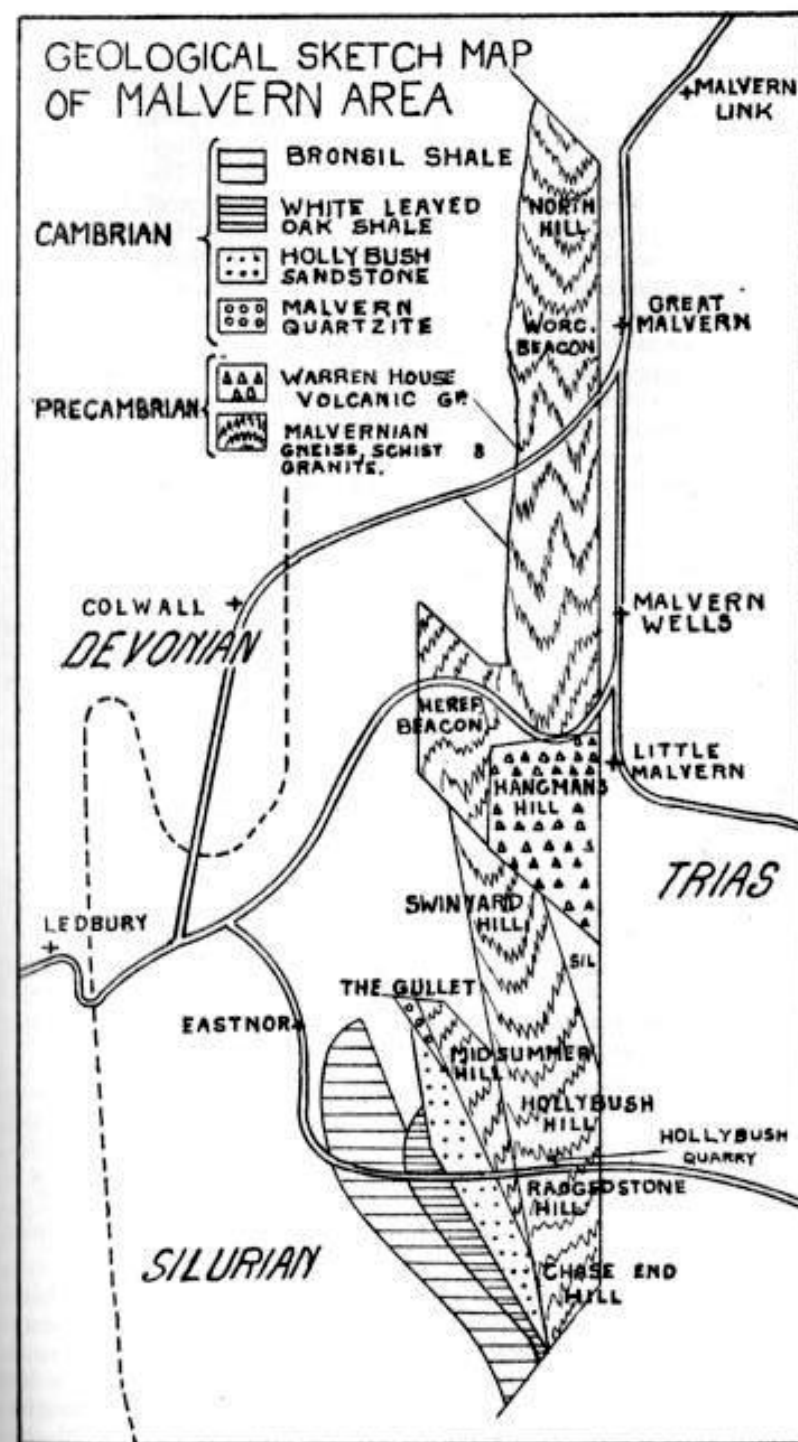


Fig. 2



With this introduction we can now turn to unravel the geological history of Herefordshire and as the county is not in itself a geological unit some of the areas immediately adjacent have to be included. The oldest rocks are the Precambrian, well seen in the north to south range of the Malvern Hills. These very ancient rocks form a floor to all the surface rocks of the earth. Sometimes, as in the Malvern area, mountain building has brought up these old rocks near the surface and later erosion has uncovered them. The rocks making the Precambrian floor of the area can be seen exposed at the surface at North Hill, the Worcestershire Beacon, Herefordshire Beacon, Hangmans Hill, Swinyard Hill, Hollybush Hill, Raggedstone Hill and Chase End Hill. They consist of two series, the Malvernian and the Uriconian. The former, which is the older of the two, is a series of igneous rocks consisting mainly of gneisses. These are old granites partially melted by the intrusion of newer granites and exhibiting beautiful foliation characteristic of gneisses. There are also schists, mica schists and hornblende schists, produced by intense pressure where the minerals, especially the mica, have become aligned. There are also some unaltered and therefore clearly later rocks of the granite type, e.g., a pink and green granodiorite. Many of these rocks are sheared along shear planes due to thrusting. These rocks can be inspected in the large Hollybush quarry on Hollybush Hill. The Malvernian is intruded by narrow dykes of a pink rock, pegmatite, consisting entirely of the minerals quartz and pink feldspar. The Precambrian was a time of great volcanic activity and this gives the second series of rocks at Malvern, the Uriconian. These consist of lavas like rhyolite and volcanic ashes and tuffs making a series of hard ochre-coloured rocks. They form the Warren House Group which makes Hangmans Hill, and can be seen exposed behind Little Malvern Priory. They are very similar to another group of Precambrian volcanic rocks in Shropshire which make the Wrekin, Caer Caradoc, Cardington Hills and others. There are no sedimentary rocks of Precambrian age at Malvern but 27,000 feet of them are in the Longmynd in Shropshire. These are a series of grey shales with some volcanic ashes followed by red sandstones. A sketch map of the Malvern area showing the distribution of the two series of the Precambrian rocks is given in figure 2.

The number of mountain building periods and cycles of erosion represented in the Precambrian cannot be appreciated from such a small area as Malvern, and because of the great antiquity of these rocks, cannot be ascertained with certainty anywhere. In Scotland where there is a much greater area of these older rocks there seems to be evidence of at least two mountain building periods, three cycles of erosion, and three cycles of sedimentation.

There are besides the main exposure of the Precambrian floor at Malvern two smaller areas. Hanter and Stanner Hills near Kington consist of an intrusion of the igneous rock gabbro, and at Huntley on the road from Ross to Gloucester is a very tiny fragment of a sedimentary series faulted on all sides so that its relation to the surrounding rocks cannot be known with certainty. The rock is a coarse grit with much green chlorite

in it. C. Calloway considered the rocks in both these small areas to be of Precambrian age.

## CAMBRIAN

The close of the Precambrian was a long cycle of erosion when the great land mass with its folded ranges, volcanoes and granite tors as well as the sandstone uplands were worn down to a low, almost flat, continent. Cambrian times began with an invasion of the sea from the west. The movements of the shoreline of this sea, as well as the variations in its depth, govern the geology of these parts not only through Cambrian times but through the two following major time divisions as well, the Ordovician and the Silurian. The Cambrian sea was deepest over North Wales and the Isle of Man and it shallowed towards the Midlands of England, though it deepened there and the coastline receded eastwards as Cambrian times progressed. The areas where we can see the Cambrian rocks to-day in the Midlands are small and scattered. They are at the south end of the Malvern Hills, two areas in Shropshire at Comeley and the Wrekin, at Nuneaton in Warwickshire and a very small area at the Lickey Hills in Worcestershire. All these provide similar evidence of a slowly deepening sea and a retreating shoreline. In every case the lowest deposits are coarse conglomerates followed by quartzites, then finer textured sandstones and at the top of the system very fine textured deep water shales.

At Malvern the Cambrian rocks are seen, as a glance at figure 2 will show, to the west of Midsummer Hill, Hollybush Hill and Raggedstone Hill. The succession is as follows:

4. Bronsil Shales
3. Whiteleaved Oak Shales
2. Hollybush Sandstone
1. Malvern Quartzite with Quartz Conglomerate at the base.

The quartzite and quartz conglomerate occur only in very small areas. They can be examined in the narrow pass on the north side of Midsummer Hill known as the Gullet. The conglomerate consists of well rounded pebbles of vein quartz and rocks derived from the Precambrian of the Malvern area in which the pink pegmatites are quite conspicuous. There are also some pebbles of grey shale which do not now occur among the Precambrian rocks of the Malvern area but are very reminiscent of the lower beds of the Precambrian of the Longmynd in Shropshire. This may indicate that the Longmyndian sedimentary series once extended much further south than the existing outcrop, and if the Huntley inlier is rightly assessed as Precambrian it further supports this view. The quartz conglomerate is a fascinating rock to examine in detail. Between the large pebbles of great variety are coarse roughly rounded grains of quartz and the whole rock is cemented to extreme hardness by a quartz cement. It seems clearly to have been originally formed on a shingle beach. The overlying Hollybush Sandstone is wider in its extent and can be seen where the Gloucester road from Ledbury approaches Hollybush Hill. It is a fine textured sandstone of a characteristic green colour due to the mineral glauconite which is said to be an indication of shallow water conditions. The Whiteleaved Oak Shales are rather more extensive

still and form the low ground to the west of Raggedstone Hill. They are dark grey micaceous shales. The Bronsil Shales make an even wider area. They are a much lighter shade of grey and form an arc to the west of the south end of the Malverns from Chase End Hill to Midsummer Hill.

It was in the Cambrian sea that the first definite forms of life existed that have been found as fossils. Remarkably it is no humble beginning but a sudden appearance of many forms with hard parts that could be preserved as fossils. Some of these earliest fossils are very complex in their structure. Anchored to the sand on the sea bed were the small bivalve brachiopods like *Micromitra phillipsi* and the larger *Kutorgina cingulata* which occur in the Hollybush Sandstone. Crawling over the sand were trilobites, complicated animals with headshields with compound eyes, segmented bodies and tails. These creatures have a world wide distribution in the Cambrian rocks and their presence is useful for zoning purposes. *Asaphus* and *Olenus* are recorded from the Bronsil Shales. On the surface of the Cambrian sea floated masses of dendroid graptolites such as *Dictyonema flabelliforme* which is recorded from the Bronsil Shales.

J. Phillips, W. S. Symonds and T. Groom were the pioneer geologists who contributed so much to our understanding of the geology of the Malvern area.

#### ORDOVICIAN

At the end of Cambrian times some earth movements took place about which very little is known. They were not enough to alter the main distribution of land and sea but they were sufficient materially to alter the coast-line. Throughout Cambrian times Herefordshire was under the sea which extended at least as far as Nuneaton, for there are old sea cliffs there. As the higher Cambrian beds at Nuneaton were formed under deep water conditions evidently in the latter part of Cambrian time the coast line was further east still. At the beginning of Ordovician time this coast line moved far to the westwards, indeed so far as to leave this Herefordshire area as land throughout Ordovician time. The Ordovician coast line lay roughly along the line of the Church Stretton fault (see figure 3), a some sixty miles long line of weakness in the earth's crust. It extends from Old Radnor in a north-easterly direction through Presteigne, Bucknell and Church Stretton to Lilleshall. L. J. Wills has suggested that this line separated a sinking sedimentary basin to the west from an upstanding stable area to the east. Thus the Ordovician sea lay to the west of the Stretton line and the land to the east. Only at the very end of the period did the sea invade this stable area. In Caradocian time it did so just a little way in the north to give the Ordovician rocks of the Wrekin area. So far as is known the sea never invaded the part of the stable area which included Herefordshire. A watch should however be kept on borings east of the Old Radnor-Stretton line to be sure of this. The Ordovician marks one of the greatest periods of volcanic activity the world has known. In the Shelve area in Shropshire

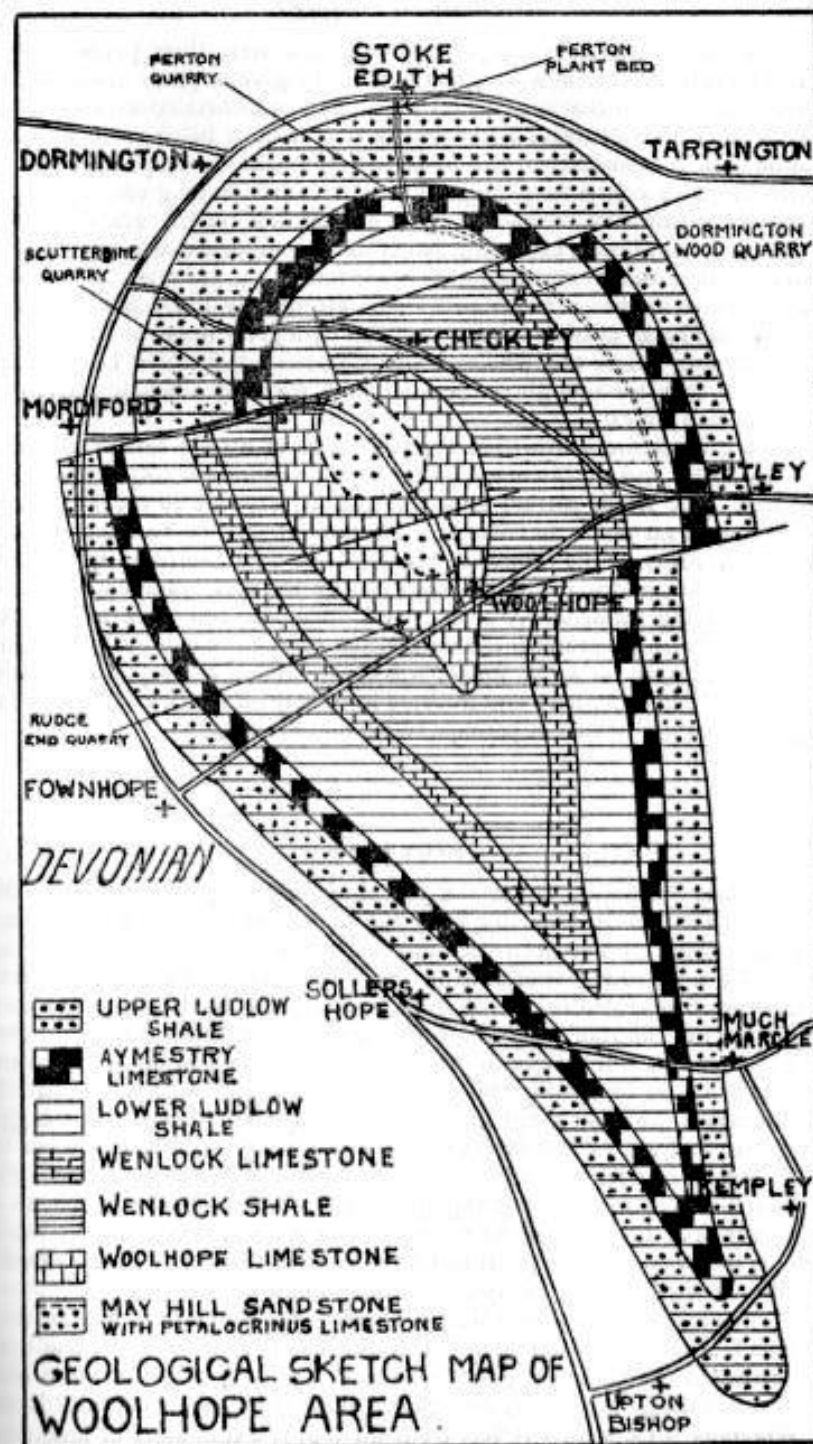


Fig. 3



where the succession is complete we see there were three periods when volcanoes burst forth with great vigour to give a great thickness of volcanic rocks in that area. This vulcanicity is associated in some parts with intrusions of dykes filled with a dark almost black rock, dolerite, similar in composition to the basalt which volcanoes erupt all over the world. This consistency suggests that it comes from great depths far below the influence of the variety of the surface rocks. The dykes are narrow walls of rock, extending sometimes for miles, intruded into cracks in areas of tension. The intrusive rock is forced into the crack in a molten condition and the rocks on either side are usually much altered. The Cambrian rocks at Malvern are intruded by a great many of these dykes and as they affect the whole of the Cambrian succession but not the Silurian they are thought to be associated with the volcanic activity of Ordovician times.

We can picture Ordovician Herefordshire as a land surface of Cambrian shales and sandstones with perhaps Precambrian rocks exposed in places. The whole surface would be entirely exposed to the weather as there were no plants to cover it. There were also no animals to roam upon it. Much of the Cambrian rocks was no doubt worn away in Ordovician times, and streams and rivers carried the rock fragments down to the sea lying immediately to the west on whose bed were formed the grits and shales that make the Ordovician rocks of Wales. Although the land surface, so far as we know, was quite lifeless, brachiopods and trilobites continued to thrive and increase in variety on the bed of the sea and graptolites still floated or perhaps swam on the surface.

#### SILURIAN

In Lower Valentian times the sea shore lay roughly along the Old Radnor-Church Stretton line as it had done almost the whole of Ordovician time. It has been mentioned that in Caradocian time the sea invaded a narrow coastal strip in the Wrekin area. In Ashgillian time however it retreated to the old shore line and remained there in the early part of the Silurian period. An old range of Precambrian mountains whose stumps still survive in the Longmynd, Nash Scar and Old Radnor seems to have run along this shore-line. In Upper Valentian time the land again sank, as it did in Caradocian days, but now a much bigger tract of stable area was submerged. The sea crept slowly eastwards till the whole of Herefordshire as far as Malvern was under water. The stumps of the mountains fringing the shore-line may have stood up as islands in an archipelago, for the Valentian rocks around them are coarse grits indicating a close proximity to the shore. By the end of Valentian time the shelf-sea was a strip at least forty miles wide.

The rocks formed in this transgression of the Valentian sea were sandstones, shales and limestones. The lowest bed is the May Hill Sandstone, also called the Llandovery Sandstone. It is usually a fine textured buff-coloured flaggy sandstone, though occasionally its colour is pink. In the Woolhope area, some five feet from the top, is a thin band of limestone,

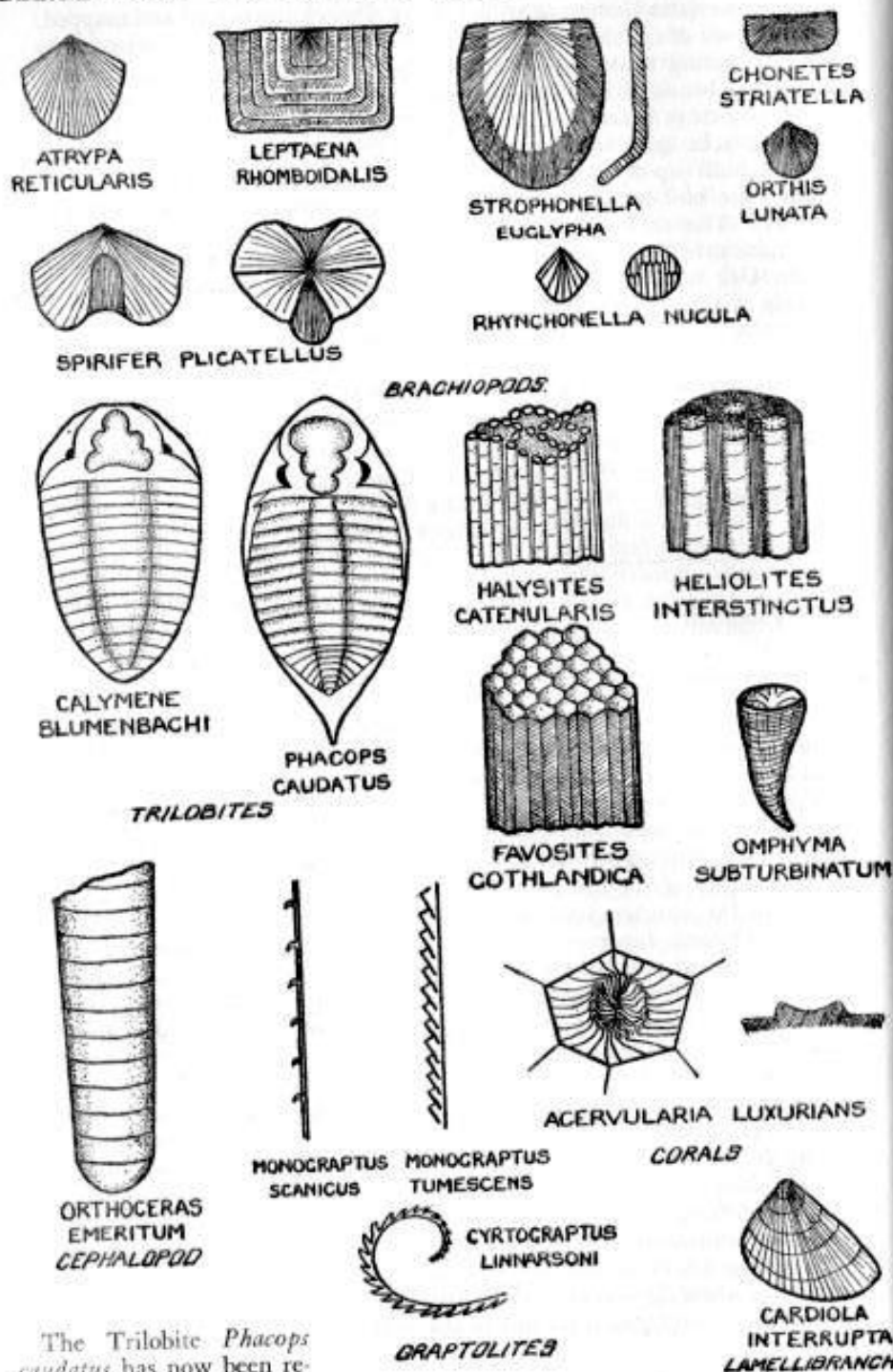
the Petalocrinus Limestone, which R. W. Pocock discovered and mapped. On the bed of the shelf sea throughout Wenlockian and Ludlovian times an alternating succession of limestones and shales was formed. There are three bands of limestone varying in thickness to a maximum of 400 feet, and three bands of shale one of which, the Wenlock Shale, is considered to be 2,000 feet thick in places. The limestones are organic limestones built up by organisms secreting lime as their skeletons. The shales are buff-coloured soft shales usually argillaceous, but sometimes sandy. The rhythmic succession of the Silurian rocks is remarkably constant over the whole of the area occupied by the shelf-sea extending from Usk to Dudley. The full succession which probably floors the whole of Herefordshire is as follows:

Ludlovian	Upper Ludlow Shales Aymestry Limestone Lower Ludlow Shales
Wenlockian	Wenlock Limestone Wenlock Shales Woolhope Limestone
Valentian	May Hill Sandstone or Llandovery Sandstone with Petalocrinus Limestone five feet from the top at Woolhope.

Over much of the county these rocks are covered by a thick blanket of younger rocks but they are exposed in three small areas where folding has brought them near the surface and erosion has now uncovered them. These are the Woolhope Dome, the May Hill uplift and the Usk uplift. There are also two broad bands of Silurian rocks, one west of the Malvern Hills and another south-east of the Church Stretton fault.

The causes of the remarkable rhythm from limestone to shale three times in the Silurian beds of the shelf-sea are not yet properly understood. Organic limestones originate through the accumulation of the calcareous hard parts of animals known only to thrive in clear shallow water. It has been suggested that oscillation in the level of the bed of the sea caused the shore-line to be further away at times and at those times the water became clearer and thus enabled the limestone building organisms to thrive.

So far as is known there was still no life on the land in Silurian days but as Herefordshire was part of the shelf-sea and that teemed with living forms these rocks are the richest in fossils that we have in the area. Many of the forms likely to be found are illustrated in figure 4 and the different families to which they belong are indicated. Brachiopods are extremely abundant. The round *Atrypa reticularis* occurs through the whole succession. The oblong almost square cornered *Lepetodonta rhomboidalis* occurs in the Valentian and Wenlockian. The large *Strophonella euglypha* is limited to the Wenlockian and common in the



The Trilobite *Phacops caudatus* has now been renamed *Dalmanites vulgaris*.

Fig. 4

Wenlock Limestone. *Spirifer plicatellus* with its curiously folded valves is common in this limestone also. The three little brachiopods *Chonetes striatella*, *Orthis lunata* and *Rhynchonella nucula* often occur together, a sure indication of the horizon of the Upper Ludlow Shale. Trilobites still crawled on the bed of the sea. *Phacops caudatus* and *Calemene blumenbachi* are found in the Wenlockian beds and the latter in the Valentian as well. Lamellibranchs, similar to the brachiopods in appearance, though usually unsymmetrical and of a much more complicated structure began to be somewhat common in Silurian time. *Cardiola interrupta* occurs in the Aymestrey Limestone. Uncoiled cephalopods like *Orthoceras annulatum* and *Orthoceras emeritum* are particularly common in the Ludlovian though they occur all through the Silurian rocks. The shell of these animals in fossil form looks rather like a cigar. It was made up of a number of distinct chambers and the creature lived in the latest addition to his shell carrying the rest on his back rather like an extremely tall top hat. The limestones have some fossils of their own, especially crinoids, corals and bryozoa. The crinoid was an animal living at the top of a stalk made up of segments and anchored to the sea-bed or some rock. It is usually these segments that are found in fossil form, either singly or several together. The stalk was very pliable which enabled the animal to pick up food as it was wafted about in the currents. It had a number of arms with which to do this. The corals are common in both the Woolhope and Wenlock Limestones and reach reef-building proportions in the latter. The old reefs can still be seen in many quarries. These large masses of very pure limestone are known to the quarrymen as croghalls. *Halysites catenularis*, the chain coral, *Heliolites interstinctus*, *Acervularia luxurians*, *Favosites gothlandica* and *Omphyma subturbinatum* are all corals occurring in the Wenlock Limestone. Bryozoa similar to the corals but much smaller also occur in the Wenlock Limestone and the rather rare *Ptilodictya lanceolata* has been found in the Aymestrey Limestone at Woolhope.

Graptolites are not such common fossils in the rocks of the county as they are in the deep water shales of the Welsh area but they did apparently drift across the shelf sea. *Monograptus scanicus* and *Monograptus varians* are recorded from the Lower Ludlow Shale at Clouds in the Woolhope area, *Monograptus tumescens* from the same shales at Cockshoot, and the little coiled *Cyrtograptus linnarsoni* from the Wenlock Limestone near Fownhope. The Silurian rocks are zoned by means of graptolites and the above are all zone fossils except *M. varians*. It is thus useful to have these zones established though much more work needs to be done in this field.

While any of the five areas already mentioned provide rock sections to study the Woolhope Dome is perhaps the best area and a sketch map of this is given in figure 5. The localities to visit in order to see the various rock types and collect fossils are scattered in various parts of the dome. The May Hill Sandstone and Petalocrinus Limestone are to be seen in the track running in an easterly direction from the road above Scatterdine, itself a great quarry in the Woolhope Limestone. Another quarry in the Woolhope Limestone is at Rudge End between Woolhope and



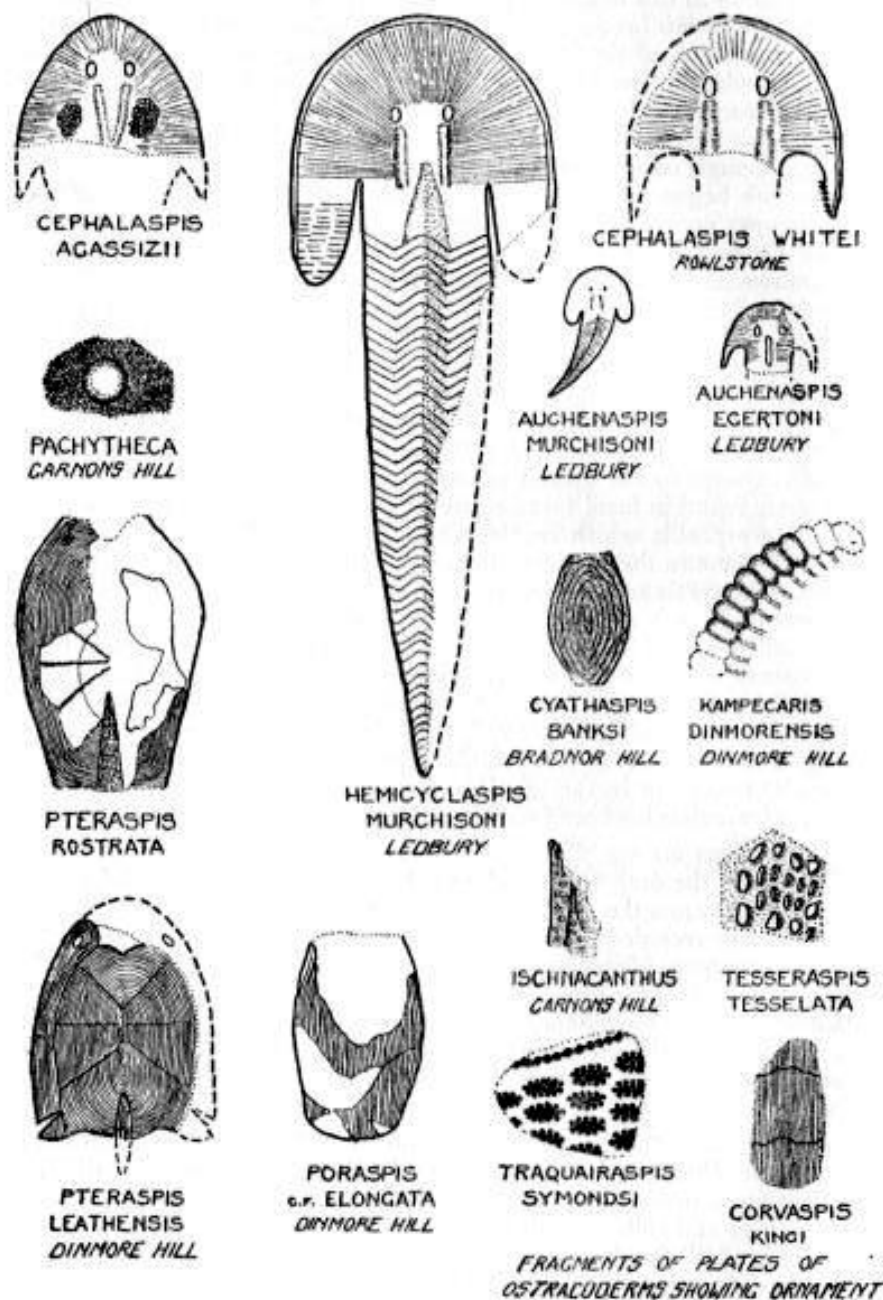


Fig. 5

Fownhope. The Wenlock Shales are exposed here also a little nearer Fownhope. The Wenlock Limestone can be examined in the great quarry at Dormington Wood above Stoke Edith. In the road up to Dormington Wood there are good exposures of the Upper Ludlow Shales, the Aymestry Limestone and the Lower Ludlow Shales. The Aymestry Limestone escarpment forms a very marked feature all round the dome.

## DEVONIAN AND CALEDONIAN MOUNTAIN BUILDING

While the older rocks already described make the foundation of Herefordshire, they come to the surface only in the few areas indicated. As a glance at figure 3 will show the Devonian rocks which follow cover a much wider area and indeed the surface rocks of the county are predominantly the Old Red Sandstone which is the form taken by the Devonian rocks in the Welsh Borderland. The dominant colour is a shade which gives freshly ploughed fields their characteristic dark red colour in these parts. The thickness of the whole system is estimated at nearly 4,000 feet. The lower half of this is chiefly very fine textured red marls and the upper half much coarser-textured sandstones and grits.

Part of Silurian and Devonian times is occupied by one of the great mountain building periods of geological history, to which the name Caledonian has been given. As a result of these earth movements the whole geography of Britain, northern Europe and western America was changed. The new chain of mountains, some thousands of miles in length, took many millions of years to build and extended from the Appalachians in America, through North Wales, the Isle of Man, and the northern half of Scotland to Scandinavia. At the American end the earth movements began at the end of Ordovician time, so much earlier than most of those affecting the British Isles that some geologists separate these as an independent mountain building period called the Taconian. The earth movements began early also at the Scandinavian end, but in Britain sedimentation went on at the end of the Ludlovian, and it is after this, in the earlier part of Devonian time, that most of the movements seem to have taken place. These earth movements affect Herefordshire only indirectly but that in a most important way for it remained an area of sedimentary accumulation. From the new mountains in Wales rivers washed the rock particles, worn away by erosion, and deposited them in great thickness in the estuaries of the rivers. Herefordshire is believed to have occupied through Devonian times the site of one of these. Currents seem to have been often strong so that sediments are apt to occur in lentils rather than in persistent bands. The sandstones show current bedding and sometimes great tracts in the estuary were exposed giving the opportunity for sun baking and the formation of sun cracks. There are some fine examples of these at the foot of Brobury Scar. The exact site of the coast line in Devonian time is not yet known but it was probably parallel to and a little west of the Church Stretton line. North-west of this was the land with the great range of the new Caledonian Mountains. Over Herefordshire and much of the neighbour-

ing counties of Shropshire, Brecon and Monmouth were the estuaries of the rivers draining the Caledonian mountains. Further south, over Devon and Cornwall, was the open sea on the bed of which the marine Devonian rocks of those counties were deposited. The rivers draining into the Herefordshire estuary, in addition to bringing their load of sediment, brought also fragments of ostracoderm fishes which now appear for the first time. These have recently been used by E. I. White to zone part of the succession. Before this W. Wickham King had produced a scheme of lithological zones based on rock types and related to the fossils only in a preliminary way. This was never completed for the higher beds. The succession with the zonal schemes so far as they go at present is as follows.

Major time divisions	Rock succession	Lithological zones after W. W. King	Fossil zones after E. I. White
Farlovian	Tintern Sandstone Quartz Conglomerate group.		
unconformity. Middle Old Red Sandstone absent.			
Breconian	Brownstones Senni Beds		<i>Rhinopteraspis dunensis</i>
Dittonian	Sandstones with cornstones and some marls	II <sub>1</sub> - II <sub>4</sub>	<i>Pteraspis crouchi</i> <i>Pteraspis leathensis</i>
Downtonian	Sandstones with some marls Psammosteus Limestone Group	I <sub>9</sub> - I <sub>10</sub> I <sub>8</sub>	<i>Traquairaspis symondsii</i> <i>Traquairaspis pococki</i>
	Red Marls Holdgate Sandstone Red Marls with thin sandstones	I <sub>5</sub> - I <sub>7</sub> I <sub>4</sub>	
	Grey Marls with Downton Castle sandstone & Temeside Shales	I <sub>2</sub> - I <sub>3</sub>	
	Ludlow Bone Bed	I <sub>1</sub>	

The dominant rock type in the Downtonian is a bright red marl. It is a dry crumbly mass of fine textured sediment, calcareous in composition, which weathers down to a red clay. The Downtonian Red Marls are over 1,000 feet thick and make much of the low ground of Herefordshire. There are however some variations in the rock type at various levels. At the base is a thin sandstone full of small needle-like spines—the Ludlow Bone Bed. It varies in thickness from an inch to a foot or so and seems to occur sometimes in more than one band. Above this is a series of buff sandstones—the Downton Castle Sandstone, and grey shales—the Temeside Shales. These together constitute the Grey Downtonian some 150 feet thick in places but of variable thickness and believed to be of doubtful persistence. About half way up the Downtonian Red Marls is a band of coarse grit, the Holdgate Sandstone, usually about twenty feet in thickness but this also is variable and of uncertain persistence. At the top of the marls is the Psammosteus Limestone Group. This is a group of rocks from 70 feet to 250 feet in thickness. It consists of sandstones and thin marls with a number of bands of limestone. One of these, usually referred to as the main limestone, is about twenty feet thick and associated with it are a number of thinner limestones two to three feet thick, occurring at varying level both above and below the main limestone. The limestone itself is a steel grey nodular limestone blotched with red angular patches. The red patches wear more easily than the greyish white rock between, and weathering produces a honeycomb effect which is quite characteristic of these limestones. They are believed to be secondary limestones, formed by tracts of the estuary becoming exposed to strong sun, water from the marls rich in lime being drawn up by capillarity to crystallize near the surface. The main limestone seems to be more persistent than the others though it is certainly of variable thickness. E. I. White has suggested that this group is not precisely the same age everywhere, i.e., it does not occur in the same zone everywhere, and recent work confirms that this is so. Above the Limestone Group the rest of the Downtonian consists of a series of rocks which vary much from one locality to another. Sandstones predominate but marls are also present in a variable amount. At Dinmore Hill there is hardly any marl above the limestone whereas at Garnons Hill there is a good deal. Another variation in the rocks at the top of the Downtonian is the presence of cornstones or fragmental limestones. There is usually one below the Limestone Group which is a calcareous pellet rock. Above the Limestone Group the cornstones consist of fragments of limestone cemented together with a hard sandy calcareous matrix. The fragments may be quite angular, giving the appearance of a breccia, or quite rounded, giving the appearance of a conglomerate. In this latter type rounded foreign pebbles of vein quartz may also occur. The fact that the cornstones above the limestone contain fragments of limestone, whereas that below is entirely a marl pellet rock without limestone fragments, suggests that the material of the higher cornstones came from the limestones below, and this opens up the possibility of contemporary earth movements exposing areas to erosion. Nothing is known at present of these movements in the Herefordshire area though they would clearly be outlying minor folds of the Caledonian mountain building.

The Dittonian rocks make the lower slopes of the Black Mountains. In the Hay area where the Downtonian is very thick the base of the Dittonian is about 1,100 feet O.D. They also make the capping of Bromyard Downs, Dinmore Hill and Garnons Hill. At Garnons Hill the base of the Dittonian is at about 650 feet O.D. and at Dinmore 500 feet. Future work may show that the Dittonian rocks cap also other hills such as Wormsley and Credenhill, though no detailed work has as yet been done in these areas. The Dittonian rocks, like the higher beds of the Downtonian, consist of sandstones and grits with bands of cornstone and sometimes even marls. The upward extent of the marls is very variable. In some localities they do not extend to the top of the Downtonian while in others marls occur quite high up in the Dittonian.

The Breconian contains the Brownstones above and the Senni Beds below. This twofold succession has been mapped in the Abergavenny area, but over the rest of the Black Mountains the distribution of these two groups has yet to be worked out. In Shropshire, near the base of the Breconian, is the Abdon Limestone, similar in nature to the far older Psammosteus Limestone. At the head of the Olchon valley in the Black Mountains at 1,750 O.D. is a limestone  $4\frac{1}{2}$  feet thick. When fresh it is almost black but weathers to a cream colour. About fifty feet above is another limestone only some six inches thick. It is grey blotched with red and very similar to the Psammoteus Limestone in appearance. These bands may well be the representatives of the Abdon Limestone in Herefordshire. The Brownstones make an escarpment in places as in the Ross area, where they are to be seen in the cliff-like exposure at the entrance to the town along the Hereford road. They are characterised by marked current bedding.

At the top of the Breconian is a great unconformity representing Middle Old Red Sandstone times. Rocks of this age, present in Scotland, are absent here. The area was uplifted and subject to erosion perhaps during a great length of time. Very little is known about these earth movements or the resulting changes in the geography, but that the uplift was very considerable is suggested by the fact that the basal part of the Farlovian is an extremely coarse conglomerate with large white quartz pebbles. These rocks make a more pronounced escarpment than do the Brownstones and give rise to the fringe of high hills flanking the Forest of Dean, e.g., Penyard Park, Purland Chase and Coppet Hill. Above the Quartz Conglomerate the other member of the Farlovian is the Tintern Sandstone, a buff-coloured soft sandstone similar to the Farlow Sandstone of Shropshire.

The fossils of the Devonian are very rare and hard to find compared with those of the preceding system. Fishes and land plants are the most important, and both of these appear for the first time in these rocks, they occur in thin bands of no great lateral extent. There is no easy method of search; the cornstones are perhaps the most likely places but fossils do occur in the micaceous sandstones and also in the grits.

Older work on the fishes was concentrated on the lower beds of the Downtonian, while more recent work has been focussed on the higher beds. From the lower part of the Downtonian in a railway cutting at

Ledbury between the station and the tunnel mouth the fossil fish *Hemicyclaspis murchisoni* has long been known (see figure 6). Here also has been recorded the fish *Auchenaspis ergertoni*. Among the fossil fishes from the higher beds of the Downtonian the little *Traquairaspis pococki*

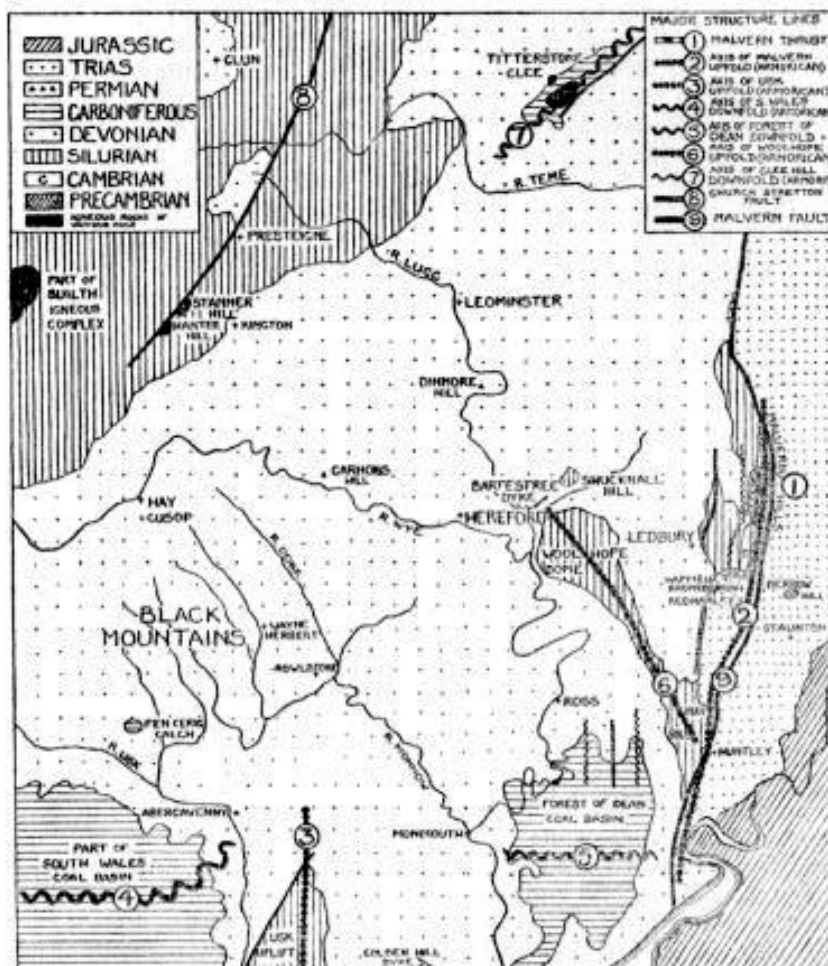


Fig. 6

Geological sketch map of the Herefordshire area showing the tectonics. The axes of the anticlines are shown by lines of dots, those of the synclines by wavy lines, the faults are shown in solid black lines, the Malvern thrust is a broken line. Note the arrow pointing to this from the index figure.



has been found at Cusop dingle and the much larger *Traquairaspis symondsi* in the same locality. This fish has also been found at Tedney Bank and Dinmore, Westhope and Garnons Hill. *Tesseraspis tessellata*, whose specific name refers to the arrangement of the plates on the body of the fish, is associated with *T. symondsi* at Garnons Hill and Tedney Bank and with *T. pococki* at Cusop.

The Dittonian rocks are characterised by various species of *Pteraspis*. This is a large group of fishes with many important species. In the lower beds occurs the little blunt-nosed *Pteraspis leathensis* (figure 6) recorded from Ammons Hill, Garnons Hill, Dinmore Hill and near Brecon. The equally small *P. crouchi* with its long pointed nose, and the much larger *P. rostrata* are found in the higher beds of the Dittonian. Several complete specimens of *P. rostrata* have been recorded from Wayne Herbert in the valley of the Esley brook in the Black Mountains. Although fragments of *Pteraspis* have been known for a hundred years this is the only British locality where a complete skeleton has been found. The same locality has also yielded the rare fish *Poraspis sericea*. At Castle Mattock the unique *Pteraspis jackana* was found and has only been recorded from this locality.

In the Senni beds at the base of the Breconian occurs *Rhinopteraspis dunensis* in Breconshire. This is one of the new zone fossils. In the topmost beds of the system, the Farlovian, the zone fossil *Bothriolepis* has been recorded from the Farlow Sandstone of Shropshire. Both the zones have yet to be established in Herefordshire.

The Devonian fossils so far mentioned have all been fishes. The other great group of fossils in these rocks is the plants. The fishes are believed to be freshwater fishes washed down from land streams in time of flood and judging from their fragmental remains the plants may well have been washed down in the same way. The classic locality for plants is a quarry in the Senni Beds at Llanover near Abergavenny. From there some dozen species have been obtained and described by W. N. Croft and W. H. Lang. *Drepanophycus spinaeformis* occurs here with its characteristic H-shaped branching stems. This plant had a very wide distribution in Devonian times from Britain to China. The leafless *Zosterophyllum llanoveranum* was a new species first found in this quarry. *Prototaxites* occurs here and also lower down the sequence in the Downtonian at Garnons Hill. *Nematothallus* occurs in the Downtonian at Garnons Hill and Dinmore Hill. *Cooksonia* has a very wide range occurring in the Downtonian at Garnons Hill, the Dittonian at Dinmore and the Breconian at Llanover. The lowest horizon with plant fossils is at the base of the Grey Downtonian at Perton near Stoke Edith. The site of an exposure in the Perton plant bed is shown in figure 5.

A new Myriapod, *Kampecaris dinmorensis* has recently been recorded from the base of the Dittonian at Dinmore. These millipedes, known previously only from the Old Red Sandstone of Scotland, are some of the earliest air breathing animals.

A fossil which is common in the Devonian rocks and very little understood is the little spherical *Pachytheca*. Usually a perfect sphere about four millimetres across it has been thought to be a seed, a free swimming

marine plant and an alga, but its precise nature is not really known. It occurs at all levels throughout the Downtonian and Dittonian and in places is quite prolific.

#### CARBONIFEROUS AND ARMORICAN EARTH MOVEMENTS

The Armorican Mountain Building was a great disturbance in the earth's crust and like the preceding Caledonian Movements it extended over a great length of time. The result was a giant chain of mountains from Brittany and Cornwall across Europe and Central Asia to the Far East. Most of Britain was a little north of the main line of the disturbance but the effects were nevertheless very considerable. The movements began early in Carboniferous time and increased in intensity towards the end of the period and they continued into Permian time. The initial movement in this country was an uplift across the Midlands, accompanied by a downwarping on either side. The two troughs thus created were gradually encroached by a warm clear sea in which was formed the Carboniferous Limestone. The sea was warm enough and clear enough for corals to build reefs and these form the chief fossils. They have been used to zone this formation. It is divided into seven zones denoted in ascending order by the letters K, Z, C<sub>1</sub>, C<sub>2</sub>, S<sub>1</sub>, S<sub>2</sub> and D. These are generally the initial letters of the zone fossils. In this Herefordshire area the Carboniferous rocks are some of the younger rocks of the region and are only preserved in the great downfolds or synclines. There are two of these in the south making the great coal basins of South Wales and the Forest of Dean. In the north is a smaller syncline at Clee Hill where the Carboniferous rocks are also preserved. These can be seen in the sketch map in figure 3. Of these areas, all adjacent to the county, only the tip of the Forest of Dean syncline is actually within the county boundary. Below is the succession of the Carboniferous rocks of the Forest of Dean area with that of the Clee Hill area beside for comparison.

Time divisions	Forest of Dean	Fossil zones	Clee Hill
Westphalian	Productive Coal Measures		Productive Coal Measures with Dhustone
Namurian	Upper Drybrook Sandstone		
		D ?	
	Drybrook Limestone	S <sub>2</sub>	
	Lower Drybrook Sandstone	S <sub>1</sub>	
	Whitehead Limestone	C <sub>2</sub>	
	Crease Limestone	C <sub>1</sub>	
	Dolomitic Limestone	Z	
	Lower Limestone Shales		
	Crinoidal Limestone	K	
Dinantian			Cornbrook Sandstone
			Carboniferous Limestone

The difference between these two successions calls for some explanation. It will be seen that in the Clee Hill area only the two lowest zones of the limestone are present, whereas in the Forest of Dean all are present except the highest. F. H. Edmunds and K. P. Oakley have suggested that the limestone in both areas was formed on the bed of the southern sea and that the shore-line of this sea moved gradually southwards all through Dinantian time. This means that the first two zones of the Carboniferous Limestone were deposited over the whole of the Herefordshire area and that succeeding zones were deposited only on the seaward side of the southerly moving shore-line. It will be seen that the Carboniferous Limestone is followed in each area by a sandstone. This is perhaps representative of the Millstone Grit in these parts, though Millstone Grit conditions began much earlier here than in the north of England, where this rock is most fully developed. The sandstone is a littoral and estuarine deposit following a retreating shore-line. The Cornbrook Sandstone of the Clee area is a coarse hard grit with roughly rounded quartz pebbles. The whole rock is pinkish white in colour. The Drybrook Sandstone of the Forest of Dean area is a light yellow fine-textured soft sandstone with little cementing material. The retreat of the shore-line southwards was not apparently a steady process, for it will be seen that the Millstone Grit conditions affect the Forest of Dean area twice with a return to Carboniferous Limestone conditions in between. We may imagine then during Dinantian and Namurian times both Carboniferous Limestone and a covering of grits of the Cornbrook-Drybrook type being laid over probably the whole Herefordshire area and covering the older Devonian rocks.

The second stage in the Armorican earth movements was a series of north to south uplifts, including in this area the Malvern range and the Usk anticline. The axes of these folds are shown in figure 3. These uplifts created projecting promontories stretching out in a southerly direction into the Carboniferous sea. In the bays between there were formed during Westphalian times a series of rocks of great economic importance, the Productive Coal Measures. These consist of a great thickness of grey sandstone with comparatively thin seams of coal. The vegetation of Westphalian times was more luxuriant than there ever had been on the earth before. The sediment brought down by the rivers into the bays filled them to form low lying deltas which became richly forested. L. J. Wills has described the formation of coal seams in basins whose floors were gradually subsiding with intermittent periods of standstill, and the reader should refer to the *Palaeogeography of the Midlands* for more information about this most interesting geological process. The different succession of the coal seams in the three adjacent coalfields of South Wales, the Forest of Dean and Bristol suggests that the uplift of the promontories took place quite early in Westphalian times, leaving deposition to take place in three different and independent basins, and also that the whole area was unstable with the oscillations of the basin floors rather different in each area. The thinning of the Coal Measures towards the Usk anticline would also confirm that uplift of that anticline began quite early in Westphalian times. In the Forest of Dean area the

Coal Measures are laid down on the eroded surface of the rocks that precede them, and a fairly long interval of time may elapse between the uplift of the folds flanking the basin and the laying down of the Coal Measures within it. These are later in age than much of the Coal Measures in the other two basins. Besides the southward projecting promontories there seems to have been at least one long inlet in the Westphalian coast-line in this area, for Coal Measures form a narrow strip extending from the Forest of Dean west of the Malvern axis nearly to Ledbury, and there are sporadic deposits of Coal Measures even north of that in the Abberley Hills. This inlet must have extended so far north as to join or nearly join the two great coal swamp areas of Britain thus cutting in two the ridge of land that crossed the Midlands all through Carboniferous time.

Both the Carboniferous Limestone and the productive Coal Measures are very fossiliferous, the former giving crinoids, brachiopods, and corals in abundance, and for the latter the tips near the coal mines in the Forest of Dean are a rich hunting ground for fossil plants. There are to be found leaf impressions and even whole trunks of plants like *Calamites*, *Lepidodendron* and several species of *Sigillaria*.

The red Barren Upper Coal Measures of the Midlands are dominantly clays but in South Wales the dominant rock is a grit, the Pennant Sandstone. This is interesting, because not only do Millstone Grit conditions begin here much earlier than elsewhere but they also last very much longer. The materials for this and the sandstone that makes the greater part of the Productive Coal Measures must have come from the erosion of neighbouring lands and it seems reasonable to suggest that much of the Cornbrook Sandstone, and possibly even some of the Carboniferous Limestone which was laid down in Herefordshire in the early part of Carboniferous times, was worn away in the later part of the same period.

The third stage of the Armorican earth movements, the one which was the most violent, produced in this area a series of east to west folds influenced to a large extent by the previous north to south folds which seem to have resisted the new movements. Thus South Wales was downfolded into a great east to west syncline and the Forest of Dean into a round basin. In the latter case there was not room for anything else between the resistant Usk and Malvern axes. In the Woolhope Dome we have perhaps an incipient east to west anticlinal fold slewed round to a north-west to south-east direction by the influence of the resistant Malvern axis. This uplift is not as simple as it was formerly believed to be. The detailed mapping of the Petalocrinus Limestone in the central area of the Woolhope Dome by R. W. Pocock has shown that this area is much affected by cross faults and no doubt when the outer escarpments are mapped in similar detail similar complications will be found there. The trends of these folds are shown in figure 3.

The final stage of the Armorican movements is one of igneous intrusion and volcanic activity. At the Titterstone Clee and at the Brown Clee within the Coal Measures is a layer of dolerite or basalt some 150 feet thick, variously interpreted as an intrusive sill of igneous rock forced in between the bedding planes, or a lava flow from a contemporary volcano.



This stone, known locally as the Dhustone, is extensively quarried for road metal and there is a large crushing plant at the Titterstone Clee. Two smaller intrusions of the dyke type are to be seen at Bartestree and Golden Hill. At Bartestree the dyke can be seen in the quarry behind the convent. The igneous rock which makes the dyke, and also the zone of altered rock on either side, are well exposed in this quarry. The dyke rock itself is a dark grey dolerite. At Golden Hill in Monmouthshire the intrusion is also a dyke, but the rock is a monchiquite exhibiting very large crystals of the minerals augite, biotite and olivine up to an inch or so in size. It is very unusual to find such large crystals in an intrusion of the dyke type. There are also pebbles of sandstone incorporated in the intrusive rock as if the intrusion took place with great violence, tearing fragments from the sides which became swallowed in the molten rock.

#### PERMIAN AND TRIAS

When the Armorican earth movements had died down we have to visualise an upland area surrounded by high mountains. The Malvern Hills, the Woolhope Dome, the Forest of Dean and South Wales, still very largely upland areas, are but mere stumps of the great mountains which covered this area in Permian and Triassic time. On the slopes of these mountains and in the basins between were deposited red Permian-Triassic rocks of the type now to be seen in the Central Midlands, but apart from a very few fragments, these strata have been worn away from this region. Both south and north of the Malvern Hills are a few scattered areas of a dark red coarse fragmental rock, the Haffield Breccia, which is believed to be of Permian age. It is well seen at Haffield itself, and consists of angular fragments of the various rocks still encountered at Malvern. The rock fragments are highly wind-polished and the whole series is poorly but quite definitely stratified. Such rocks were formed in high mountains undergoing desert erosion, with considerable differences between day and night temperature. This split up the rocks into scree and very occasional storms washed the loose material in great quantities down the mountain sides and deposited them on the valley floors. A rugged, mountainous, wind-swept desert is the picture to visualise of Permian geography.

Most of the known deposits of Triassic age were formed in two great basins, one occupying the Central Midland counties and the other Devonshire. As Triassic time went on the successive beds became more and more extensive, the Keuper Marl, the highest division of the system, being the most extensive of all: indeed in Keuper times the two basins were joined together. There is some evidence of this in the eastern fringe of our area. The bright red Upper Bunter Sandstone which L. J. Wills has renamed the Moulding Sand Group is seen at Bromsberrow, the Keuper Sandstone or Bromsgrove Sandstone is seen at Redmarley and the Keuper Marl makes a narrow strip at Staunton, Gloucestershire, where the higher beds of this formation, the Arden Sandstone and the Tea Green Marls, can be seen. How far similar deposits were formed in smaller basins among the mountains of Herefordshire cannot be known

with certainty, but it seems likely that they were. The Moulding Sand Group is a series of sandstones very soft and very red. The Bromsgrove Sandstone of the Redmarley area is a rock offering great variety. It may be very coarse or very fine in texture: it may be very soft or it may be hard. The coarse specimens show roughly rounded grains, some of which are wind-polished. Some bands contain pebbles of quartz and also pebbles of a dark igneous rock whose place of origin is not yet known. The cement is calcareous. The Arden Sandstone is a pale greenish-white flaggy sandstone, much used as a building stone in the areas where it is found.

One other point should be mentioned. In the lower part of the Bunter there occurs in parts of the Midlands that remarkable formation the Bunter Pebble Beds. In the Bridgnorth area the pebbles that make these beds consist almost entirely of Carboniferous Limestone, and L. J. Wills has suggested that these pebbles are the load from a river draining north through Herefordshire in early Triassic time, and that much of the Carboniferous Limestone which once covered this area was worn away by erosion in that period.

#### JURASSIC, CRETACEOUS, AND TERTIARY

There are no rocks, apart from the glacial drifts, in Herefordshire later than the Permian. This means we have no direct evidence for the history of this area in the more recent ages of geological time. These periods can do little more than pose questions to which we know little or nothing of the answer. The Jurassic rocks were deposited like the Silurian rocks on the bed of a shelf sea. This in itself brings the first unanswered question. How far was the great mountain area of the Permian completely worn down through Triassic time to permit the invasion of the Jurassic sea? We do not know the answer to this. Jurassic rocks occur at Berrow only  $2\frac{1}{2}$  miles east of the county boundary. They occur also at Prees in Shropshire and they occur sporadically along the coast of South Wales where the Lias becomes increasingly pebbly as we go westwards, suggesting the shore-line to be getting nearer. Both sea and shore-line were evidently in the vicinity of Herefordshire in Jurassic times. The shore-line may have crossed the area, but of its exact position we know nothing, nor how much of the Jurassic succession, if indeed any, was laid down here.

The fact that so many rivers exhibit a north-west to south-east direction suggested to A. C. Ramsay as long ago as 1878 their inauguration on an uplifted plain of marine erosion, which he believed to be the bed of the Chalk sea, a very extensive deposit formed in Upper Cretaceous time. Many of the Herefordshire rivers and those of adjoining areas fit into this pattern. This rather indirect evidence suggests that the Chalk sea in Cretaceous time definitely did cover Herefordshire. The uplift of the bed of the Chalk sea would have been a gradual process and we may imagine the Herefordshire part uplifted above sea-level and a river system beginning to develop while chalk was still being formed in the

sea further to the south and east. Thus the thickness of the chalk covering this area may not have been great; indeed it may well have been quite thin, and this may explain why no trace of it is to be seen to-day.

The cycle of erosion which began towards the end of Cretaceous time is still going on to-day. Little by little the consequent streams inaugurated then, together with their subsequent and obsequent tributaries have worn away the rocks and carried their load of suspended material down to the sea. The Cretaceous and such Jurassic rocks as may have been formed here have long ago been stripped from the Herefordshire landscape. The Permian-Trias land surface which would then have been uncovered has also gone and so have any Carboniferous rocks that were left after the denudation of Carboniferous, Permian and Triassic times, except where they have been deeply downfolded, as for example in the Forest of Dean, and one isolated little outlier, the Pen-cerig-calth in the Black Mountains. Erosion has to-day stripped the area as far down as the Devonian rocks over most of the county and in the upfolds even the Silurian rocks are now exposed and in one or two places the Precambrian. Over much of the area the river system inaugurated on the Cretaceous cover has become successfully superimposed on the older rocks so that the old north-west to south-east pattern is still preserved. Where harder rocks have been encountered, especially if they have a marked structure, a process of structural adjustment has gradually altered the stream courses and the old pattern has been quite obliterated. A great deal of work still remains to be done on this branch of the geology of the area, but two points may perhaps be mentioned. The number of streams in the Black Mountain area flowing north to south calls for some comment. The writer suggested some years ago (1936) that these were caused by a tilt to the south, giving the north bank tributaries the advantage over the south bank tributaries and even over the main streams. He also suggested associating this with the formation of the Bristol Channel, which O. T. Jones has shown to be a syncline folded in Miocene times, indeed part of the Alpine mountain building. The main disturbance in these earth movements was along the shores of the Mediterranean and too far away greatly to affect Britain except for a few gentle flexures.

The other point which calls for notice is the extreme youthfulness of the river Wye below Monmouth where the steep wooded gorge with its incised meanders makes one of the most beautiful pieces of river scenery anywhere in Britain. This rejuvenation can only have been caused by a considerable uplift of the area in which this part of the Wye flows. It clearly post-dates the north to south stream which, before uplift took place, had time to make for itself a wide valley with meanders. It would not appear that this final uplift could have taken place before late Pliocene or even Pleistocene time.

Before closing this chapter let us leave the rivers and their valleys, and consider briefly the plants that flourished in the Herefordshire landscape from the end of Cretaceous time onwards. There is no direct evidence, for the area was undergoing erosion during the whole of Tertiary time and no deposits which might have contained fossils were formed. We must remember, however, that while erosion was going on in one area

deposition of sediments was taking place elsewhere. From the Tertiary rocks of southern and eastern England we learn that the great group of deciduous trees, including the birch, oak and beech, existed throughout the period. Indeed they had existed from the beginning of Cretaceous time. Coniferous trees had existed from long before that, from the Permian. It is perhaps of interest also to note that most of the bird families we know to-day existed from Eocene time. It may well be then that all through this latest erosion cycle this area was clothed with deciduous woodland, consisting of the trees with which we are quite familiar, and perhaps the higher parts with coniferous forest. As Pliocene time drew to its close the climate became appreciably colder, heralding the advent of the great glaciations of Pleistocene time which form the subject of the next chapter.



## The Wye Glacier

By THE REV. H. E. GRINDLEY, M.A., F.G.S.

### INTRODUCTION

**A**MONG earlier geologists Sir Roderick Murchison, *The Silurian System*, 1839, T. Curley, *Woolhope Transactions*, 1866, *Q.J.G.S.*, XIX, 1863, and W. S. Symonds, *Records of the Rocks, Old Stones, etc.*, have written on the Herefordshire "Drifts". Many other geologists have included the subject in their survey of neighbouring regions. L. Richardson has given many of the references in his *Outline of the Geology of Herefordshire* (*Woolhope Transactions*, 1905), and H. Cecil Moore has summarised the statements of earlier observers in *Woolhope Transactions*, vol. 1902-1904, p. 330. But T. S. Aldis may be regarded as the pioneer in applying recent theories to the evidence of ice action in the County (*Woolhope Transactions*, vol. 1902-1904).

A more detailed investigation has been made by A. R. Dwerryhouse and A. A. Miller and the results published in a valuable paper *The Glaciation of Clun Forest, Radnor Forest, and some adjoining districts* (*Q.J.G.S.*, vol. LXXXVI, part 1, 1930). The writer has made use of this paper to supplement his own observations made at broken periods from 1905-1926.

### HAY TO STRETTON SUGWAS

The course of the glacier that overspread the valleys of the Wye, Lugg, and Arrow, and approached the Malvern Hills, can be traced by the deposits of boulder clay, gravel and sand, including in places Silurian fossils and erratics derived from the escarpments to the north and west of the county and even from further westwards.

A. R. Dwerryhouse and A. A. Miller consider that two ice-streams converged, the one directly from the west, the other from the north-west; the latter carrying with it the distinctive gabbro of Hanter Hill near Old Radnor. The feeding ground of these glaciers lay to the west among the mountains of Wales.

Although chronologically the survey of the glaciated area should begin with the furthest extension of the ice to the eastern part of the county, it may be more convenient to trace the deposits *down* the course of the rivers from west to east, *i.e.*, to begin with the youngest drift which marks the final retreat of the ice to the western border.

The survey will then start with the section of the Wye valley that turns away from the base of the Black Mountain escarpment in the neighbourhood of Glasbury and follows a north-easterly course to Whitney, along what is probably a former "subsequent" valley, *i.e.*, a course along the prevailing strike of the strata. A. R. Dwerryhouse and A. A. Miller observe that this escarpment rises in two steps marked by cornstone

bands. The lower step up to 1,200 feet O.D. is about a mile wide and is heavily drift covered. This same drift, boulder clay, sand and gravel, occurs along the valley past Hay. Above Clyro on the ascent to Plas Warren is a good exposure where a stream cuts through the drift to the solid rock.

The ice overtopped Merbach Hill, 1,045 feet O.D. On the east side in a quarry at 900 feet O.D. a bed of reddish drift 9 feet thick, containing many rounded and ice-scratched pebbles, overlies the sandstone. A specimen of *Rhynchonella nucula*, a Ludlow fossil, was found in this clay. This fossil has also been found at many other sites.

Drift in patches covers the lower slopes of Merbach and the fields around Bredwardine. It is of no great thickness, the underlying rock often being exposed. On the right bank of the Wye above Old Court Farm is a bluff about 60 feet high of clayey sand merging into clay at the base and containing many striated stones. A little lower down below summer level of the river there occurs an interesting bed of grey clay which will be described later. Above Bredwardine Bridge the river flows over solid rock.

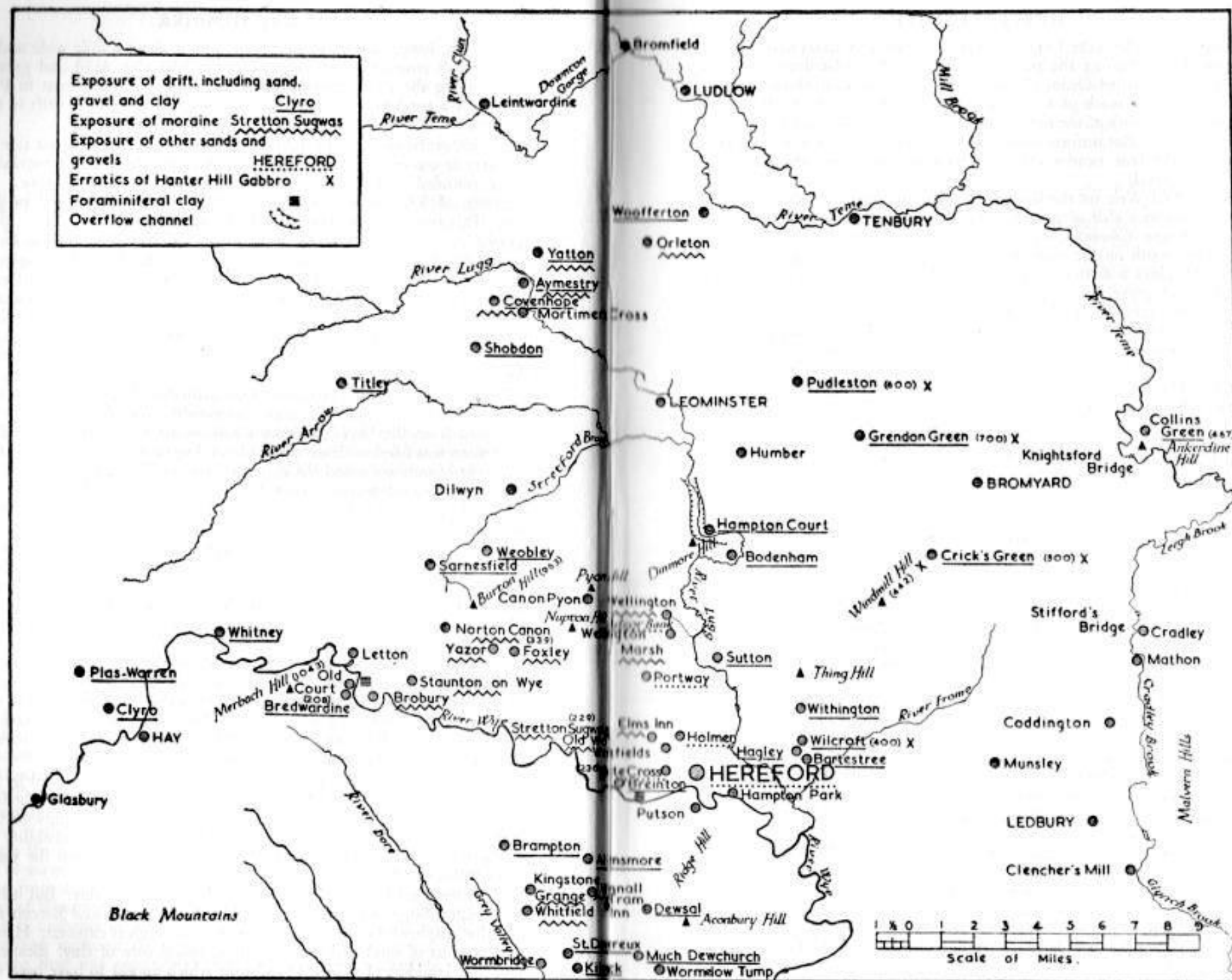
From Merbach north-eastwards beyond the low lying land a marked depression can be observed past Sarnesfield, Weobley and Dilwyn, separated from the Wye Valley by a narrow neck at Sarnesfield. This depression was filled with ice which abutted against Burton Hill, 963 feet O.D. R. Murchison noted the drift deposits on Sarnesfield Hill. At an earlier stage this depression, now drained by the Stretford Brook north-eastwards, probably held a stream flowing in an opposite direction, *i.e.*, southwards to join the Wye.

Following the course of the Wye down stream, as pointed out by T. S. Aldis, evidences of a true terminal moraine are to be met with in the ridge across the valley at Oaker Hill, Staunton-on-Wye and Norton Canon. Here transported boulders are widely scattered over the surface. This moraine marks a still-stand in the retreat of the ice westwards. It turned the flat land up stream into a lake around Letton.

Earlier in its advance eastwards the glacier left lateral moraines on the hillsides. Traces are to be found carrying Silurian fossils at Yazor and Foxley at a height of 400 feet O.D. On the south-west side of the valley sands and gravels occur in many places, *e.g.*, at Great Brampton 315 feet O.D. and Allensmore 340 feet O.D., along the ridge that separates the Wye from the basin of the Monnow.

The next and earlier stage of the retreat westwards is marked by the great terminal moraine which stretches from Three Elms Hill at the fork of the Burghill and Canon Pyon roads, through Stretton Sugwas, Old Weir, Kingstone Grange to Whitfield, having in all probability its northern end against Dinmore Hill and its southern against the slopes above Whitfield Park.

At Three Elms ice-scratched stones are bedded in the clay. But it is at the Stretton Sugwas gravel pit alongside the Hereford and Brecon railway that a splendid cross section about 100 feet high is exposed. Here is a great mass of sand and gravel with a conical core of clay. Scattered about are boulders of polished sandstone which appear to have been em-



GLACIATION OF HEREFORDSHIRE

bedded in the clay—the largest observed at one visit measured 5ft.6 by 2ft. by 1ft.7. Among the pebbles J. Pringle of the Geological Survey identified a silicified Ordovician shale from the far west, the typical so-called chert. A tooth of the woolly rhinoceros, *R. tichorhinus*, and a fragment of a tooth of the mammoth, *Elephas antiquus*, have been found in this quarry. But unfortunately the horizon of the finds was not noted. A pit in the lane nearby gives a lateral section—fine current bedded sand and gravel.

At the Old Weir on the line of the same moraine the Wye has cut a channel across a cliff of gravel and clay containing Silurian rocks with fossils (*Atrypa*, *Chonetes*, etc.), and large boulders often ice-scratched.

Further south on the same line a pit at Kingstone Grange about 400 feet O.D. gives a section of sands, gravels and clays, with boulders up to 1 foot. A gravel pit at the Winnals near Tram Inn Station shews the same clayey gravels with boulders.

The moraine probably dies out about Whitfield. A gravel pit in the Park at about 400 feet O.D. yielded a highly fossiliferous block of Ludlow rock, no striated stones, but many boulders up to 1 foot in the clayey gravel. The average width of this great terminal moraine was probably three miles at the least.

As the Wye Glacier retreated upstream towards Bredwardine it left behind patches of clay and gravel on the valley floor holding up ponds and lakes. Through these the Wye meandered in great loops, carving its way it may be here and there down to its pre-glacial channel.

#### HEREFORD

Underlying the City of Hereford is a great variety of deposits, alluvium, lacustrine beds, peat, marls and gravel. T. Curley estimated the area of gravel at 900 acres. On the western approach at the junction of the Burghill and Hay roads near Whitecross workmen were engaged in 1905 excavating a trench 11ft.6 deep for sewerage. The section shewed coarse red marl overlying a bed of grey sandstone flags, according to the foreman about 4 feet thick, followed by good gravel.

In the *Woolhope Transactions* 1902-4 there is a paper by the late Dr. H. Cecil Moore giving many interesting details of excavations in the City. One of these, in Widemarsh, exposed red clay, peat and marl below the alluvium. In another excavation T. Curley reported brick earth, peat and red marl, the last yielding recent land and freshwater shells—*Planorbis*, *Helix*, *Anodon* and *Unio*. In another excavation through red clay the underlying peat yielded remains of ox, horse and deer.

In 1906 when the foundations for the Infant School at Holmer were being dug, the section shewed—soil 10 in., peat 3ft.6, grey clay 3ft.4, and at base fine red calcareous gravel. No striated stones were observed. At Westfields the writer was informed that wells had to be sunk 30 feet through "red loamy soil" before water was reached. But at Holmer work could not proceed below 5 feet without constant bailing owing to the flow of water.

No peat is to be found in the large gravel pits at the cattle market and the County Council Offices in Bath Street (formerly the Working Boys' Home), the gravel beginning quite near the surface. In the streets of Hereford shallow excavations quickly reach the gravel.

On the right bank of the Wye below the bridge, in the riverside meadows towards Putson, sewerage works were in progress in 1923. A deep trench had been dug which revealed:—

greyish loam	4ft. 6in.
coarse red gravel	
(described as "ballast")	9ft. 6in.
red marl, bottom not reached	9ft. 6in.

Water was abundant at 18 feet from the surface. Downstream the trench curved towards the river and grey clay took the place of the red marl. The gravel was coarser than that in the streets of Hereford and comprised Welsh grits, Ludlow and Old Red rocks, many specimens were polished but with no evident striations. The presence of erratics from the west suggests detritus from the Sugwas moraine.

Mammalian remains from the City area have already been mentioned. To these may be added tusks of wild boar and deer horns recorded by the late Alfred Watkins from the King's Ditch on the site of an extension to the Public Library (*Woolhope Transactions* 1911). In a later paper the same contributor traces the King's Ditch down to the river between the bridge and the palace gardens. A deep hole in the river bed at this spot may have some connection with the ditch. An excavation for underpinning a house at the corner of Bridge Street and Gwynne Street in 1912 by the depth of the made ground suggests a closer connection. The section was:—

Made ground	2ft. 6in.
Alluvium	5ft. 0in.
Plastic clay base about low	
summer level of Wye	10ft. 9in.
Sandy clay with bones <sup>1</sup> depth not proved	

#### THE TEME AND LUGG VALLEYS

In tracing the northern branch of the Wye glacier the same method will be followed as before, *i.e.*, starting with the *later* stage in the upper valley of the Arrow, a tributary of the Lugg, the course will be followed *downstream* to its furthest extension eastward.

It has been mentioned that the two branches of the glacier probably converged over the depression around Sarnesfield and Weobley. Together they covered the intervening lowland now drained by the Stretford brook and small tributaries of the Lugg, passing eastward by Dinmore hill.

The northern branch descending eastwards left extensive deposits of boulder clay about Titley and Shobdon, where lakes and ponds rest on

<sup>1</sup>Bones of Red Deer, *Cervus elephas*, a phalanx, part of a metatarsus, a rib, and part of a horn, and remains of trees, probably alders.



its surface. A strong tongue blocked the entrance to the Covenhope valley.

But one of the most curious features of the area is to be found in the relations of the rivers Teme and Lugg in the neighbourhood of Wigmore and Aymestrey. R. Murchison describes the highly faulted structure of the region and attributes to this the remarkable course of the Teme across Leintwardine bottoms and Wigmore "Lake" to plunge through the Downton gorge. He states that a flat bottomed valley lies along the axis of a 'valley of elevation' similar to that at Woolhope. The centre of the dome, weakened by stretching, has been denuded and the rocks on the flanks fractured, the detritus being scattered over the surrounding hillsides.

The Teme from the west and the Clun from the north meet at Leintwardine and flow south half-way to Wigmore. Here the river takes a sharp turn north-eastward through a gap on the left bank, passes through the Downton gorge and emerges in the central valley near Bromfield.

Two distinct phases of glaciation have contributed to this diversion. A. A. Miller, who revisited the district in 1948, has sent the writer the following observations on the probable sequence of events:—

"I regard the boulder clay that is found against the western slopes at Aymestrey [up to 500 feet O.D.] as belonging to a period of maximum development of Clun valley ice at a time when the Wigmore basin was filled from the west and north-west. This ice retreated, or melted away before the Wye "piedmont" glacier had reached its full extension, some water escaping through Covenhope gap. This gap was closed by the Wye glacier (on south-east of Aymestrey limestone hills). The further advance of the Wye glacier closed the Mortimer's Cross outlet, ponding up the rivers (melt water) from the north to form Wigmore lake. The waters of the lake found a fresh outlet to the north-east by way of Downton, cutting down the Downton gorge. The lake floor deposits, overlying the earlier boulder clay (25 feet in the well section below), might be the bluish clay, *etc.* (4 feet in the same section).

"A lobe of ice from the lateral moraine of the Wye glacier thrust into the Mortimer's Cross gap. The moraine debris was re-sorted and deposited as a delta at Aymestrey and Yatton. The delta beds, dipping northwards, are very conspicuous in the huge new gravel pit at Yatton. A lot of this is sandy but most is gravel (40 feet in the well section)."

This pit was small in the writer's day<sup>1</sup>, for local use only.

A well boring at Aymestrey Vicarage in 1913 displayed a section of some interest:—

Soil	...	...	...	...	...	...	2 ft. 0 in.
Subsoil, soil and gravel	...	...	...	...	...	...	3 ft. 0 in.
Gravel	...	...	...	...	...	...	40 ft. 0 in.
Clay bluish with some gravel	...	...	...	...	...	...	4 ft. 0 in.
Boulder clay <sup>2</sup> , grey clay with a reddish tinge, plastic and sandy	...	...	...	...	...	...	25 ft. 0 in.

<sup>1</sup>*i.e.* Anticline.

<sup>2</sup>*i.e.* before 1925.

Preglacial? gravel, distinctive small sized, slate coloured, abundant water	...	...	...	...	1 ft. 0 in.
Grey clay and gravel-proofed	...	...	...	...	1 ft. 6 in.
Total					76 ft. 6 in.

The depth of the superficial deposits is remarkable because at the churchyard gate, a little to the south, solid limestone is exposed at road level. It seems possible that the boring was made in a filled-in crack in the limestone, a suggestion that agrees with R. Murchison's observations on the fractured structure of the area.

#### FURTHER COURSE OF THE TEME

The Teme flowing southward from Bromfield to Ludlow has yet again been diverted eastward by morainic deposits around Orleton. (The northern erratics recorded from Ludlow have probably been carried through the Onibury gorge or down the valley of the Corve and do not belong to the Herefordshire series.) The ice of the Orleton moraine and the gravels at Woofferton erected a barrier which has turned the river eastward from its earlier course southwards towards Leominster. Its later course, till it emerges on the Worcestershire plain at Knightsford bridge, forms a remarkable story of stream capture and reversed drainage. It need only be noted here that in places the descent of the river does not accord with the outline of the flanking hillsides, and such tributaries as the Rea have to make an awkward turn backward to join the main stream. A. R. Derryhouse and A. A. Miller have provided the proofs of this story.

#### THE MIDDLE LUGG AND THE BROMYARD REGION

The writer is indebted to the same two authors for the record of the glacial deposits from Mortimer's Cross to the neighbourhood of Bromyard, as much of the area had not been visited by him. From Mortimer's Cross eastward the deposits are largely of sand and gravel. The clearest evidence of the eastward extension of the glacier is afforded by erratics of Hanter hill gabbro originating near Old Radnor. These erratics are found at 700 feet O.D. at Grendon Green, 600 feet O.D. at Pudleston, and 500 feet O.D. at Cricks Green, marking the presence of drift patches which extend in a semi-circle from Orleton to Wilcroft and Hereford. As the ice retreated westward the ponded waters of the Lugg and Arrow cut an overflow channel round the eastern end of Dinmore Hill by way of Hampton Court and Bodenham and joined the waters of the Lower Lugg. An earlier course may have been by the Humber valley.

The presence of Hanter hill gabbro and other erratics far to the east of the valley of the lower Lugg calls for a revision of the writer's previously expressed opinion as to the origin of the drift and gravels in the pits at Sutton, Thinghill, Hagley, Bartestree and Withington. Boulders

of Ludlow rock, but no striated stones, occur in these pits. These gravels may be considered as outwash from the ice sheet that covered the hills towards Bromyard. It is noticeable that the gravels become less coarse as the pits approach the Lugg. Possibly the bearing beds of the Hampton Park brickyard derive from the same source. The easternmost exposure of the typical western gravels was observed by the writer in a quarry in Tinkers Copse, by the left side of the road from Martley to Knightsford bridge near Collins Green. The road level here is marked as 476 feet O.D. The drift lies against an outcrop of Upper Silurian rocks.

#### "MIDLAND DRIFT"

In the east of the county towards the Malvern Hills the boundary of the drift attributable to the Wye Glacier is obscured by the presence of deposits connected with what may be called the "Midland" Drift of Worcestershire. Bunter pebbles with the characteristic bruise are scattered over the fields around Mathon and Coddington. A well sunk at Golden Cross, Coddington, in 1920, exhibited the following section:—

Humus	...	...	...	...	...	1 ft.
Yellow sandy clay	...	...	...	...	...	3 ft.
Boulder clay, striated pebbles and fragments of carbonaceous material (coal?)	...	...	...	...	...	27 ft.
Finely laminated clay, red sand, water bearing, bottom not reached	...	...	...	...	...	15 ft.

Two sandpits at Mathon display sections of this Midland Drift. The section at Mr. Jones' pit in 1922 read as follows:

Gravel with sand and clayey bands, <i>Gryphaea incurva</i> from the Lower Lias occurs in this bed	...	...	...	6 ft.
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In the adjoining (Miss Hodges') pit: Sand with some gravel and clayey layers, black streaks, throws out water 20 ft.

This latter bed is said to go 6 ft. deeper and pass into "loose rough stuff". Large pieces of *rolled* Malvern rocks occur in this basic portion. The general colour is reddish and the section somewhat current bedded.

Above Miss Hodges' pit several archaeologists have recorded a Bronze Age urnfield. Brigadier General Hamilton has described some of the finds in the *Woolhope Trans.*, 1938, p. 120.

A gravel pit on the Cradley glebe at about the same level 300 ft. O.D. shewed yellow gravel with many quartz pebbles and yielded two *Gryphaea incurva*. There is a pit of similar red sand at the top of the hill on the Worcester road east of Stifford's bridge, also on the same level.

The section at Clencher's mill has often been described. It presents a confused mass of rubble, red and yellow sand, clay and gravel, suggesting outwash from the neighbouring slopes.

J. M. Gray of Cheltenham has treated of the superficial deposits of the west flank of the Malverns in a contribution to the *Proc. of the Birmingham Nat. Hist. and Phil. Society* (1914). He propounds a theory of a

river flowing southwards along the western flank, possibly a former course of the river Teme from Knightsford bridge. The Cradley brook would then represent a case of reversed drainage, as its course is now northwards to the Teme. The Glynch brook which now flows southward would then represent the course of the former larger river. It is difficult to trace any well marked depression to account for this course. But the proposition merits close attention. The present watershed is marked by Chance's Pitch, a spur of the Herefordshire Beacon.

Fluvial rather than direct glacial action seems to have played the leading part in the formation of these deposits.

#### FROME VALLEY

In contrast to the drift covered areas of the county there was a complete absence of drift in a well sunk in 1926 at Gazerdine House near Munsley from ground level at approximately 250 ft. O.D. Red marl with a bed of green micaceous sandstone at 8 ft. extended to a depth of 59 ft. 6 in. Drilling for another 20 ft. reached red sandstone with water.

#### CONCLUSION

This general outline of the traces of glacial action has been confined to a study of the northern and central parts of the county. The southern portion is not well known to the writer. The outline suggests many gaps in detail, especially in determining the original source of the erratics, small and large, which are found as constituents of the gravels. The identification of these is the surest way of tracing the exact course of the ice-stream.

It should be remembered that glaciers and the streams derived from them have worked their way over a land surface already formed into hill and valley by age-long denudation and erosion.

#### A NOTE ON A FORAMINIFEROUS CLAY FROM BREDWARDINE AND BREINTON

In the *Geological Magazine*, 1933, the writer described two specimens of finely bedded grey clay containing foraminifera. The Bredwardine specimen was taken from the right bank of the Wye downstream from the bluff of drift above Old Court Farm, Bredwardine. The alluvium of the flood plain is here about 12 ft. thick. Along its lower edge occurs an outcrop of grey plastic clay, very stiff and greasy, without pebbles. The bed, of unknown thickness, forms an abrupt shelf under water, and is traceable for at least a quarter mile downstream. The estimated level of the outcrop is about 189 ft. O.D.

The second and similar specimen was taken from the river at Breinton, two miles above Hereford, at about 150 ft. O.D.

Both specimens were submitted to J. Wright of Belfast. On the Bredwardine specimen he reported as follows:

"I have now examined the two samples of clay and enclose a list of the

microzoa found in No. 1 (grey clay); no specimens were found in No. 2 (red clay from drift). . . . Considering the small amount of clay which I had to examine, the yield of Forams. in No. 1 was fairly good; the floatings were alone examined, and were taken from the washed material, which weight only .07 oz. . . . The Forams. are all common, shallow water forms, and might be found almost everywhere in muddy places off our coast. I should say the clay is one of the latest Pleistocene deposits. The Foraminifera in the drift are very much smaller in size.

"No. 1 weight of clay examined 1.3 oz. troy, after washing .07 oz. Clay very fine, no coarse material, Foraminifera frequent.

"*Miliolina subrotunda* (Montag.), frequent. *M. seminulum* (Linné), two broken specimens. *Bolivina plicata* (d'Orb), one specimen. *Lagena williamson* (Alesek), rare. *Globigerina bulloides* (d'Orb), one specimen. *Truncatulina lobatula* (W. & J.), very rare. *Rotalia beccarii* (Linné), very rare. *Nonionina depressula* (W. & J.), very rare. *Polystomella striatopunctata* (F. & M.), rare. *P. macella* (F. & M.), one specimen."

On the Breinton specimen Mr. Wright reported that besides some of the Bredwardine specimens he also found *Haplophragmium canariense* (d'Orb), *Patellina corrugata* (Will.), and *Discorbina obtusa* (d'Orb).

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#### NOTE

DR. POCKOCK'S field maps shew an extension of the drift from Whitfield Park to the east and north in a curve through Wormbridge, St. Devereux, Kilpeck, Much Dewchurch, Dewsall and Callow, abutting on Aconbury Hill and Ridge Hill, and reaching to within a few miles of the Wye below Hereford. To the north of the river the drift is widespread over the area described in the paper.



## The Botany of Herefordshire

By F. M. KENDRICK

PRIOR to the formation of the Woolhope Club very little work had been done towards making any botanical survey of the county of Hereford, and, though there had been one or two isolated explorers, the absence of any published records, or of associations where they could meet those with similar inclinations, left them unaware of each others' labours.

In 1804 the Rev. John Duncomb published the first volume of his *Collections towards the History and Antiquities of the County of Hereford*, and gave a list of 26 flowering plants, 7 mosses, 3 hepaticae and lichens and 6 fungi as growing in the vicinity of the Malvern Hills. From more "central" parts, as he puts it, he gives 16 flowerings plants and one fern, whilst from the northern parts of the county he names 79 plants, 9 ferns and 4 fern-allies, lichens, liverworts, etc., 32.

Some 39 years later a great step forward in the literature of local botany was taken by the appearance of the first edition of *The Botany of Malvern Hills* by Edwin Lees, a prominent member of the Malvern Field Club. This publication embraced an area having Malvern as its centre and covering both the Herefordshire and Worcestershire flanks of the Malvern Hills. Unfortunately the county boundaries in this area were, as they still are, very intricate and somewhat arbitrary, and therefore unless the locality for any particular plant is given in great detail and very clearly, so that it was undoubtedly within the Herefordshire boundary, the volume could not be relied upon as accurate with regard to the plants presumed to grow within the county.

At this period the study of natural history was making great advances throughout the country, and no doubt spurred on by the publication of E. Lees' book, a small group of botanists began an examination of the flora of the southern parts of Herefordshire. In 1851 one of these botanists, the Rev. W. H. Purchas of Ross, gave a lecture on *The Ferns of Herefordshire*, after which in a public discussion that took place it was decided to form a club "for the practical study, in all its branches, of the Natural History of Herefordshire and the district immediately adjacent", which object still forms the first rule of the Woolhope Club. On the 18 May, 1852, the club made its first botanical and geological exploration of the Woolhope area, and on the 22nd May, 1852, the foundation of the Woolhope Club was announced in *The Hereford Times*.

The formation of the Woolhope Club enabled a more systematic examination of the county flora to be set in motion. Several ardent helpers came forward from various parts of the county and the published *Transactions* of the Club contain many records of the plants found within its borders. Doctor H. G. Bull, who prior to the formation of the club had not engaged particularly in the botanical exploration of the county, by his influence and energy, became the driving force behind the publication of

the records, and in 1889 the *Flora of Herefordshire* by the Rev. W. H. Purchas and the Rev. Augustin Ley was published. The publication of the *Flora* was the culmination of many years' work, of patient observation, classification and record, all the more remarkable when we consider the handicaps under which these early botanists were working. It does not need much imagination to picture the difficulties of travel with which the explorers had to cope. Mr. G. H. Jack, in a lecture to the club in 1917, said, "In 1868 the toll bars of Herefordshire began to go out of use and by the 1st November, 1879, the last (Wye Side) was abolished." Many of the fourteen botanical districts into which the county was divided are delineated by toll roads, especially on the more populous eastern and southern districts, but considerable areas were accessible only with great difficulty, and in most cases had to be covered on foot. The *Flora* contained records of some 865 flowering plants, 38 ferns and related species, 283 mosses and 1,097 fungi. It contains no reference to the algae, which is not surprising in view of the scarcity of works on these plants at the time, but it is difficult to understand why there is no reference to the hepatics.

The publication of the *Flora* did much to quicken the botanical investigation in the county, and in 1894, some five years after its publication, an addition was published by the Rev. Augustin Ley giving 15 fresh species of flowering plants, 31 mosses and 39 fungi, besides additional facts and records with regard to the plants previously known and recorded. The genus *Rubus* received particular treatment in the *Additions*, because, as the author states, "the great richness of Herefordshire in forms of bramble encourages a full treatment" and, as an acknowledged expert on the genus, no one was more fitted than he to carry out this investigation. He named 72 species of bramble as growing within the county, several with associated species. It may be of interest to record here that the specimens he collected together with the remainder of his collection of Herefordshire and other plants are at present housed in the herbarium of the University of Birmingham. So numerous are the bramble specimens that all of them have not yet been sorted and recorded as quite recently some were still in their original boxes.

No further comprehensive revision of any part of the *Flora* was made until 1940 when the Rev. C. H. Binsted published under the auspices of the Woolhope club a revision and supplement to the list of mosses recorded in it. He also appended a list of 91 species of hepatics to be found in the county, but unfortunately gives no record of their location or prevalence.

It is now some sixty-three years since the *Flora* was published and considerable changes have taken place in the botanical environment of the county during that time. There have been some records of this change in the Woolhope Club *Transactions*, which contain many additions to, and confirmation of, the original *Flora*, but even these had fallen off during the late nineteen-thirties and war years, when many of the most important changes were taking place. Local botanists had long been aware of the pressing need to bring the records up to date and put them in an easily accessible state, these being scattered through many volumes of the *Transactions*, making it difficult to gain a complete pic-

ture of the county flora without much time and labour. This revival of interest in local botany came to a head in 1950 when a Botanical Society was formed, and affiliated to the Woolhope Club, which has as one of its prime objects the revision of the county flora. The membership, though growing rapidly, is at present small and the task of revising the flora will take many years, but a start has been made and the records as they are received will be published annually in the botanical reports of the Society and also in the Woolhope Club *Transactions*.

The authors of the *Flora of Herefordshire* spared neither time nor pains in the examination of the county, but they readily admit that the absence of records for a particular plant may be in many cases due either to lack of observation or to the fact that an observation has not been recorded, rather than that the specimen is absent from some specified district. Botanical records for any area, especially such a large area as a county of some 538,924 acres, need constant and careful revision, as even slight changes in environmental conditions may bring about considerable changes in the flora.

Owing to its remoteness from large centres of population Herefordshire seems to have suffered less than many counties from careless gatherers of wild flowers. It is probably because of this that during the year 1951 sixteen of the eighteen species of orchids known to grow in the county have been recorded, many in increasing numbers in spite of the fact that for the whole of the country there has been a tendency for them to become rarer. I instance the orchids because they are some of the rare plants, and it seems that people when they see orchids *must* pick them. As they are short lived perennials, many fruiting only once, it is obvious that unless there is constant replacement by seedlings the number of plants is bound to diminish. The main danger to the flora of this county comes from the economic necessity of having to increase the arable acreage of the farm land which has resulted in some of the field plants, especially herbs, being exterminated over large areas. The writer has observed in the Ledbury area that fields which used to produce an abundance of cowslips (*Primula veris*) are now practically bare of this flower. This apparently is not the case where the plants reproduce by bulbs, because he has seen at Abbeydore a ploughed field where the daffodil (*Narcissus pseudonarcissus*) was growing and flowering in abundance. It is probable, however, that ploughing is not the most serious factor with which we have to contend, for in this county, with its large areas of woodland and incalculable miles of hedgerows, the normal field plants can find a place of refuge, but the drainage of many small bogs and marshes has resulted in the loss of many rare plants which need such an environment to survive. The buck bean (*Menyanthes trifoliata*) must, through drainage, be considered as a rare plant of this type, as the writer has only been able to find it in one of its recorded stations, though fortunately a new station has been recorded recently in the north of the county. We have not been so fortunate in the case of the greater bladderwort (*Utricularia vulgaris*) as the cleaning out of a pool in Moccas Park has deprived the county of its only recorded station. A danger that is perhaps not so apparent at the present time is that of re-afforestation, especially where

the deciduous broad-leaved trees are being replaced by conifers, which, owing to close planting, have the effect of smothering the vegetation under them. An example of this can be seen in Haugh Wood where the columbine (*Aquilegia vulgaris*) once grew quite freely but now is very rare indeed and in fact the only flowering plants in any abundance are restricted to the rides. A *vulgaris* was found when the club went to Dormington Wood for the centenary photograph (Woolhope *Trans.*, 1951, p. lxx). One danger with which we have not yet had to contend is the spraying of the roadside verges with selective weed killers, and I hope that we never shall, especially on the bye-roads where the banks provide a fruitful ground for the botanist.

A branch of botany which gave rise to much discussion and debate amongst the members of the Woolhope Club towards the end of the last century was the longevity of seeds; and numerous observations on this subject are recorded in the club's transactions. Interest has again been roused in this subject by the discovery of several plants of henbane (*Hyoscyamus niger*) on the site of some recent excavations in Newtown Road, Hereford<sup>1</sup>. This is an old station for the henbane but where it had not been seen for several years. A crop of thorn apple (*Datura stramonium*) has also been found in a ploughed field near Dinmore Manor. It is interesting to note that many of these rather rare plants are to be found near the sites of the old religious houses, having no doubt been planted as part of the herb gardens, but now have established themselves in a wild state. Henbane occurs at Wigmore, the asarabacca (*Asarum europæum*) can be found near the site of the old priory at Deerfold, whilst danewort (*Sambucus ebulus*) and elecampane (*Inula helenium*) are to be found near the site of the old Aconbury priory.

Herefordshire, as can be seen from a study of its botanical records, can be recommended as an area which will provide the botanist with many rare and interesting flowers and plants. During a recent survey in connection with nature reserves it was found difficult to recommend any particular area as specially deserving of conservation, not because of the general paucity of rare or interesting plants, but because of their very scattered distribution. This no doubt is due in great measure to the thin bands of limestone and highly calcareous cornstones scattered throughout the Old Red Sandstone, producing areas of lime-loving plants where one would least expect to find them. One of the best examples of this type of phenomenon is to be found on Dinmore Hill close to the railway station where the change from the characteristic vegetation of siliceous soils to such lime-loving plants as dogs mercury, cuckoo pint and spurge laurel (*Daphne laureola*) is both sudden and unexpected; whilst in a small stream that flows over this limestone can be found a fairly luxuriant growth of the yellow saxifrage (*S. oppositifolium*).

The county is one of the most heavily wooded areas of the West Midlands and can be recommended for the study of woodland plants of calcareous habitat, because many of the woods are found on the limestone escarpments which are too steep for cultivation. Most of these

<sup>1</sup> *Xanthium spinosum*, first noted in 1865 at Barrs Court, has again been discovered.



woods are subject to periodical coppicing and at these times provide the ecologist who wishes to study the effect of the gradual reduction of light on woodland plants with a very fruitful field during the time the woods are growing to maturity again. When first cleared there are luxuriant growths of primroses and violets (*Viola canina*) followed by bluebells and spurge amongst which in the calcareous areas the searching botanist may find the rare *Euphorbia stricta*. Numerous specimens of the early purple orchid (*Orchis mascula*) are to be seen in the woods on the Silurian Limestones and lately the willow herbs are very much in evidence, especially, where the thinnings have been burnt. As the trees grow again the increasing shade forces the plants to the edges of the woods until only the early spring plants that flower before the trees are in full leaf remain, and even these are not good specimens.

As mentioned above the records of our plants since the publication of the revision of the *Flora* are to be found throughout the *Woolhope Transactions*, but the excellent indexes to the *Transactions* make the search for any particular specimen quite easy. However as most of the common flowers are scattered throughout the county in considerable profusion, it should only be necessary to consult the records when the stations of the rarer specimens are desired. To give a list of all the various plants that can be found in the county would take considerably more space than is available, especially if the various localities and the relative scarcities were given, and would serve no useful purpose as copies of the *Flora* and club *Transactions* are available at both the Hereford City and County Libraries. These records, though in many cases completed upwards of sixty years ago, are remarkably accurate even today, unless the specified areas have been subjected to intensive agricultural operations or drainage.

It is well known to botanists that the limestone soils tend to produce rarer and more beautiful flowers than any other type of habitat, and incidentally their delight in these areas is generally twofold because they also provide some of the most beautiful scenery. Herefordshire is fortunate in possessing two types of limestone within the county, the Carboniferous Limestone of the lower Wye Valley surrounding the Forest of Dean and well seen in the Doward area, and the Silurian Limestones of the Woolhope dome and the eastern and north-western uplands. As the flora of the respective districts tends to be somewhat different it is better to discuss them separately.

With reference to the former, the Rev. W. H. Purchas stated in the introduction to the *Flora* that the Herefordshire Carboniferous Limestone is "by far the richest as to the numbers of plants it produces". Unfortunately this limestone, the richest in rare plants, also contains the highest proportion of lime of any rocks in the district, and the insistent demands of the farmers for lime has led to extensive quarrying in the area. It was doubtful even as late as the end of 1949 how far it would be possible to preserve any part of the unique flora of the Little Doward, but, thanks to the efforts of Major A. E. W. Salt and Mr. C. Cadbury, some of the best areas have been preserved, but even now it may be that many of the rare specimens have been destroyed. Being in proximity to

the homes of the authors of the *Flora* it is not remarkable that the number of plants reported as being found in the area is considerable. However, in view of the destruction of many stations that has taken place due not only to the actual quarrying but also to the dumping of soil, the original records should be quoted with caution. It is hoped that a detailed survey of the district may be made in the not too distant future and that the records will then be amended as necessary. During a recent visit by local botanists some of the more important finds were giant bell flower (*Campanula latifolia*), bee orchid (*Ophrys apifera*), livelong (*Sedum telephium*), blue fleabane (*Erigeron acris*), impatient balsam (*Impatiens noli-me-tangere*), madder (*Rubia peregrina*), and lady's tresses (*Spiranthes spiralis*). Other lime-loving plants that have been reported from that area include bloody cranesbill (*Geranium sanguineum*), rock pepperwort (*Hornungia petraea*), narrow-leaved bitter cress (*Cardamine impatiens*), and the green and stinking hellebores (*Heleborus viridis* and *H. foetidus*). This is one of the few areas in the county where beech trees can be found growing in abundance and on the edge of the limestone near Welsh Newton can be found one of the largest in the county. Some years ago this tree was saved from destruction by the Woolhope Club and now it is very gratifying to record that the tree and the land on which it stands have been given to the County Council by the owner to ensure its preservation as far as possible. The upper parts of the Great and Little Doward and neighbouring hills have become covered with a humus-rich soil depleted of much of its lime, but on the lower slopes can be found such lime-loving trees as the sorbus, including the rare *Sorbus vagensis*, the large and small leaved limes (*Tilia platyphyllos* and *T. cordata*), whilst holly, dogwood and field maple are quite common, and with the beech, contrast strongly with the sombre colours of the yew trees. The privet (*Ligustrum vulgare*) grows abundantly and may be considered to be truly wild. In the woods can be found the fingered sedge (*Carex digitata*) and mountain sedge (*C. montana*), whilst very careful search may reveal the dwarf sedge (*C. humilis*), but this is extremely rare and covers only a small area. The next nearest station to the Dowards for the dwarf sedge is the Avon Gorge, and Mr. A. T. Willmott of Ross, who had first seen a specimen of this sedge during a visit to Bristol, being struck with the resemblance between the flora of the two areas, made search for it and found it on the Doward.

The Silurian Limestones, though not so prolific as the Carboniferous in regard to the number of species, provide a very typical limestone flora and can show many quite rare and interesting flowers. Of the three Silurian areas in the county the Woolhope Dome is the best known and has more records of plants to be found there than any other similar district. This is accounted for in part by the fact that many of the earlier club field days were concentrated here, and in part by the fact that a very ardent botanist, Doctor J. H. Wood, lived at Tarrington.

The Woolhope Dome provides a typical limestone flora which in spite of its short distance from Hereford has not been despoiled and new finds are constantly being made in the district. A recent find in the Checkley-Mordiford district was a small area containing fragrant orchid (*Habenaria*

*conopsea*), marsh helleborine (*Epipactis palustris*), bog pimpernel (*Anagallis tenella*), and marsh St. John's wort (*Hypericum elodes*), all growing together, whilst close by was the downy pearl antennaria. The intermingling of upland wooded limestone scarps with the farm land of the lowland shale valleys, and the scattered and comparatively scanty settlement make this an interesting area for the botanist, and also one of considerable scenic beauty. Orchids abound in the district and amongst the more unusual ones recorded are the birds-nest orchid, lady's tresses, narrow-leaved helleborine (*Aphalanthera longifolia*), broad-leaved helleborine (*Epipactis helleborine*), greater butterfly orchid (*Habenaria bifolia*), pyramidal orchid (*Orchis pyramidalis*), and the frog orchid (*Habenaria viridis*), though the latter has not been reported during the last few years; perhaps this is because of its small size coupled with the fact that its yellowish green flowers are not conspicuous in the long grass. The birds-nest orchid can also be found in the woods of the Fownhope area. Other interesting and unusual plants of which there are recent records are Deptford pink (*Dianthus armeria*), square stalked willow herb (*Epilobium tetragonum*), large thyme (*Thymus ovatus*), white musk thistle (*Carduus nutans*), columbine (*Aquilegia vulgaris*), herb paris (*Paris quadrifolia*), autumn crocus, lily of the valley, hound's tongue (*Cynoglossum officinale*), rue leaved saxifrage (*Saxifraga tridactylites*), sweet milk vetch (*Astragalus glycyphyllos*), and the barberry (*Berberis vulgaris*), which seems to be truly wild in the district. A very recent find in the area was the rare annual English catchfly (*Silene anglica*) of which there are very few records for the county. In Haugh Wood it is of interest to note the change in oak trees from *Quercus robur* on the limestone to *Q. petraea* on the siliceous May Hill Sandstone. Whilst in the area it is worth while to visit Caplar Hill both for its magnificent views of the Wye Valley and as a place that the club found to be of interest botanically in its earlier days. Marjoram (*Origanum vulgare*) and teasel (*Dipsacus sylvestris*) flourish on its banks, whilst in the early spring snowdrops can be found on its lower slopes.

The Silurian Limestone in the Malvern district has a list of plants in the older records very similar to that of the Woolhope Dome, but the formation being closer to urban areas, it would seem that many of the more interesting specimens may have become extinct. Recent records from this area are fairly scanty but there must be secluded stations in and around the extensive woodlands of the district which in many cases are off the beaten track, where rare plants can still be found. Three important finds recently reported are the bee orchid, the broad-leaved helleborine and the fly orchid (*Ophrys muscifera*); for the latter plant this is perhaps the only station now in the county, as the one reported on the Doward appears to have been quarried out. The escarpments of the limestone locally are not so steep as in the Woolhope area and have been subject to more agricultural cultivation, thereby in many cases accumulating a somewhat leached and humus-rich soil that is not so favourable to the lime-loving plants. In working this district the botanist will be well advised to pay particular attention to the numerous old limestone quarries throughout the district, for more often than not they will

yield the richest finds. In one such quarry were found with other plants yellow centaury (*Blackstonia perfoliata*), great knapweed (*Centaurea scabiosa*), felwort (*Gentiana amarella*), dwarf thistle (*Cirsium acaulis*), spurge laurel, and eyebright (agg.); in the adjoining wood the privet grew so thickly as to form an almost impassible undergrowth. The travellers joy (*Clematis vitalba*) grows most luxuriantly and festoons the edges of all the woods, often producing stems of up to one and a half inches in diameter. The yellow rock rose (*Helianthemum chamaecistus*) is scattered throughout the district, as are also the primroses and cowslips, so that it is not surprising that the writer recently found a specimen of *Primula variabilis* which is a hybrid between these flowers. The botanist in search of orchids in the district should concentrate on the Wenlock Limestone ridges, such as the Ridgeway in Eastnor Park, because the other limestones, though yielding orchids, do not seem to produce as many varieties as the Wenlock. The butterworts and sundews that were at one time reported at the base of the Malverns can no longer be found there, due no doubt to the fact that the bogs have lost the springs which have been diverted to domestic and agricultural purposes. Recent, though unconfirmed, reports from school children, have given the milk parsley (*P. palustre*) and oxtongue (*Helminthia echinoides*) as growing in the district. With regard to the former the nearest known station is Somerset, so it may have migrated from there; Duncomb reported it as growing on the Malvern Hills, but it has not been reported since: and possibly in both cases it may have been forms of *Silene pratensis* which is sometimes mistaken for milk parsley. Oxtongue is another rarity which can be confused with bristly sow thistle, but the reports may be correct and an endeavour will be made to confirm them. I have quoted the two unconfirmed records to show that the flora of a district requires constant revision as new plants are often the reward of the diligent searcher, especially in these days when long-distance travel is quite common and seeds can be conveyed by car tyres, attached to sacks or carried in the beds of lorries, to establish themselves far perhaps from their heretofore sole recorded habitat.

The third limestone area is the north-western uplands, a district from which very few botanical records were received in the early days when the *Flora* was compiled. This may be partly due to the fact that these uplands are somewhat higher than the other Silurian districts, and partly due to the difficulty of access that exists even today if one would traverse the district on foot. It is an area of complex and undulating topography; until the seventeenth century much of it was included in the forests of Bringwood and Deerfold, and even now the district is very heavily wooded. The editors of the *Flora* comment on the lack of records from the area, due mainly to the lack of observers in the district, as many of the missing records are of plants quite common in every other district. Many of the gaps in the *Flora* were not filled until 1917, when the Rev. W. O. Wait sent in a comprehensive list of plants for publication in the Woolhope *Transactions* representing observations made by himself and fellow workers over a number of years. Many of the hills in this district reach, and even exceed, a thousand feet in altitude, so there is a tendency



for it to be rather cold, and the botanist will perhaps make the richest finds along the river valleys or the southern edge of the uplands. It is questionable if the botanical possibilities of the area have yet been fully explored, as quite recently a small bog was discovered on its southern edge which contained such flowering plants as globe flowers (*Trollius europaeus*), butterwort (*Pinguicula vulgaris*), petty whin (*Genista anglica*), marsh helleborine (*Epipactis palustris*), and cotton grass (*Eriophorum angustifolium*), in addition to other more common plants. It is curious that this particular bog does not seem to have been known in the times when the *Flora* was written. It is very gratifying to record that there seems little possibility of this bog being drained, as it provides a water supply for a nearby farm. The Solomon's seal (*Polygonatum multiflorum*) is given in the *Flora* as growing in Deerfold near the asarabacca, but this has not been reported in recent years; if it still exists this will be its sole remaining station in the county.

The Herefordshire botanist is fortunate that he has within easy reach an area of complete contrast to the limestone districts in the moorland and sub-alpine area of the Black Mountains. This district has been described as one of the most beautiful, most inaccessible, and most thinly populated areas of the West Midlands, which is but rarely visited by the tourist. Having a high annual rainfall and poor shallow soils, the farms consist mainly of permanent grassland having wide stretches of unenclosed moorland in the higher parts. The combination of these factors means that there has been but little interference with the native flora, though, like the north-western area, its possibilities have not been explored for many years. A recent exploration by the Botanical Society resulted in finding the globe flower in considerable abundance, meadow thistle (*Carduus pratensis*), bistort (*Polygonum bistorta*) and the fragrant orchid, in addition to numerous more common flowers in this type of country. Reports have been received of many typical moorland plants including butterwort and sundew, together with more uncommon ones such as the bee orchid and sweet cicely; the last was reported as growing in one small station only in the early days but is now well established all along the Escley valley. It is remarkable that the bog asphodel (*Narthecium ossifragum*) seems to be practically absent from this area, one plant only having been found by Dr. Wood in 1893, and that after many years' search for this particular plant. The Welsh poppy (*Meconopsis cambrica*) may now be a denizen of this area, though it has not yet been reported, as it was growing on the borders of the county many years ago and it is more than probable that it has now crossed the border. The first record of the large bindweed (*Calystegia sylvestris*) came from Longtown in this area.

Because limestone and moorland districts have been mentioned in greater detail than can be devoted to the rest of the county it must not be assumed that the other areas are without interest to the botanist. There are many unusual flowers to be found elsewhere, but, owing to the more intensive cultivation of the rich deep soils of the lowland districts, their distribution is scattered and they find refuge in the hedges and small coppices. A search of the area round Tedstone Delamere should

provide many good plants including a number of orchids which have been reported from the district. It may even yield another specimen of the spur-lipped coral root (*Epipogium aphyllum*), that rarest of British orchids which was first found there and later near Ross. The numerous rivers, small streams and ponds scattered throughout the lowlands produce a goodly number of interesting aquatics including, on the Lugg, the yellow water lily (*Nuphar luteum*), the flowering rush (*Butomus umbellatus*), and the arrowhead (*Sagittaria sagittifolia*); whilst the Wye provides the purple loosestrife (*Lythrum salicaria*) and the pink balsam (*I. glandulifera*), a native of Ceylon, which has now established itself in abundance along the river banks. At least two tributaries of the Wye provide specimens of monkshood (*Aconitum napellus*), whilst this flower has also been reported from the north of the county.

During the year 1951, vipers bugloss (*Echium vulgare*) grew in considerable abundance on the Herefordshire banks of the Monnow. Within easy distance of Hereford one can find such old favourites as the greater spearwort (*R. lingua*), corn marigold (*Chrysanthemum segetum*), everlasting pea (*Lathyrus sylvestris*), green-winged orchid (*O. morio*) and foetid iris (*I. foetidissima*), whilst among the more recent discoveries are sickle medick (*Medicago falcata*), gold of pleasure (*Camelina sativa*), and stinking groundsel (*Senecio viscosus*). Two very important finds in 1953 were *Lobelia urens*, formerly reported only from Dorset and Cornwall, and the violet helleborine (*Epipactis sebsili*), a rare orchid.

With regard to the ferns and fern allies, the county can provide specimens of most of the more common varieties and some that are quite rare. Amongst the more uncommon ferns that have been reported are Tunbridge filmy, green-stalked maidenhair, marsh buckler fern, beech oak and royal ferns, and limestone polypody. I have seen growing on a railway bridge in the Ledbury district a few clumps of the maidenhair fern (*Adiantum capillus-veneris*) which it is hoped has survived the winter of 1952-3. It has not been reported as far as is known and probably owes its continued existence to the fact that it grows out of reach of even the most daring climber. Specimens of all the British horsetails are to be found in the county, most of them in considerable abundance; the rare one being the Dutch rush (*Equisetum hyemale*), and as this is the southward limit of this plant it is only to be expected that it will be somewhat scarce. With regard to the club mosses, these are but poorly represented, only the common club moss and the fir club moss have been recorded, and even the one or two stations reported may no longer produce specimens, because it was common practice at the end of the last century to make small baskets from these plants which apparently found a ready market. It is doubtful if the charas now exist in the county as a number of them were reported from the old Hereford to Ledbury canal which has long fallen into disuse, and is now dry over much of its former course.

Herefordshire is fortunate in its moss flora as it possesses about 330 of the 625 recorded mosses for Britain. The Wye gorge with the Great Doward, Huntsham Hill and the nearby wood is the most favourable district and is well known in bryological circles. As with the flowering plants, the Silurian Limestone regions come next in the abundance of

species they produce. The district within four miles of Mordiford bridge comprising the hills, valleys and woods from Tarrington to Common Hill, Fownhope, and including Mordiford and Checkley, has produced no less than two hundred and twenty species. In the north of the county Downton gorge and the sub-alpine country bordering Eardisley, Kington and Presteigne, are also good mossy districts. The county, apart from the Black Mountain area, including the Olchon valley and the Cusop dingle, is rather dry for the bog mosses or sphagna. Miss E. Armitage of Ross made a special study of the sphagna in the county, the records for which are preserved in a paper contributed by her to the *Journal of Botany* Vol. 61, 1923, a copy of which is in the Woolhope Club library. Moss habitats are more subject to ruination by natural or man-made changes than any others. The felling or planting of trees, drainage, the invasion of rank vegetation and even the activities of rabbits may very easily ruin a particular habitat. One very rare moss (*Fontinalis seriata*) which was recorded for Britain only at Winforton on a submerged rock in the river Wye was lost when the rock was removed and the adjoining bank concreted for the convenience of salmon anglers. The county botanists are also indebted to Miss Armitage for her memorable work on the hepatics or liverworts of the county, her discoveries representing 42 genera are recorded in the Woolhope *Transactions* for the year 1925.

The records of the fungi to be found in Herefordshire are exceptionally numerous and detailed. This is no doubt due to the popular Fungus Forays first held by the Woolhope Club in 1863, though the records only begin in the year 1868, but are continued every year until 1889. Referring to these forays the President of the British Mycological Society said in 1926: "So successful for a time were those held by the Woolhope Club that the society could trace its ancestry back to that body." It is a great pity that due to the other interests of the club the fungus forays were allowed to die out, but it is hoped that the newly formed Botanical Society will revive them. The British Mycological Society, which was founded in 1896, has held three meetings in Herefordshire, in 1902, 1926 and 1951. In 1902 a small party visited Dinmore Hill, Haywood Forest and Holme Lacy areas; 400 species were found including three or four fungi and a mould which were new to Britain. The second visit of the Society in 1926 was equally successful in spite of the very dry season. Dinmore, Moccas Park, Wormsley and Credenhill woods were visited and yielded 460 species of fungi, 41 of mycetozoa and 100 of lichens. Wormsley woods were described as a naturalists' paradise by the Society in their reports, and though somewhat disappointed by the number of specimens collected on the forays due to the dry season, they were elated at the discovery of an extremely rare fungus which was believed to constitute a new British, if not a new European, record. After the records of this foray had been compiled it was found that the number of species found in the county was 1,439, or 303 more than the number recorded in the *Flora* and its additions. The Society again visited the county in 1951 and visited the old areas and also had a foray in the Downton district. Once again the Society was highly successful and several rare species were discovered and it may be that the county lists will again be increased.

A very full list of the fungi and lichens found in the 1926 foray is reported in the *Transactions* for 1927. This is the first systematic record of lichens in Herefordshire; Lees did report some as growing on the Malvern Hills but gives no precise locality, and as suspicion has since been cast upon the authenticity of his records, they should be used with caution.

The Woolhope Club does not seem to have had any section devoted to microscopical work, so it is not surprising that the *Transactions* contain no reference to algae. There was an attempt to found such a section in 1896 under the guidance of Mr. Alfred Watkins to study the diatoms and desmids of the county but no record seems to exist of its activities. It seems a pity that this branch of botany has been neglected because with its numerous small streams and ponds, both on the limestones and the heavy clays of the lowlands of Herefordshire, it should provide a profitable hunting ground for these primitive plants. Unicellular and colonial forms are abundant, and such interesting forms as *pandorina*, *Volvox aureus* and the lovely *pedastrums* have been found. The filamentous forms are very prevalent, various species of *spriogyra*, *mougeotia* and *ulothrix* occur in abundance, but strangely enough only one small pond containing *zygnema* which seems to be scarce in the county. The desmids of the lowlands seem limited to forms of *closterium* and *cosmarium*, but no doubt many other species will be found in the Black Mountain area. Most of the common fresh water species of diatoms seem to be present in the county, but their collection, examination and classification is for the time being beyond the resources available.

In these few pages it has been endeavoured to show the possibilities of Herefordshire for the student of botany, whether he be an expert or a beginner. In these days when so much entertainment is available without requiring the slightest output of effort, there is a tendency to overlook the happiness which comes from the exercise of research work in this beautiful county of ours. It may be true that on the whole we have less time to devote to our interests than in the palmy days when much of the botanical work was done by the members of the Woolhope Club, but transport is improved and we can reach selected areas quickly and with considerably less discomfort. Much of the interest in field botany lies in the search for rare plants, but pleasure can be derived from the discovery of one of the more common varieties not heretofore recorded as growing in some particular part of the county. However, it is to be hoped that the botanist will be armed with a notebook rather than a vasculum, and that his notes will, in due course, be transmitted to the Botanical Society in order that the county records may be as complete as possible.



## Herefordshire Insects

By HOWARD M. HALLETT, F.R.E.S.

THE Entomology of the county of Hereford, like most other counties, has only been investigated in a few orders: and the success of such investigations depends largely on the opportunities given to collectors. Many have been occasional visitors, others regular seasonal visitors and a few have been residents. Among the last the county has been signally fortunate in having had entomologists of such quality as Thomas Hutchinson, Dr. John Henry Wood and Dr. T. Algernon Chapman.

The first records found are those made by Doubleday and Newman who paid a visit to Leominster in 1832 (see *Entomological Magazine*, 1883, Vol. 1, 51) in which they enumerate several rare species in one or two orders. Both were very well known entomologists. Newman edited both *The Zoologist* and *The Entomologist* for many years, but is perhaps best known as the author of *British Butterflies* and *British Moths*, in their day the collectors' standard works. Thomas Hutchinson published in the Woolhope Club *Transactions* for 1866, in collaboration with Mr. Purchas, a list of the lepidoptera of Leominster and Ross-on-Wye respectively. This was added to in 1887 and 1892 largely by Dr. Wood and reached in the latter list a total of 1,265 species. Dr. John Henry Wood of Tarrington (1841-1914) is of course by far the most remarkable entomologist who has worked in the county. He confined his studies entirely to Herefordshire, first studying Lepidoptera in which he specialised in the Microlepidoptera, with the result that he added several new species to science and to the British list. He wrote his first paper in 1878, and between that date and 1913 no less than 45 papers were published in the *Entomologists' Monthly Magazine* as well as others in contemporary periodicals. The first twenty-three were life histories of Tortricids and Tineae, and most of the remainder on Diptera, of which the most important was his work on the genus *Phora*. Dr. T. Algernon Chapman, F.R.S., who bequeathed his collection to Hereford Museum, was another very well known entomologist who resided at Hereford from 1871 to 1896 and made some very good additions to our lists. Colonel J. W. Yerbury in 1902 paid a lengthy visit to Tarrington and collected specimens of many orders; his finds were named by Saunders and others and published in the *Entomologists' Monthly Magazine* in 1903. A good many bees and wasps new to the county were additions to our faunal lists. J. R. le B. Tomlin was a regular visitor to relations at West Malvern and the results of his work on Coleoptera recently have been published by the Club. E. A. Butler visited the Breinton district in 1913. His records of Hemiptera are included in his great work *The Biology of the British Hemiptera-Heteroptera*, 1923, and his catches of Coleoptera are noted in Tomlin's *Coleoptera* mentioned above. Lastly our knowledge of the ants, wasps and bees is shown in papers by the present writer published by the Club

in 1937 and 1949, and include those collected by Colonel J. W. Yerbury in 1902.

N.B. The class Insecta, belonging to the phylum Arthropoda, embraces a number of orders and these are printed in small capitals to distinguish them from species which are printed in italics.

There are twenty-three British species of THYSANURA but only one has been recorded for this county, *Lepisma saccharina*, familiarly known as the silverfish; it haunts cupboards and other places in the house.

PROTURA contains seventeen species, none of which has been reported in the county.

COLLEMBOLA number two hundred and eighty-one species, commonly known as springtails. These occur in all sorts of situations—on trees, under stones, and they may often be seen on pools left on the ground after a shower of rain. This order has been quite neglected locally, and the only species noted *Cyphodeirus albinus*, a very small white creature which occurs freely in ants' nests.

The order ORTHOPTERA, containing the cockroaches and grasshoppers, numbers thirty-eight species including several alien immigrants. The kitchen blackbeetle has not been much commented on in Herefordshire and one example only, at The Lea, is all the writer has seen. Its name is *Blatta orientalis*. No doubt the house cricket, *Gryllus domesticus*, is still to be heard in Hereford and other towns, though improvements in ovens have tended to discourage it. Among the Locustodea *Metrioptera brachyptera* is not uncommon locally and *Meconema thalassinum* and *Leptophyes punctatissima* also turn up now and again, and *Pholidoptera griseoaptera* was taken at Hereford (V.C.H.). Among the Acridiodes, or short-horned grasshoppers, the following have been noted: *Tetrix subulatus*, *Myrmeleotetrix maculatus* and *Chorthippus bicolor*, the last two commonly.

Nine species of earwigs, DERMAPTERA, figure on the British list, four of which are importations. Only the common—too common—*Forficula auricularia* and the smaller *Labia minor* have been noted (*Vict. Co. Hist.* 1908).

Among the PLECOPTERA the stoneflies or needleflies are better known to anglers than the general public. There are twenty-eight British species; the early lives of these insects are aquatic. The only species I have found recorded were taken by Col. J. W. Yerbury and named by McLachlan (*Ent. Mo. Mag.*, 39, page 12) as *Nemoura variegata* at Much Marcle and Tarrington in May and June; *Perlodes mortoni* at Cusop in June, and *Isoperla grammatica* at Tarrington in May; this last is known to anglers as "Yellow Sally" and has occurred also at The Lea.

The PSOCOPTERA, of sixty-eight species is best known as containing the little "mites" which play havoc with our insect collections. Two, *Liposcelis divinatorius* and *Trogium pulsatorium*, occur in the county, and the latter has the property of making a ticking noise like the death-watch beetle. Two other species have been recorded by Col. J. W. Yerbury (*loc. cit.* 127) in 1902: *Loensia fasciata* at Woolhope in July and *Elipsocus westwoodi* at Tarrington in June. Many of the species are found on tree trunks where they match their surroundings very well.



The order ANOPLURA includes the Mallophaga, or bird lice; the Ischnocera, which affect cattle, horses, dogs, etc., and the Siphunculata, which affect mammals including human beings. Whatever may be said about the human guests, the Mallophaga make most attractive microscopic slides. Unfortunately no one seems to have studied the order locally and no records have been made, though no doubt veterinary surgeons could supply some. The total British list is two hundred and eighty-six species.

The number of species of mayflies, duns and others which make up this order, EPHEMEROPTERA, is forty-eight, and these are also much better known by anglers. Herefordshire, with its many rivers and other waters, must be very rich in these insects. Unfortunately no one appears to have collected them and the only species the writer can name is the mayfly, *Ephemera danica*, from Longtown.

Of the order ODONATA there are forty-two British dragonflies, out of which fourteen have been recorded. *Platynemesis pennipes*, common on the Wye (Wood); *Pyrhosoma nymphula*, Tarrington, June, 1902; *Ischnura elegans*, Tarrington, June; *Enallagma cyathigerum*, Devereuxpool (Wood); *Coenagrion puellum*, Tarrington, May and June; *Lestes sponsa*, Devereuxpool (Wood); *Agrion virgo*, common (Wood); *Agrion splendens*, Leechpool and Wye banks (Wood); *Gomphus vulgatissimus*, Hereford (Longfield, *British Dragonflies*, p. 77); *Cordulegaster boltonii*, Queenswood, Much Marcle (Wood), and The Lea; *Aeshna cyanea*, Tarrington in July; *Libellula quadrimaculata*, Devereux pool (Wood); *L. depressa*, common (Wood); *Sympetrum striolatum*, Tarrington, September, and Devereux pool (Wood); *S. sanguineum*, Devereux pool (Wood). The records without name of captor are those of Col. Yerbury (*loc. cit.*). No doubt a few more species could be added to this list by a serious collector.

Those engaged in the production of crops, and those interested in horticulture will probably hear with regret that no less than one hundred and eighty-three species of THYSANOPTERA (thrips) occur in this country, many of them serious pests on crops and flowers. No work has been done on this order and there is no definite records.

The enormous order HEMIPTERA consists of five hundred species of the sub-order Heteroptera, four hundred and thirty-four species of s.o. Homoptera including the white flies, three hundred and seventy-five species of Aphididae (greenflies and blight), and one hundred and three scale insects or Coccidae. From the Heteroptera one hundred and sixty-five species have been noted or recorded from this county, and it is hoped to publish a full list in the future. The most noteworthy records perhaps are those by Dr. T. A. Chapman of *Lygus viscidula* and *Anthrenus visci* on mistletoe in 1889. They were additions to the British fauna, and the latter probably feeds on the Homopteron *Chermes visci*; it would naturally be in this county that they should first be found, but curiously they have not yet been recorded from Gloucestershire. The two latest additions are the bed bug from Hereford and the house martin bug from The Lea.

No work seems to have been done on the HOMOPTERA, and the only species the writer has noted are the brilliant coloured black and red *Cercopis vulnerata* which sometimes abounds around The Lea and which he has searched for vainly in Glamorgan; also *Ledra aurita* which curious

species he has found on freshly barked oak trees in the Chase woods at Ross.

For the remaining sections of this order there are no records, though no doubt the Forestry Commission could furnish a good many.

Of the MEGALOPTERA, both the British species of *Sialis* occur in the county: *S. lutaria* at The Lea, commonly; *S. fuliginosa* at Tarrington in May and Cusop in June (Yerbury). Of the four species of *Raphidia* (snakeflies), only one has occurred—*R. notata* at Tarrington, 31st May, 1902 (Yerbury).

The order NEUROPTERA includes the mealy winged flies, brown and green lace wings, and numbers fifty-four. The following have been recorded from this county: one example of *Osmylus fulvicephala* by the Rudhall Spring at The Lea (H.); *Micromus variegatus* at Tarrington and Clifford's castle, July and August; *Hemerobius humulinus*, Tarrington, May and July; *H. atrifrons*, Tarrington, August, specially noted by McLachlan (q.v.); *Kimminsia subnebulosa*, Tarrington in March, Clifford's castle May to August; *Chrysopa ciliata*, Tarrington, June; *C. albolineata*, Tarrington, July; *C. carnea*, The Lea (H.), and *C. perla*, Tarrington, June and July.

The order MECOPTERA contains only four British species. Known as scorpion flies, *Panorpa communis* is recorded from the Malvern Hills (Y.), The Lea (H.), and *P. germanica* from Much Marcle (Y.), The Lea (H.).

The fairly large order TRICHOPTERA consists of one hundred and eighty-eight species, mostly familiar to anglers as sedges or caddis flies. All are aquatic in the early stages of development. Twenty-six have been recorded, twenty-five by Col. Yerbury (*loc. cit.*), and one known as Welshman's button (*Sericostoma personatum*) at The Lea. McLachlan (q.v.) makes special mention of *Limnophilus ignavus* at Woolhope and *Tinodes dives* at Tarrington (Y.).

The LEPIDOPTERA, the most popular order of insects, consists of two thousand one hundred and eighty-seven species and the Herefordshire list in V.C.H. amounts to one thousand three hundred and thirty-two. This excellent list is based on the lists published in *Trans. Woolhope Nat. F. Club* from time to time by the Rev. J. Hutchison, Vicar of Kimbolton, who collected for a great many years, and was written by Dr. J. H. Wood. The great value of this list is the section dealing with the Microlepidoptera. It includes a long list of Coleophora, including inulae apparently confined to Hereford, *sylvaticella*, *alticolella* (now *galactaula*), *glaucicolella* and *agrammella* all added to science in 1892; of *Lithocolletis* and of *Nepticula* (now *Stigmella*) which includes *torminalis* and *confusella*, both described as new to science, and *woolhopiella* described by Stainton in 1887 on specimens sent him by Wood. Wood's discovery of *Ditula woodiana* and of its larvae feeding on mistletoe (described by Barrett in *Ent. Mo. Mag.* 28, 225) was most notable. The *Transactions* of the Woolhope Club contain papers by Wood, e.g. 1876 on the Clearwings of Woolhope; 1891, Nepticulidae of Woolhope, and no small share in the list by Hutchinson corrected up to 1902 from a first list in 1866. Species described by Dr. Wood as new are as follows: *Coleophora sylvaticella*, *C. alticolella*, *C. glaucicolella* and *C. agrammella*, all in 1892. *Nepticula*

*tormalis* (1890) and *confusella* (1894); whilst *Nepticula woolhopiella*, described by Stainton in 1887, was also one of Wood's discoveries; and *Heliozela betulae* was described by Wood in 1890.

As regards the butterflies, the writer is indebted to Dr. Langdale-Smith of Tarrington for observations in that district. The marbled white (*A. galathea*) is quite common at Weobley and one was seen at Mitcheldean Road station in September, 1951. The two pearl-bordered fritillaries (*A. selene* and *A. euphrosyne*) are common with nice dark forms. *A. paphia* is common, *A. cydippe* less so. The marsh fritillary (*E. aurinia*) at Hough Wood and Canon Frome. The purple emperor (*A. iris*) is seen at Symonds Yat from time to time, and the Duke of Burgundy (*H. lucina*) at Stoke Edith and Hough woods. The "blues" are rare except the holly blue (*C. argiolus*). There are records for the mazarine blue (*C. semargus*) from Leominster in 1832 and for the large blue (*M. arion*) at Hereford, but rare (F. E. Harman). Of the hair streaks, the white letter (*S. w-album*), the purple (*T. quercus*) and the green (*C. rubi*) are all common. The wood white (*L. sinapis*) is very common at Woolhope and below West Malvern. The clouded yellow (*C. croceus*) occurs freely at times but the pale clouded yellow (*C. hyale*) has seldom been noted—one caught at Ross in 1836. Of the skippers, the grizzled (*P. malvae*), dingy (*E. tages*), large (*A. thamas*) and small (*T. sylvestris*) are all common. The white admiral also occurs, as Tomlin recorded it at Kilpeck, 29th August, 1909 (*Ent. Rec.*, 22,45).

White admiral (*L. camilla*). The Rev. R. B. Sissons reports that he took several specimens in a wood at Bolstone in July, 1946, and saw others. Unfortunately the ride in which they occurred has been destroyed. Mr. J. Knight has taken specimens in the Chase wood, Ross-on-Wye.

The first published list of the Herefordshire COLEOPTERA (beetles) appeared in the *V.C.H.*, 1908, Vol. 1, compiled by Canon W. W. Fowler. He recorded some six hundred species, but since then the Club has published a list by J. R. de B. Tomlin, M.A., F.R.E.S., Part 1, in 1949, pp. 1-30, and Part 2 in 1950, 31-64, containing records of one thousand three hundred and fourteen species; since then another forty-one species have been noted and published in the *Transactions*. As he states, the county does not produce a satisfactory list considering the varied conditions obtaining, and no doubt future collectors will add largely to it. Moccas Park in particular has produced a species new to the British fauna in *Hypebaeus flavipes* F., and amongst other rare captures there may be mentioned *Schistoglossa viduata*, *Gyrophæna poweri*, *Batrissodes venustus*, *Plectrophloeus nitidus*, *Rhizophagus aeneus*, *Throscus carinifrons*, *T. elateroides* and *T. brevicollis*, *Pyrrhidium sanguineum*. The last, in 1949, was the first record for over one hundred years, and evidently the species is a native and quite at home there. Amongst others are *Panagæus bipustulatus* at The Lea; *Aleochara lygæa*, The Lea; *Acrulia inflata*, Moccas; *Acrilus atomarius*, St. Weonards and Treago; *Macronychus 4-tuberculatus* in the Teme, only previously taken in the Trent many years ago; *Aphodius niger*, Treago Castle; *Cryptohypnus sabulicola*, Llangua; *Platycis minutus*, Mordiford; *Pyrochroa pectinicornis*, Cusop; *Apion laevigatum* in several localities. The genus *Apion* is unusually well repre-

sented as no fewer than forty-five are listed by Tomlin; *Platypus cylindrus* has occurred in several districts.

The order STREPSIPTERA consists of the strange parasites of the bees *Andrena* and *Halictus*, as well as two which attack Homoptera. Seventeen species are recorded for the British Isles, but only one, *Stylops melittæ*, has been recorded for the county—it affects *Andrena jacobæ*.

The HYMENOPTERA is very much the largest order of insects in this country and the latest list gives a total of six thousand one hundred and ninety-one species. It is divided into several sections, but only the Aculeata has been at all well worked.

The family Symphyta, or sawflies, total four hundred and thirty species of which we have records of only *Urocerus gigas* which has occurred on the Doward, it is destructive to pine trees; *Cephus pygmaeus*, which damages wheat by boring into the stems, has occurred at The Lea; *Abia sericea* and *Zaræa fasciata* have been taken in the Chase Wood, Ross; *Tenthredo arcuata* occurs commonly; *T. scrophulariæ* at The Lea; *Dolerus aeneus* at Longtown, 1,800 ft.; *Athalia lineata*, *Strongylogaster lineata*, commonly, and *Metallus gei*, once, all near The Lea, and the scarce *Pristiphora mollis* has been taken at Longtown at 1,800 ft. on Bilberry.

The family Apocrita are all parasitic insects, and though the British list amounts to two thousand eight hundred and twenty-five species, three of the Evaniidae, *Gasteruption jaculator*, *mimitum*, and *assectator* have occurred at The Lea; of the Ichneumonidae, the following have been noted, all by Col. Yerbury, unless otherwise stated: *Barichneumon chionomus*, one male at Tarrington, 1902; *B. peregrinator*, one male at Tarrington, 1902; *Ichneumon emancipatus*, one female at Cusop, 20th August, 1902; *I. confusorius*, one male, Pembridge, in July; *Spilichneumon occisorius*, one female, The Lea (H.); *Platylabus rufus*, two females, Woolhope, in July; *Alomya debellator*, one male, Cusop, in June; *Cryptus tarsoleucus* Sch., one female, The Lea (H.); *C. tuberculatus*, one male, Pembridge, in July; *C. minor*, one male, Much Marcle, in May; *Glyphicnemis vagabunda*, one female, Tarrington, in July; *Polyrhembia tenebricosa*, one male, Tram Inn, in July; *Lissonota bellator*, one male, Pembridge, in July; *Tryphon signator*, one female, Tarrington, in June; *Tryphon incestus*, one at Longtown at 1,800 ft., June, 1950 (H.); *Perilissus filicornis*, one female, Much Marcle, in May; *Exochus coronatus* (?), female, Tarrington, in August; *Diplazon nemoralis*, male, Tarrington, in July; *D. signatus*, one female, Tarrington, in August; *Agrypon flaveolatum*, females, Ledbury and Tarrington; *Paniscus testaceus*, one female, Ledbury, July.

The family CYNIPIDAE contains the gall wasps and the British list totals two hundred and twenty-eight. So far they do not seem to have been studied in the county. Familiar species are *Rhodites rosæ* which makes the mossy-looking gall on the wild rose, the oak apple and the marble gall; *Liposthenus latreillei* which makes a woolly gall on ground ivy, and many others.

The family CHALCIDOIDEA is another very large one. The latest list gives a total of one thousand five hundred and sixty-four species. It has been entirely neglected in this county—the only species recorded was taken at



Tarrington in July, 1902, by Col. Yerbury. *Chalcis sisipes*: the great majority of these insects are parasitic on other, often troublesome insects so that they have considerable economic value. Many of them are extremely minute in size.

The family PROCTOTRUPOIDEA is entirely unworked in Herefordshire.

ACULEATA. With the Lepidoptera, Coleoptera and Diptera, this group has received more attention than the other orders, and except for the first group, *Dryinidae* (which has only recently been separated from the *Proctotrupidae*) is as well known in Herefordshire as the three orders named above.

The family DRYINIDAE, consisting of some thirty-eight species, are distinguished by having the tarsi on the first pair of legs modified into a clasping organ. They have not been systematically studied here and only four species have been so far recorded: *Gonatopus sepsoides*, Chase Wood, Ross, 25th July, 1935 (H.); *Prenanteon daos*, Hay, a male, August, 1934 (C. G. Lamb, sp. in Brit. Mus.); *Anteon infectum*, Fownhope, both sexes, May, 1936, and Woolhope the same month (J. F. Perkins); *Aphelopus melaleucus*, Woolhope and Fownhope in May, 1936 (E. B. Britton and J. F. Perkins).

BETHYLIDAE contains nineteen species of which six are introduced from abroad. Only one has been recorded from the county, *Bethylus cephalotes*, Herefordshire (O. W. Richards).

The family CHRYSIDIDAE are beautiful insects, often called ruby-tailed wasps. Eight of the twenty species have been recorded. All prey on other insects.

The ants, wasps and bees have been fairly well observed, but large areas have not been visited. The earliest records are those made by Doubleday and Newman in 1832 from the Leominster district (*Ent. Mag.* 1, 51, 1933); then Dr. T. Algernon Chapman, F.R.S., Medical Superintendent of the County and City Asylum at Hereford from 1871-1896, contributed several records; the Rev. S. Cornish Watkins published an excellent list of bumble bees in the Club's *Transactions* (1914-1917) from the Staunton-on-Arrow district. In 1902 Col. J. W. Yerbury made a long visit to Dr. J. H. Wood at Tarrington and collected a large number of insects of several orders, and lists of these were published in *Ent. Mo. Mag.*, 1903. His aculeates were named by Edward Saunders, F.R.S., and contained a good many rare species some of which have not been found since. Finally the present writer published a full list in the Club's *Transactions*, 1934-37, pp. 64-77, and a further list in 1949, pp. 219-222. The chief collecting grounds have been at Mathon sandpits and about that area: these pits were very productive, and by far the most interesting species taken there was the bee *Andrena confinis*—this capture was almost contemporaneous with another capture near Cirencester—and was an addition to the British list. Visits were paid to Mathon from 1912 to 1934, and to Ross and district from 1927 to 1935, and since then to The Lea. Two or three week-ends have been spent at Longtown, and the mountain there, covered with vaccinium, etc., up to 1,800 ft., has produced species unobtainable elsewhere. As the county is mostly covered by the Old Red Sandstone, the insects occurring are mostly those liking a light soil, and it is to be re-

gretted that no opportunity has occurred for visiting the firmer soils of the Silurian limestones. However, as two hundred and thirty out of a total of four hundred and eighty-six British species have been recorded, the Herefordshire list compares favourably with many larger counties. As the Club has already published a full list it is not necessary to repeat it here: mention of some of the rarer species will be sufficient, but the following have not been published before. *Andrena tibialis*, taken by E. Newman in Herefordshire in 1832 (no doubt at Leominster), see *Ent. Mag.* ii, 53, 1935; *A. cineraria*, Cornage Wood, The Lea, one male, in May, 1951; *Sphecodes hyalinatus*, The Lea, two females, in June, 1951; *Megachile ligniseca*, Marden, a female, 2nd September, 1950 (R. L. Barrow, to whom we are indebted for the record); *Anoplius caviventris*, Cornage Wood, The Lea, a male, 24th June, 1951.

Among the most interesting species which have been taken are *Sapyga clavicornis*, which was first recorded by Newman at Leominster in 1832—probably its first record for the country; it has since occurred at Tarrington, 1902 (Yerbury), Mathon and The Lea (H.). *Calicurgus hyalinatus* at Tarrington (Y.); *Psenulus concolor*, also at Tarrington in 1902; *Priocnemis schiodtei*, not rare, at The Lea; *Andrena bucephala* at Tarrington and The Lea; *A. falsifica* at Llanveynoe, the three species of *Stelis* in Ross district, and *Ancistrocerus antilope* which was taken by Dr. T. A. Chapman, but has not occurred since. The rare wasp *Pseudagenia carbonaria* occurred in 1946 and August 1948 just over the border in Gloucestershire, failing to qualify as a Herefordshire insect by about two yards; no doubt it occurs this side of the fence also.

It is in the order DIPTERA that the county has made its most important contribution to entomology, due almost entirely to the work of Dr. J. H. Wood of Tarrington. The *Victoria County History of Herefordshire*, 1908, Vol. 1, pages 96-107, contains a complete list of these insects contributed by Dr. Wood. His collection was bequeathed by him to the Club for the Hereford Museum in 1914, and it remained there until 1926 when it was realised that it would serve a much better purpose if it was deposited in the British Museum (Natural History). We cannot do better than quote the late Dr. F. W. Edwards, F.R.S., of the latter Museum in *Ent. Mo. Mag.*, 1926, Vol. 62, 22-23:

"The collection of Diptera is especially important, for not only is it the finest county collection which exists in this country, but it contains named examples of a great many rare species or various families which were not till then represented in the National Collection, including the types of practically all the new species introduced by Dr. Wood. The most important of these are of course the Phoridae, of which there is almost a complete set though one or two of the types appear to be missing. Some undetermined Phoridae in the collection have been examined by Father Schmitz, and among them he has been able to recognise the following additional British species: *Parastenophora antricola*, Schmitz, one female, Stoke Wood, 30-iv-08; *Aphiochaeta cothurnata*, Schmitz, one male, Stoke Wood, 2-vi-06; *A. pygmaeoides*, Lundbeck; *A. rubella*, Schmitz, Stoke Wood, 20-viii-06."



In addition, R. L. Coe of the British Museum has kindly furnished the following observations:

"Wood's published writings on Diptera are mainly confined to the family Phoridae, in which he specialised, and the material of this family forms the most valuable part of his collection. References to Wood's publications on Phoridae will be found in an obituary notice by Dr. T. A. Chapman, 1914, *Ent. Mo. Mag.*, 50, 277-9, and a complete list of his publications in another obituary notice, by an unstated writer, *Ent. Rec.*, 26, 256-8.

"In the B.M. (N.H.), besides the eighty-one species of Phoridae described by Wood, there are over forty species in other family which to this day are represented only by Wood's specimens.

"Among the species of particular interest are the following. Family Ptychopteridae: *Ptychoptera longicauda*, Tonnoir (1919, *Ann. Soc. Ent. Belg.*, 59, 121); this is a handsome daddy-long-leg type of fly with banded wings; Wood took one or two known British examples. Family Syrphidae: *Bradypalpus ennotus*, Loen (Col. R.L., 1941, *Ent. Mo. Mag.*, 77, 193-7). A brownish fly originally described from specimens taken in Hungary. Wood took the only known British example. Family Trypetidae: *Spilograpta spinifrons*, Schra. (Collin, J. E., 1950, *Ent. Rec.*, 61, 69-71), a yellowish fly with brown banded wings; the male has a row of three remarkably long and stout black spines on each side of the frons.

"Among the species named after Wood are: *Tachista woodi*, Collin; *Empis woodi*, Collin, and *Hilara woodi*, Collin. All three flies belong to the family Empididae."

The order SIPHONOPTERA, better known as fleas, contains forty-one species, most of which are attached to their own particular host, either birds or mammals. They have not been worked out for Herefordshire, and only very few have been distinguished, but there is no reason to suppose that they are any scarcer here than in other districts. *Pulex irritans*, the human flea, seems to be less common than of yore; it also occurs on the badger and fox. *Ceratophyllus styx* is attached to the sand martin, and occurred freely in their nests in Mathon sandpits; *C. gallinae* has been determined in blue tits' nest at The Lea, and *Hystrihopsylla talpae*, the largest British flea, is common in moles' nests.

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The following list contains the principal works and papers which deal with Herefordshire insects, and for most of which we are indebted to Dr. B. M. Hobby of the University Museum, Oxford; for the Diptera to Mr. R. L. Coe of the British Museum (Natural History), and to Miss Penelope E. Morgan, late Librarian and Curator of the City Library and Museum, for much help and information in respect to the Club's *Transactions*.

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## CHAPTER VI

*The Fisheries of the River Wye*

By J. ARTHUR HUTTON

I HAVE a feeling of almost affection for the "Wonderful Wye", not only because of the many happy days my friends and I spent fishing at Hampton Bishop, but also because of the many attractions of the whole neighbourhood. Catching fish is not all of fishing. It is the most beautiful river valley I know, and, in its course of 155 miles from its source on Plynlimon to its mouth in the Bristol Channel, there is attractive scenery almost everywhere, to say nothing of historical associations and beautiful old buildings, such as Chepstow Castle, Tintern Abbey and Llanthony. Also some of the best black-and-white buildings are to be found in this lovely valley. Another attraction is the great variety of bird-life. I don't pretend to be an ornithologist but during the twenty-six happy years we spent at Hampton Bishop, I was able to identify nearly ninety different species of birds. What perhaps interested me most was to see quite a number of siskins—I don't think they breed in this country, and probably those I saw had come from Norway to winter here. We used to keep a record of the dates on which the summer-migrants were first seen. Here are some of our notes: swallow, March 21st; sandmartin, March 21st; housemartin, April 3rd; swift, April 19th; sandpiper, April 11th; cuckoo, April 14th. But this article is supposed to be about fish and not about birds.

For the above reasons I felt more than honoured when the Woolhope Club asked me to assist in the celebration of its centenary by writing about the "Fish and fisheries of the River Wye". The only doubt I felt was whether I could do justice to this important subject. Perhaps it is not generally realised that the fisheries of the Wye are of very great economic importance in the welfare of this valley.

I see from the 1950 Report of the Wye Board of Conservators that the following fishing-licences were issued in that year: salmon 1,430, trout 6,651, freshwater-fish 9,375, making a total of 17,059. It is rather wonderful that so many people were able to obtain sport, health and enjoyment on the banks of this beautiful river.

I must draw attention to the fact that, apart from the pleasure and health which they derive from their sport, these fishermen were able to provide quite an appreciable addition to our present inadequate national food supply. The Report of 1950 states that 3,441 salmon were caught by the rods, and in addition 1,816 were caught by the netsmen in the Bristol Channel, with a total weight of about 76,000 pounds of most valuable food, worth considerably more than £30,000.

There are no complete figures of the numbers of trout and fresh-water fish caught in 1950, but in the comparatively short length between Builth and Boughrood the following captures of freshwater fish were reported: pike 154, grayling 529, chub 1,943, dace 6,543, roach 86, perch 106, eels 192, total 9,553—a wonderful figure. When one takes into

consideration the numbers of trout and other fish caught in all the rest of the river, one can realise that these, together with the salmon, do provide a by no means unimportant addition to our national food supply.

Nor should it be forgotten that a considerable amount of money is spent by anglers for house-rent, food, servants, gillies, car and horse hire, and in other directions. For instance the receipts of the Wye Board in 1950 (licences, fishery-rates, etc.) amounted to £7,618, most of which was spent in the district. Further, the Local Government Boards, District Councils, etc., derive a revenue of several thousand pounds a year from the rates levied on the value of the rod-fisheries. I believe when we had a lease of the Hampton Bishop fishery, that we were the largest rate-payers in the district. I used to reckon that in one way and other the fisheries of the Wye were worth well over £50,000 a year to the valley. Probably today this estimate would be much under the mark. It will therefore be realised that the fisheries of the Wye are really of great economic importance to the whole of the district.

There are many different species of fish to be found in the Wye and they are divided naturally into two main classes. First there are the fish which are born and bred in the river and which never go down to the sea: pike, perch, chub, dace, tench(?), grayling, gudgeon, loach, minnows, lamprey (griggs) and brown or river trout. Trout spawn in the latter part of the year, usually in November and December; all the others spawn in the spring. The other class consists of the migratory (anadromous) fish, which are born either in salt or freshwater, and which spend part of their lives in both elements: salmon, sea-trout, shad, eels, flounders, sea-lampreys and sturgeon.

#### FRESHWATER CLASS

**MINNOWS.** These fish are not of great interest to anglers except perhaps as baits to catch larger fish. The writer has never tried eating them, but can imagine that they might make quite a tasty dish if fried like white-bait. He once saw a remarkable migration of these little fish: probably it was in connection with spawning. It was something like a large run of salmon in miniature. There were crowds of them swimming up the river in quite shallow water close under the bank, and they were leaping over a tiny waterfall about two inches high. Some of the males were striking little objects and looked as if they had tiny jewels stuck on their sides, probably their "spawning livery".

**STONE-LOACH.** These small fish are not particularly interesting to anglers, except perhaps as spinning-baits. Eels are very fond of them and they are quite useful as baits for night-lines.

**GUDGEON.** Gudgeon are quite good to eat and the French think a lot of them. They may be caught with a very small draft-net as natural baits for salmon, but the difficulty is to get them small enough. Wye gudgeon are generally rather large, running up to six or eight inches in length. They make very good baits for night lines for eels.

**DACE.** There were swarms of these bright little fish in the Wye. In 1913 it was decided to try and net out some of the crowds of freshwater fish at Hampton Bishop and to stock the water with trout, so that there

would be something to do when salmon were clean-off. It was soon found that netting was a skilled job and that handling a big draft-net in a large river was rather hard work. Occasionally there were some very big hauls, including a "miraculous draft" of 1,167, mostly roach and dace, on 3rd April, 1915. Chub are far too clever to be caught easily with a draft-net, for every time it lifts over a bunch of weeds or a small hillock out they go. It is possible to have quite amusing fly-fishing for dace.

**ROACH.** These pretty fish are rather larger than dace but not quite so numerous. The largest caught by the writer weighed just over two lbs.

**PERCH.** The perch is a fine sporting fish and many run up to three pounds and over in weight. It is about the best freshwater-fish for eating. Roach and dace are just eatable, but I should prefer blotting-paper to chub, for the former has no bones.

**CHUB.** There are far too many chub and pike in the Wye for the good of the salmon. Not only do they destroy thousands of fry, parr and smolts, but they also use up an immense quantity of food. This is probably the reason why this wonderful river has not produced the quantity of salmon which was expected and hoped for. Anyhow, the writer did all he could by helping to establish the Hereford and District Angling Association, many of whose members are working-men with small incomes. Many of the riparian owners have followed his example and give them and others permission to fish in their water for pike, chub and other freshwater-fish, subject to one condition—*every fish caught must be killed*. The fact that 9,375 freshwater licences were issued in 1950 shows that this privilege is much appreciated. There is no close-time for freshwater-fish in the Wye district.

**PIKE.** A few pike are caught when spinning for salmon. The heaviest the writer managed to catch weighed fourteen pounds. But Beddington caught one weighing fifteen pounds. Inside it was a three-quarters pound chub. The heaviest from the Wye was caught many years ago by Major Booth when fishing for salmon: it weighed thirty-seven pounds. He must have been rather disappointed when the fish was landed. It is preserved in the Hereford Museum. Pike are rather long fish and one of this weight would look as long as a salmon weighing 60 pounds or more; when playing this fish, naturally he would think that he had the grandfather of all salmon on his hook.

**TENCH.** Tench are included in the list of Wye fish, but it is doubtful if this is correct. One was captured when we were netting for freshwater-fish and it was caught twice again in exactly the same spot. It was such a handsome fish with its bronze back, golden belly and beautiful ruby eyes, that it was returned to the river each time. Eventually in the very same spot, it, or one almost exactly like it, was caught by an angler, and this time it was not returned. It weighed 3½ lbs. and was the only one we caught and it is doubtful if tench are indigenous in the Wye. Possibly this specimen had been turned into the river when small by an angler, out of his bait can, after he had been live-baiting for pike. It is very rich eating.

**LAMPREYS (or Griggs).** The writer knows very little about these little



creatures. These have been netted occasionally but were quite small, about eight or nine inches long and looked just like bootlaces.

GRAYLING and TROUT. There were not many of these fish in the Hampton Bishop water, so it is not possible to say much about them, but judging from the number of trout licences issued, there must be some good trout-fishing to be had in the tributaries and in the upper waters.

It is recorded that in March 1925 a whale was stranded in the estuary on Gruggy Rocks close to the mouth of the Wye—length 48 feet, girth 19 feet., tail 11 feet across, estimated weight about forty tons. It was the first whale seen in the Bristol Channel for over forty years. But a whale is a mammal, not a fish, and ought not to be included in this chapter.

#### MIGRATORY CLASS

Of the migratory class, some are born in the river and some in the sea, but all at some period of their lives are to be found in freshwater.

FLOUNDERS. During netting operations at Hampton Bishop occasionally a few flounders were caught. None were landed by angling. They are very much more plentiful in the lower Wye, below Ross and Monmouth, and they are sufficiently numerous to make it worth while fishing for them with rod and line. Apparently they do not spawn in the river, but are all born in the sea, so that their presence in the Wye (and other rivers) is the result of a food-migration only. Those caught by netting were quite small, about eight to ten inches long.

SHAD. For illustrations and article on shad see *Transactions*, 1935, pp. 135-139. One of the most interesting of the many varieties of fish to be found in the Wye is the shad. They are rather like herrings to look at and, when fresh-run, are really beautiful, for they have the same prismatic sheen as mackerel. They generally appear in large numbers in May, and when they are spawning make so much noise that one could almost imagine that horses were splashing about in the river. On one occasion, when we came in to lunch, a friend of mine said I must go down to the Roaring Rocks, for he had seen a big lot of grilse there, but could not catch any of them. Of course they were shad which he had seen, for this was in May, and grilse don't run up the Wye in any quantity until July and August, though we once caught one at Hampton Bishop on 18th June. When fresh-run, shad are quite good to eat barring their numerous bones. I had often eaten them before at Heidelberg in Germany where they are known as "mai-fisch". As far as I could judge the largest would weigh about two or three pounds, possibly more. I never saw any of their fry. Probably they go down to the sea as soon as they are hatched. I don't know whether they run very far up the river, but I was told that there was a regular fishery for them in the lower Wye.

SEA LAMPREYS. The sea-lamprey is quite a different species to its cousin the river-lamprey. It is certainly much larger, say, about thirty inches long, yellow in colour with brownish blotches along the back and sides, and is not very attractive looking. They have no proper mouth but a sort of sucker underneath the head surrounded by teeth. It is said that

they attach themselves to running salmon so as to get a lift up the river. Occasionally marks are seen on salmon which might have been caused in this way. Sea-lampreys make their nests or spawning-beds by getting hold of small stones with their suckers, wriggling about to loosen them, and, drifting down a few feet, they drop the stones below the nest. Sometimes, if a stone is too firmly fixed, two of them would work together to loosen it. These nests are generally made in fairly fast streams about two or three feet deep. They are about a yard in diameter, about a foot deep, and easily seen, for they look as if someone had upset a barrow-load of small stones behind each bed. As many as half a dozen beds may be seen in one stream. They generally appear in June, but the fish went almost blind when they were at work, for it is possible to wade into the river and stand in the nest beside them. They seem to take no notice of an intruder but go on making their bed. I gaffed one out for examination; it was thirty-two inches long and rather repulsive looking. I do not know whether these animals die after spawning, as eels do.

STURGEON. Few people know that sturgeon are very occasionally found in the Wye and in the Severn, and possibly in some other rivers in this country. Probably they run up the rivers to spawn, but little is known about them. There are two specimens in the Hereford Museum, but neither is very large. One, captured in the Severn in 1941, was photographed. It was a huge monster, nine feet long and weighed 353 pounds. I believe there was once a very large fish of some sort in our water. One day when I was fishing for salmon in the Gorse Bush pool I heard a tremendous plash in the pool just below. I turned round to the Gillie and asked:

"Whatever was that Charlie?"

"It was a fish jumping in the Roaring Rocks."

"Good gracious. It sounded like a cow tumbling into the river."

So I went down to the pool and started fishing. I never saw any fish, but suddenly there was a great surge of water on the surface, as if something very large had made a plunge in the deep water below. I don't think any salmon could have made such a wave, so it is possible that it was made by a large sturgeon.

EELS. Eels can best be done by "clotting". By this method over one hundred of these wrigglers have been caught at a sitting. However, if one wants larger specimens, night-lines are more effective. Gudgeon are the best baits for night-lines: salmon-parr or small trout would be better still, but that was "agin the law". Eels destroy many small salmon fry and parr.

There is one curious fact about eels. Most, if not all, of the other migratory-fish found in the Wye are born in the river and migrate to the sea, where they find their main food and where they fatten, and whence they return to reproduce their species. With eels it is just the reverse. They are born out in the Atlantic near the Sargasso Sea. Their fry gradually make their way across the ocean to our rivers, first of all in the semi-transparent form of glass-eels, which gradually change into little brown elvers, and it is in this latter form that they run up our rivers in millions. In some places they are caught and turned into a sort of jelly

called elver-cheese. It is in our rivers and lakes that eels find their main supply of food and where they grow fat and large, until the time comes when Nature steps in and drives them back to the sea.

When this time comes, their darker coat gradually becomes more and more silvery. A similar change takes place with the small salmon parr when they reach the smolt-stage, and also with the so-called spawning livery of salmon and sea-trout kelts, if they recover from the strenuous work of spawning and if they survive to return again to the sea. This is another of the many wonders of Nature. This bright silvery coat would act as a more protective colouring in the sea.

It is curious what a prejudice there is against eels, and more particularly so in Scotland, not only against catching them but also at the dinner table. Perhaps the inhabitants think they may be eating serpents. Eels are good food if well cooked, and especially those caught in the Wye. Perhaps this was because we eat salmon parr "by proxy".

**SEA TROUT.** Sea trout are not very plentiful in the Wye, which is a pity, as one can have delightful fishing with these sporting fish. The writer has had some really happy experiences fly-fishing for them in Norway. Like salmon, they are born in freshwater and spend their childhood there; they then go down to the sea to grow fatter and larger, and eventually return to the river to spawn. They are of course smaller than salmon, but providing one fishes with light tackle, good sport can be had with them as with their larger cousins. After all, fishing is mainly a matter of comparison. It takes far more skill to catch a one-pound trout with a dry-fly on fine drawn gut than to land a salmon of twenty pounds on strong spinning tackle. Sea trout generally live to an older age than salmon, for the mortality after spawning is not so heavy, and therefore they can reach quite a good size. The few sea trout caught at Hampton Bishop were landed when we were netting for freshwater-fish. There is a curious local name for them on the Wye—'Core'. If one of our netmen working in the Bristol Channel was lucky enough to catch one he was allowed to keep it as a perquisite.

**SALMON.** The last of the migratory-fish found in the Wye is the most important one—the salmon. I have already written so much about these noble fish that I feel it would only bore people if I were to deal again at any length with this subject. Those who want to study the subject more closely should see my *Wye salmon and other fish*, published in 1949 by John Sherratt & Son.

Thanks to the wonderful discovery that the life-history of almost every fish is indelibly inscribed on its scales, we now know a great deal more about the facts of the life of the salmon. A great deal is owed to the late Mr. H. W. Johnston, who first published the results of his investigations in 1904.

We also owe a great deal to the excellent reports of the Wye Board of Conservators. No other Board gives such full details of all the fish caught, not only by rod but also by netting—the numbers, weights, dates when caught, and, in the case of the former, in what part of the river.

These Reports reflect great credit on the clerks of the Board, including,

Major H. Beresford Peirse, D.S.O., 1904-12, Mr. R. Hay Morant 1913-19, and Major F. A. Phillips, D.S.O., 1920.

Consequently we now have almost accurate knowledge of the life history of Wye salmon, and I propose to give a few details of this as concisely as possible.

Most of the spawning takes place in November and December and the ova hatch about three to four months later. When the tiny embryo salmon (or alevin as it is then called) is first hatched it is only about one inch long, and attached to it is the umbilical-sac on which it can subsist for several weeks; so, if the ova were deposited, say, in November, no other food would be required until March or April in the following year.

Most of these small fish, the parr, remain for two years feeding in the river before Nature orders them off to the sea as smolts, where they will obtain the rich food which will fatten them up to grow into large salmon. They will then be about four to six inches long. About five per cent. may migrate when they are only about twelve months old and about seven per cent. may remain in the river for three years before they migrate as smolts. This smolt-migration generally takes place in the spring—March, April and May.

The time they remain in the sea varies a good deal, but the longer they remain feeding in saltwater the heavier they will weigh, as will be seen from the following particulars of fish spawned, say, in 1940 and hatched in 1941.

		Weight in lbs.		
		min.	av.	max.
1943	Migrate as smolts which will return as grilse in 1944	2.0	6.0	13
1945	Small spring-fish	4.5	11.4	24
	Small summer-fish	5.0	12.7	27 1/2
1946	Large spring-fish	10.5	20.8	42
	Large summer-fish	14.0	23.7	43
1947	Very large spring-fish	19.5	34.6	59 1/2

The above weights are based on the examination of the scales sent me during the 33 years 1908-40. As these totalled up to over 36,000, they can be regarded as a fair representation of the different classes of Wye salmon. The percentages of each class are as follows: grilse 6.8, small spring 15.2, small summer 35.1, large spring 33.0, large summer 1.6, and very large spring 2.1, making a total of 94.4 per cent. Salmon which had spawned before and which were returning to the river to spawn for a second or third time made up the remaining 5.6 per cent.

Spring-fish are those which show by their scales that they have done no recent feeding in the sea in the year in which they return to the river, generally in the early months of the season. On the other hand, the scales of grilse and summer-fish, which run up the river in summer and autumn, do show signs of recent feeding in the sea. Most of the spring-fish are caught by the rods as comparatively little netting is done during the early months of the season. The main harvest of the nets consists of summer-fish.

Of these different classes of salmon, those which are not caught or do not die will all spawn about the same time, and after spawning will become spent fish or kelts, and will eventually get back to the sea in the early months of the following year. Some of them may survive to return to the river and spawn a second time, and a very small number may even spawn a third time. Salmon may lose as much as a third of their weight in the exertion of running up the river and in the still more arduous work of spawning. When one realises that some of these fish may spend the best part of a year in the river before their return to the sea, and that during that time get little, if any, food in freshwater, it is surprising that any of them survive to spawn again. My investigations showed that about ninety-five per cent. of the annual catch consisted of maiden-fish returning to the river for the first time and that only five per cent. had a spawning-mark on their scales.

**BIG FISH.** One of the great attractions of the Wye is that it is a "big-fish river". Thirty pounders are fairly common, and there is always the chance of a forty-pounder, and fifty-pounders are not unknown. During the 26 years we fished at Hampton Bishop we were lucky enough to land 81 thirty-pounders and 12 over forty pounds; the heaviest (caught by our keeper Woolliams) weighed forty-seven and a half pounds. It is no exaggeration to say that in the spring any under 20 pounds was regarded as a comparatively small fish. The heaviest Wye salmon known was caught by Miss Davey in 1933 and weighed  $59\frac{1}{2}$  pounds, and is believed to be the largest spring-fish caught with rod and line in Great Britain. Professor Merton had the unique position on the Wye of having two fifty-pounders to his credit. Mr. Wyndham Smith had two fish in one day weighing together 95 pounds, 44 and 51 pounds. Elsewhere the monster-salmon, the remains of which were found dead in 1920, have been mentioned. In the writer's report he stated that, as far as it could be judged, when in good condition, it must have weighed certainly over 60 pounds, probably over 70 pounds, and possibly over 80 pounds. In the Report of the Wye Conservators for 1950 it is stated the remains of another monster had been found which measured five feet in length and that it must have weighed about 70 pounds when in good condition.

**HISTORY.** In a paper published in the *Salmon and Trout Magazine* (*The Spawning Grounds of the Wye*) I drew attention to the fact that in the Wye district, namely in the main river itself and in its tributaries, there were about 858 miles of waters, and I estimated that of this total about 506 miles were either inaccessible to salmon or were unsuitable for spawning, leaving however no less than 352 miles of possible spawning grounds. Therefore, it was evident that the Wye ought to have been one of the most productive salmon rivers in England and Wales, with the exception perhaps of the Severn, where there are even larger possibilities, but the Severn was, and perhaps still is, grossly over-netted.

In the latter part of the nineteenth century the salmon fisheries of the Wye were in a most deplorable state. The money received for rod-licences dropped from £207 in 1891 to £118 in 1901, and in the same period the receipts for net-licences fell from £343 to only £202. This was the result of gross over-netting, not only in the sea and estuary but also



Model of the record Wye Salmon in the Hereford City Museum  
( $59\frac{1}{2}$  lbs.)



in the river itself right away up as far as Hay, which is nearly 100 miles from the mouth of the river at Chepstow. To make matters worse, there was considerable poaching of spawning-fish in the upper waters, and also the capture of the salmon parr and smolts in all parts of the river. There was a regular market in Hereford for these valuable little fish. In 1874 Mr. Walpole, the Inspector of Fisheries, made the following statement:

"I cannot overlook the fact that there are more miles of freshwater netted on the Wye than on any other river in England and Wales. I believe I may add in the United Kingdom."

Naturally no river could stand such treatment, for the breeding-stock was reduced to an absolute minimum. The question naturally arises as to what steps were taken to transform the Wye from one of the worst into the best river for salmon fishing in England and Wales.

In 1862 a voluntary body, consisting mostly of riparian owners, called the "Wye Preservation Society", was formed with Sir Velters Cornewall as its President. Unfortunately they were not able to do much, and in 1874 it was reconstituted as the "Wye Fisheries Association", and it says a good deal for its members that between 1874 and 1911 they were able to raise by voluntary rates and subscriptions the sum of nearly £9,000. Their main efforts were devoted to renting netting rights and to providing watchers to try and stop some of the poaching, but the results were rather disappointing.

The Wye Board of Conservators, which was constituted in 1866, could do but little, for their income was so small, but in 1908 they obtained a provisional order by which they were enabled to levy a rate on the whole of the Fisheries, and after that they were able to take more drastic action.

In 1902 they passed a bye-law prohibiting the use of the draft-net in all waters above Bigsweir bridge (about 15 miles above the mouth of the river), and again in 1908 a further bye-law *prohibiting all netting* above Brockweir bridge, which, except in very high spring-tides, is the normal limit of the tidal water.

In 1901 the Duke of Beaufort sold to the Crown the whole of his fishing-rights in the Wye and the Bristol Channel, and thanks to his generosity, the Wye Fisheries Association were able to obtain a lease of these rights for a period of 25 years. Therefore, the Association obtained control of the netting-rights in the sea and of most of the rights in the lower part of the river, and, thanks to the above-mentioned bye-law, all netting was prohibited above Brockweir bridge.

The Association then took the very bold step of suspending all netting in tidal waters for three years, 1902, 1903 and 1904. This cost a lot of money and a loan of £5,000 was raised under the personal guarantee of certain members of the Association, making, with the sum of £9,000 previously mentioned, a total amount of nearly £14,000, all of which was spent in endeavours to restore the salmon fisheries of the Wye to their ancient glory.

The final step was taken in 1924, when I had the honour of acting as Chairman of the Board. I am glad to say that I was able to arrange the purchase of the netting-rights which were leased from the Crown. Therefore the position today is as follows:

*In the river all netting in freshwater is prohibited, and all netting in tidal waters is under the control of the Board of Conservators.*

All those who are now lucky enough to be able to fish in the Wye should never forget the great debt of gratitude they owe to their predecessors, and more particularly to that great man, the late Mr. John Hotchkis, who was Chairman of the Board from 1900 to 1906. The present satisfactory position of the salmon fisheries of the Wye is almost entirely due to his wonderful foresight and energy, and to his untiring devotion to the interests of the river.

The question naturally arises as to what was the result of all the money and energy which had been devoted to the improvement of the Wye. There is no doubt that in the early years there was a great deal of disappointment and it was not until 1907 that the rod catches again reached four figures. It was not generally realised that the breeding-stock of the Wye had been so shamefully depleted that it would take at least a couple of generations to build up again a satisfactory stock. We now know that the salmon is a comparatively short-lived fish, and that the majority of those which run up the Wye are not more than four or five years old. Therefore it stands to reason that it would take eight to ten years before we could expect any important increase in the annual harvest, so the full results of stopping netting in 1902-3-4 would not be seen until 1910 to 1914.

Unfortunately for the years before 1905 there are no definite statistics of the rods-catch available. They probably did not amount to more than a few hundred fish per annum. The first reliable figures are those for 1906, namely 468 salmon and grilse. In 1907 the records show a total of 1,424, and after that there was a gradual improvement up to 3,538 in 1913. There were many ups and downs afterwards, partly due to favourable or unfavourable conditions of weather and water and partly the result of variations in the numbers of salmon. The annual rods-catch varied from 1,113 in 1938 to 6,145 in 1927, but the general average is now about 3,000 fish as compared with a few hundreds in the period prior to 1907. In other words one counts the annual-catch in thousands as compared with the few hundreds of former years. It is pleasing to see from the Report that the rods-catch last season (1951) was quite up to the old standard, namely, 3,441 fish weighing 55,315½ pounds, giving an average weight of 18.08 pounds.

Perhaps what will give the best idea of the great improvement in the Fisheries of the Wye is the amount of money received for Rod Fishing Licences in 1910 and 1950, as follows:

	1910	1950
Salmon ... ..	482	2,504
Trout ... ..	271	1,373
Freshwater ... ..	49	928
Total ... ..	£802	£4,805

In the same way the amount spent on bailiffs for watching the river and protecting the fish has increased from £1,267 in 1910 to £3,485 in 1950.

Unfortunately we have no statistics of the numbers of trout, grayling and freshwater fish caught each year, but to show what can be done, in 1931 the members of the Hereford Association weighed in 5,670 fish which included 116 pike, 2,115 chub, 2,381 dace and 746 roach. No doubt many others were caught but not weighed-in, not only by members of the Association but also by other anglers.

In conclusion I must draw attention to one very important fact in connection with salmon and indeed with fish generally, as compared with other articles of food. Practically the only expense incurred is the cost of catching them: nature will do almost everything if allowed to do so. She will provide the parent fish, she will hatch the fry, she will look after them during their early life, and she will send them off to the sea to fatten up for the market. But she insists on one condition. *We must not kill all the geese which lay the golden eggs*, but allow a sufficient number of parent-fish to reproduce their species each year, and so build up the stock which in future years will provide sport for anglers and also supply an important and valuable addition to our national food-supply. It has been the policy of the Wye Board to give nature a fair chance, and in this connection it must be pointed out that there has been no artificial hatching of salmon, of which the supposed advantages are by no means certain.

It is not an exaggeration to say that the Wye is one of the best managed salmon rivers in Britain, and it is an object lesson of how an utterly depleted river can again be restored to prosperity.

It is to be hoped for the benefit of the whole district that the new River Board, when appointed, will continue the far-sighted policy of the old Board of Conservators.

## Some Changes in Status among Herefordshire Birds (1851-1951)

By C. W. WALKER, M.C., M.A., M.D.

IN this county, as elsewhere, the bird population is subject to changes, both in species and in numbers. It has been the care of the Woolhope Club ever since its foundation a hundred years ago to watch and note these changes, and throughout its history it has never lacked ornithologists to observe and record them. To any student of the *Woolhope Club Transactions* from the earliest volumes down to our own times, the names of the Rev. Clement Ley, Mr. R. M. Lingwood, Dr. H. G. Bull, Messrs. G. Horne and T. Hutchinson, the Rev. Cornish Watkins, and, at the present day, Captain H. A. Gilbert, must be familiar. These ornithologists were not only acute observers, but by reporting and recording their observations added to our knowledge, and made it possible for us to compare the bird life of our county as it exists today with its state in 1851. Much can be learnt also from the various local lists recorded by members in the early volumes of our *Transactions*, though it must be admitted that it is not always possible, after this lapse of time, to assess what degree of ornithological proficiency can be attributed to some of the lesser known contributors. Even with this information to guide us, it is only possible to touch the fringe of the subject. We can point to certain species which have vanished from our district within the time under review, and to others now existing here which were quite unknown one hundred years ago: other species have clearly become much rarer with us, and yet others have become much more common. An attempt will be made to deal with these obvious developments, but when that is done, it must be admitted that we have many species, some common, others less common, whose numbers may have undergone in the past century great changes which we are quite unable to compute owing to lack of exact data. It is proposed, therefore, to confine this paper to comparatively few species whose changes of status are salient and, I think, undeniable.

By far the most important, though not the only factor in bringing about these avian changes is human behaviour and activity, either in our direct and purposive treatment of birds, or in the alterations wrought on the bird's environment by changes in human habits. This important aspect of the subject can only be dealt with as regards the direct treatment of our wild birds. A tremendous alteration has come about in this country in the past century. When the Woolhope Club was young, it was the delight of country gentlemen to adorn their halls and stairways with cases of stuffed birds: taxidermists existed in every town, and a rare bird was no sooner recognised than shot. An OSPREY (*Pandion h. haliaëtus*), for example, was shot when hovering over the Wye at Fown-

hope in 1879, another at Llangorse lake in 1884, and another in 1866. When an osprey appeared at Shobdon in 1949 it was watched there for a week, and, when it moved to Whitney it was protected there for two or three weeks, after which it left the county unscathed, no shot having been fired at it. I could give many other examples in illustration of this change of spirit. Throughout the nineteenth century, too, gamekeepers were judged efficient if they could show a "larder" comprising all and sundry birds of prey. At that date the deadly pole-trap was not as yet prohibited by law. In those days young gentlemen from Hereford practised their gunmanship on larks netted in the field at night and liberated from cages by professional "larkers". English wild song-birds were limed in enormous numbers, caged, and exposed for sale in markets and shops: at one time the GOLDFINCH (*Carduelis britannicus*), now so common, had almost become a rare bird in England from this cause. Private collecting of birds' eggs was at that date regarded as a harmless, sane and respectable pursuit. Space need not be taken up in elaborating the change in sentiment and in practice existing at the present day.

Even more profoundly have our birds been affected by human changes not directly intended for their benefit or harm. Every alteration in agricultural methods has affected the birds of the fields. Immense numbers of birds can nest in dense, high hedgerows: none build their nests on barbed wire. Consider the nesting sites afforded by old-fashioned as compared with modern farm-buildings, especially for SWALLOWS, and the loss—also to the swallow-tribe—both of nesting-sites and of insect-diet occasioned by the change-over from stable to garage, from horse to petrol-engine, not only in the country but in towns like Hereford or Leominster. When an oak wood is felled and replaced by a larch plantation the change in bird-life is obvious and inevitable. Of all such "improvements" that which has affected the richness of our bird-life most drastically is the steady increase in the drainage of our countryside, which has slowly eliminated all natural marshes and has dessicated our farm-land, both slopes and valley-bottoms, to an extent undreamt of a hundred years ago. Many other similar factors must occur to all, but space forbids more than a brief glance at this fascinating subject.

On the debit side of the ledger, the loss of certain species has to be recorded, while others have been unrecorded for so long that our right to claim them any longer for the county has become very doubtful. The HONEY BUZZARD (*Pernis a. apivorus*) is the first of our lost Herefordshire birds. According to Dr. Bull it had been "not uncommon some few years since", though very scarce by the time he wrote (about 1885). There are indeed only three records for the county since 1880. One of a pair was trapped at Queen's wood, Marcle, and the occurrence reported in the *Field* for 20th August, 1881. For the second we are indebted to Mr. G. N. Carter of Withington, Manchester, who observed a honey buzzard on various occasions at Cradley in 1883. This bird spent the summer unharmed and was seen to scratch out wasps' nests in order to devour the grubs—their favourite diet. It was also noticed that the bird would run for fifteen or twenty yards before taking off in flight—a trick which is quite characteristic of the honey buzzard, and noted by natural-



ists since the time of Willoughby (d. 1672), who says "this bird runs very swiftly like a hen". The last record is of a honey buzzard's nest in Herefordshire in 1895.

Another dead loss is that of the BLACK GROUSE (*Lyrurus tetrao britannicus*), which was resident and bred regularly, if sparingly, in the Craswall district at the beginning of the period under review. Whether these birds originally came from the north, or over the ridge from the Llanthony valley where they are said to have been introduced by Walter Savage Landor early in the last century, we do not know, but their descendants continued to exist here in small numbers until 1938 when a pair was seen, and 1939 when two hen birds were reported. Since that date there has been no record of black game in the county. Small breeding stocks of black grouse have tended to die out elsewhere than in Herefordshire, in spite of the sportsman's forbearance in sparing the gray hens when shooting. The error is by some supposed to lie in too great a reduction of cocks, as recent research has shown that the lek, or spring tournament of the cocks, requires a number of male birds for its proper performance, and has a deep biological importance as a stimulus to breeding. Another unfavourable factor is the reduction in area of suitable ground; for the blackcock likes neither moor nor forest but the fringe between the two. A third factor in the reduction of numbers may be coccidiosis, a widespread infection among black game. The character of our western borderland probably has not greatly changed in the period under review; nor would an isolated colony be particularly likely to develop and succumb to coccidiosis, an epidemic which is naturally more prevalent where crowded conditions prevail. It may be that a more conservative management of the stock with regard to cocks as well as hens would have enabled the species to survive in the county.

The voice of the CORNCRAKE (*Crex crex*) has almost become a mere memory of elderly people; and most of the young folk of today have never heard this strange reiterated double croak which used to sound on all sides in corn and meadow land on English summer evenings a hundred years ago. Dr. Bull says "the corncrake is very generally spread throughout Herefordshire, and nests are annually mown out in cutting the grass". Had this mowing out been only occasional, the species might not have suffered, but as the great majority of nests were brought to failure in this way, the doom of the species was sealed. Two factors made this destruction of nests inevitable. Firstly, it became the custom to cut hay at an earlier date than was formerly considered correct farming practice, and secondly the scythe had already in the 'nineties begun to give place to the machine-mower, which rapidly became universal. By 1914 it could be said (*W. Trans.*, 1914, p. 6) that "the landrail has, in great measure, deserted our county". It is now doubtful whether we can any longer claim the corncrake as breeding in the county at all. Its voice is still heard each year in May or June, now here, now there, but proof of breeding in the shape of eggs or young birds seen has not been forthcoming for many years. The birds we hear soon fall silent and probably pass on and attempt to breed elsewhere. For us the bird has now become only a rare passage migrant.

The exact status of the WRYNECK (*Jynx torquilla torquilla*) in 1851 is not clear, but it certainly bred in the county at that date and indeed much later. It found a place in Lingfield's list, though not in the Bredwardine list compiled by Blight, nor the Aymestry list of Middleton. The wryneck was known to the Rev. Clement Ley (*W.T.*, 1869, p. 75) but unfortunately he does not comment on its status. An opinion from such an able ornithologist would have been most valuable, but he confined himself to exhibiting to the club two wryneck's eggs—being two of forty which a neighbour had extracted from a nest by taking a fresh egg each successive day! In the Ross area, we are told in 1884, its note was often heard, but this might well be true even though the bird were uncommon, as it is a vocal bird in spring and the call carries well. Seebohm, writing in 1896, calls it common in south-eastern England. "West of the Severn and north of the Trent", he says, "it is much rarer, and is very locally distributed." Coming to more recent years, there is a dearth of Herefordshire records referring to the wryneck. The bird was seen and heard at Breinton in the spring and summer of 1945; and in the same season it is possible that a pair bred in Tarrington parish, but the information was received too late for confirmation. There has been no subsequent Herefordshire record, and it is probable that we have lost this species, especially as it has vanished or become excessively rare of recent years even in those south-eastern counties where it was formerly far more common than it ever can have been here.

Grave doubts exist as to the present status of the CIRL BUNTING (*Emberiza c. cirrus*) in Herefordshire. Lingwood notes occurrences of this bird at Callow in 1852 and 1863. The Rev. Clement Ley claimed in 1869 that the species was native to Herefordshire, not merely an occasional visitor in the winter months. He had seen it in successive springs at King's Cople, but had not found the nest. Dr. Bull records a cirle's nest with eggs found quite near Mitcheldean road station in 1880. The station is very close to the Gloucestershire border, but it is assumed the nest was in Herefordshire—the first recorded in the county. The next nesting record was one at Wormbridge in 1884. It was found in a remarkable manner. A carter in cracking his whip accidentally flicked a hen cirle bunting off her nest in the hedge, killing her in the act. The clutch of eggs is in the possession of Mr. G. N. Carter. Ten nests are recorded in Dr. Williams' catalogue, all found in the north-west of Herefordshire between 1896 and 1909. Mr. Cornish Watkins in his presidential address to this club in 1914 instanced the cirle bunting as a species about which further information was desirable on account of its peculiar distribution in the county. "It is fairly abundant, to my knowledge", he says, "in the neighbourhood of Hoarwithy, but very scarce in the Kington district, and absent in the Monnow valley." In the same year Mr. A. B. Farn recorded the finding at Ganarew of a cirle's nest containing a cuckoo's egg. Captain Gilbert has twice seen nests with young, and once a small winter flock. The late Miss Marsh saw a small flock in her garden at Mordiford in the winter of 1931, and in 1940 Mr. Leonard Smith had an excellent view of a singing cockbird at Staunton-on-Arrow. There are no more recent records. Whether the species continued to exist unnoticed

until 1947, and finally succumbed to that bitter winter, we do not know. Its numbers have been greatly reduced elsewhere—on the Oxfordshire Chilterns, for example—since that catastrophic frost, but it seems likely that the species was already dying out in Herefordshire before that date, and cannot now be claimed as a resident.

The butcherbird, or RED-BACKED SHRIKE (*Lanius c. collurio*), was not uncommon in Dr. Bull's day in particular localities throughout the county. Unfortunately this is not true today. The species has suffered a marked decrease in northern, western and parts of southern England, and in Wales. In a recent article (*British Birds*, 1951) on this shrike J. H. Owen deplores its decrease on the Shropshire border. In our county the bird bred annually in various places twenty years ago. A pair nested in Tupsley parish to my knowledge each year from 1931 to 1946. In 1947 the birds were absent, and for four years neither the writer nor any bird-lover of his acquaintance set eyes on a butcher bird in the county, and it was feared that its name would have to be added to our list of lost species. Then, in July 1951 a pair was discovered nesting undisturbed in the city of Hereford itself by Mr. F. C. Miller. Fortunately their young were reared successfully, and the evil day is postponed, but enough has been said to show that our claim to the species is becoming a precarious one.

The case of the STONECHAT (*Saxicola t. hibernans*) is—at the moment, at any rate—even worse. This small but conspicuous bird of gorse commons had become rarer with the years. This may have been due to the increase in the practice of burning gorse, but the species survived in small numbers in the county until 1947, when the great frost exterminated it all over England, except in some coastal districts where a few managed to survive. Here we have a natural cause for the species' diminution, and one that leaves hope for the future. Given an uninterrupted series of winters of more normal type, the stonechat should gradually revive in numbers, and should in time spread inland to re-people all suitable localities. When one considers the rapidity with which the goldcrest and long-tailed tit have reasserted themselves after their similar temporary eclipse by the great frost of 1947, such a hope would appear to be justifiable in the case of the stonechat.

Gilbert White of Selborne, writing about 1770, says that the HAWFINCH (*Coccothraustes c. coccothraustes*) is rarely seen in England, and only in winter. Bewick (1801 edition) shares this view. After that date it became known as a regular breeding species throughout England, and its numbers slowly increased during the nineteenth century. Dr. Bull calls it a regular winter visitor to some localities in the county, a few remaining to breed. At that time—the eighties of last century—its visits to our neighbouring Welsh counties were exceptional, though it became well-known as a breeding species there at a later date. Most country-bred folk can remember seeing hawfinches among the peas, or perhaps caught in the pea-nets; and many have found its nest—so often built in old high garden-hedges. But these memories are of a time several decades ago, and a hawfinch's nest is the rarest find in Herefordshire today. The bird itself is very seldom seen.

Sadder still is the reduction in numbers of the BARN OWL (*Tyto a. alba*)—a reduction which is nation-wide in extent, and very great in proportional numbers. This harmless and most useful species was the object of relentless persecution with gun and trap by gamekeepers and farmers alike until our own times. It is to be hoped that the ignorant prejudice which dictated this slaughter has now died out—even in rural Herefordshire. To judge by old gamekeepers' murderous lists the bird must have been very common a hundred years ago: today there must be a number of parishes in our county which cannot boast even a pair of barn owls. Even with the greatest human goodwill, the species cannot be expected ever to achieve its former abundance, for its favourite nesting-sites—ancient hollow tree-trunks and the dark recesses of old rafted barns become steadily fewer with the years. Thus, even though man's hand is no longer raised against it, his changing habits are unfavourable to the species by adversely affecting its environment.

The LAPWING (*Vanellus vanellus*) was looked upon by Dr. Bull as a very common bird. "In the broad valley of the Wye", he writes, "in April and May the women and children seek their eggs for sale". As long as there was rough boggy land and moist permanent pasture in the valley bottoms to give cover to the nests and provide the natural diet of the species, taking the eggs and shooting the birds merely kept a flourishing species within bounds, but when drainage became more efficient, and the natural strongholds of the species more restricted, the bird had to nest more and more in short cover on tilled land, and the eggs, being easily found, especially in the early part of the season, seldom escaped. The robbed birds attempted later nests and no doubt more of these escaped being robbed, the crops or grass now affording better cover, but this advantage was counterbalanced by the lateness of season which entailed drying up of the ground and reduction of food supplies. Thus the chances of survival for the young peewits of these late broods were still diminished. We are accustomed to seeing peewits in fields, but we should not forget that the bird was evolved and adapted to a life in low-lying marsh or boggy hill-country, and quite unsuited to dried-up pastures and plough. Such types of terrain cannot be expected to provide the natural of limicolous fledglings, and their survival rate has suffered accordingly. It has been noticed by different observers that a field in which lapwings have been accustomed to nest will not be used by them after it has been treated with basic slag. In view of the widespread use of this chemical on just the sort of land which the bird found favourable to breeding, this in itself must have been responsible for a considerable reduction in the species. From these causes our breeding-stock had become greatly reduced by 1946, but the severity of the weather in the first three months of 1947 came close on exterminating it. In that spring and in 1948 it was the rarest event to see its tumbling flight or hear its spring call. It is now slowly increasing, but its handicaps are heavy, and it will only be as the result of effective protection of the bird and its eggs, and much goodwill, that we shall still be able to class it as a moderately common bird.

So far species lost to us or reduced in numbers have been dealt with. Let us now consider the opposite tendency, for the picture is not wholly



gloomy, and there are a number of species which can boast a marked increase in numbers since early Woolhopian days.

Although the COMMON BUZZARD (*Buteo b. buteo*), like all our birds of prey, was persecuted by gamekeepers with the utmost assiduity, and had in consequence vanished from most of England by the end of the nineteenth century, it still existed among the rocky sea-cliffs of Wales and Cornwall, and, when some measure of toleration was again accorded to it, it spread from those strongholds to repopulate inland Wales and the West Country. Since the 1914-18 war, when the absence of gamekeepers on service gave it a chance, its increase and spread over Herefordshire have been noteworthy, and say much for the toleration of our farmers and land-owners. Over a large part of our county this great eagle-like bird may be seen soaring over almost any suitable wooded hill. Indeed, if the buzzard is seen to be persistently absent from any such area, it is safe to conclude that the practice of shooting or trapping these birds is there still in vogue.

The same factors have brought about the similar reoccupation of our county by the RAVEN (*Corvus c. corax*), another large bird to which many more crimes and evil practices have been imputed by its enemies than lie within the compass of the bird's habits. Although it was perhaps never completely banished from the county, there were probably years when the raven's foothold in Herefordshire was extremely precarious. J. W. Lloyd, the Kington ornithologist, states—in 1869—that "a pair of ravens have bred for many years on Stanner Rocks, but I have been unable as yet to obtain their eggs". A note in our 1895 *Transactions* deplores the rarity of "this grand bird" and says that the Stanner Rocks' nest and that at Symond's Yat were deserted "when the railways were being made at those places". So much for our borderland ravens. The central parts of our county were for long quite ravenless and the *Transactions* are silent with respect to this species for many years. In six years at Bredwardine (1864-1869) the Rev. Robert Blight saw only one raven—he would see ravens every day if he lived at Bredwardine now! Clement Ley, when a boy in Herefordshire, had been shown many "raven trees" of the past, but had never met with a nest in a tree in all his constant rambles. "Is it true", he asks, "that they do still breed upon trees in Herefordshire?" In 1924 Capt. H. A. Gilbert reported the finding of a raven's nest in a larch-tree in the central part of the county, and in the twenty-five years which have elapsed since then the raven has slowly increased, and may now be said to have spread right across the county, though it must be admitted that there is a large area north-east of Hereford where no nesting-place is known and the bird is seldom seen. With us the bird is almost entirely a tree-nester, and seems to prefer conifers, though by no means exclusively, as it has used Scots fir, larch, stone pine, ash, alder, oak, Spanish chestnut and sycamore trees in this county within the last few years.

Another very gratifying increase of numbers and of range is that of the CURLEW (*Numenius a. arquata*), which has enlivened for the last thirty years those tracts which had formed the habitat of the lost corncrake and of the much reduced lapwing. In his list compiled in 1863 Lingwood

remarks of the curlew: "Very rare. Seen in the flesh at Baker's, gunsmith, Hereford; whether killed in the county(?)" In the Rev. Robert Blight's list of birds seen by him at Bredwardine in the six years 1864-9—obviously a careful and exhaustive list including 92 species—the curlew is not mentioned. Two curlew's eggs taken at Bradnor were shown at a meeting of the club in 1882, and aroused great interest. Dr. Bull, while mentioning that they breed on the Black Mountains, states that "they rarely visit the centre of the county". Mr. Cornish Watkins, in his presidential address (1914) was the first to record an increase in the curlew's range in Herefordshire, and later reported its first recorded nesting on the Lugg meadows in the following spring. In the thirty-six years which have elapsed since then the curlew has colonised all our open valley-lands in spite of the fact that this area has through drainage become drier rather than moister than it was fifty years ago. This spread has advanced from the north-west to the south-east of the county, and did not stop here but continued over Worcestershire where the bird has now nested regularly since 1920. The annually recurring thrill of the return of the curlews in spring—a thing of wild beauty both to eye and ear—was unknown to the founders of our club, but familiar to our generation—nature's generous compensation for the loss of the corncrake.

In the century we are reviewing remarkable increases have taken place in the numbers of certain British sea birds, including most of the GULL species. Hereford has been little affected by these events, as only one species of gull—the black-headed (*Larus r. ridibundus*)—breeds in the county. As regards winter visits by other gull-species, the early records are difficult to interpret, and contain statements which are certainly inaccurate. In 1884 we read such statements as "among the regular occurrences are the kittiwake (*Rissa t. tridactyla*) and common gulls"; "common gull (*Larus c. canus*) occasionally forwarded (to the taxidermist) in the winter season"; "Kittiwake . . . by far the most numerous of the gulls seen in Herefordshire"—all made by Ashdown in 1894 and which cannot be correct in the case of the kittiwake. This is our one really pelagic gull, shunning land and spending the winter in mid-Atlantic. It is quite likely that the common gull appeared daily in the county in the winter months in those days, as it does today, though it is probable their numbers have increased. A note in the same article stating that "only one lesser black-backed gull (*Larus fuscus graellsii*) had been seen" is remarkable in view of our present experience, for there is hardly a day in the year when one or two of this species may not be seen about our river-valleys. The black-headed gull was little known to early Woolhopians. It is not in Lingwood's list of Herefordshire fauna (1863), and Mr. Blight saw a flock only once in his six years at Bredwardine in the sixties. There had been a great and general decrease of this species in Britain in the nineteenth century, but a widespread increase began at the end of the century and has continued. Radnorshire was colonised in the first decade of this century, first the Mawn pool, then Rhos-goch. The Woolhope Club visited the latter place in 1911 and "at least 50 or 60 of the gulls were seen and several nests . . . visited". When the club visited Llanweir Pool in 1928 "thousands of black-headed gulls were nesting" there,



and the date of origin of that colony was said to be only three or four years prior to the visit. At present it would be hard to say which—Llan-wefr or Rhos-Goch—was the more flourishing community, thousands of birds summering at each of them. Herefordshire was colonised about 1930, and gulls have nested especially in the bogs and moors of the Teme valley in the extreme north of Herefordshire in various years since that date, but the numbers have been very uncertain, depending on the wetness of the season and the efficiency or otherwise of the drainage of these low-lying lands. The year 1952—a wet one—encouraged them to nest in at least three localities in some numbers, but there have been years in which successful nesting of black-headed gulls in North Herefordshire was unproved.

There is little doubt that WILD PIGEONS of all three species—wood-pigeon (*Columba p. palumbus*), stock-dove (*Columba oenas*) and turtle-dove (*Streptopelia t. turtur*)—have greatly increased in the county in the last hundred years. These islands by virtue of increase in agricultural activity became more attractive to doves of all sorts from the eighteenth century onwards. Indeed, had we been considering our county's ornithology not 100, but 200 years ago, the wood pigeon would have been the only wild dove breeding in this county, for the stock dove was a winter visitor to southern England only and had not been recorded in the breeding season, while the turtle dove, a summer visitor and breeding then as now, was also restricted in its range to the extreme south of England. Gilbert White, writing to Thomas Pennant in 1771, states that "the stock dove is the last winter bird of passage that appears with us, and is not seen till towards the end of November. . . . The ring dove stays with us the whole year". He mentions the turtle dove several times in the *Natural History of Selborne*, and we may conclude that it was already fairly common at that time in Hampshire and Sussex. In Bewick's *British Birds* (1799) it is said to be "fairly common in Kent". We know that it had arrived in Herefordshire in some numbers by 1860, and Dr. Bull considered it "one of those birds whose numbers seem to be increasing year by year". Few would complain of the increased numbers of stock-doves or of turtle-doves; but the case of the wood pigeon is different. Its size, boldness and phenomenal numbers have rendered it generally obnoxious, and the only voice raised in its favour is—its own! For the sake of its gentle tones, continuing in high summer when our songsters have become mute, one would wish that the case against the ring-dove were less damning.

There is today no difference of opinion as to the presence of the PIED FLYCATCHER (*Muscicapa h. hypoleuca*) in the county, both as a passage migrant and as a local but widely scattered breeding species in small numbers. It is certain also that its occurrences have been more frequently reported of recent years than formerly, and that it is now known to breed sparingly in many parts of the county, whereas it was formerly reported almost exclusively from the western parts. The Rev. Clement Ley "noticed it in different and very diverse localities in the western part of the county". Dr. Bull saw a pair at Moccas in 1873, and judged them to be breeding. Warde Fowler remarks (*W. Trans.*, 1888, p. 257): "Even

if he does not choose to stop and spend the summer here, I should have expected him to call on his way into Wales"—but this is precisely what the bird does, and a number are seen here on passage. In addition its nesting range appears to have increased of late years. In 1889 Dr. Williams found the first pied flycatcher's nest in Herefordshire to be recorded (*W. Trans.*, 1890, p. 49); nowadays it is to be found nesting in various districts, and there is little doubt that it would become a common bird with us if judiciously encouraged by the provision of proper nesting boxes in suitable woodland and copses.

The remaining species—four in number—to be dealt with are examples of clear gain for the county bird lists. If only those early Woolhopian bird-lovers could hear of these additions what pleasure it would give them!

The FRENCH or red-legged PARTRIDGE (*Alectoris r. rufa*), a southern European species introduced into England about 1770 in East Anglia, was established in Gloucestershire, but not in Herefordshire, at the date of the foundation of the Woolhope Club. The French partridge is not mentioned at all in Lingwood's long and exhaustive catalogue of Herefordshire birds (*W. Trans.*, 1863, p. 36). It was not seen at Bredwardine by Blight in the six years 1864 to 1869, is not mentioned by Woodhouse (*W. Trans.*, 1870, p. 26), and does not occur in Middleton's list (*W. Trans.*, 1873, p. 82). Dr. Bull says it is "as yet a rare bird in Herefordshire, and the instances which have occurred here seem to have been wanderers from Gloucestershire, where they are reported to be on the increase". His earliest record is of a bird shot at Fawley in 1864. Mr. Henry Southall, in *Some changes in the natural history of Ross in the past thirty years* (*W. Trans.*, 1884, p. 225), says "the red-legged partridge is on the increase in Gloucestershire, and instances have been more frequent of late of its presence in this county". Hutchinson (*W. Trans.*, 1889, p. 219) in his list calls it "an introduced species, and now a resident—breeding in the county". Its occurrences, confined at first to the neighbourhood of the Gloucestershire border, spread steadily over the eastern half of the county. It is common—in fact, too common at Canon Frome in the east; is always present but in small numbers on such estates as Perrystone and Brockhampton, and on farms near Hereford in the centre; is absent from certain estates west of the Wye, though common on others as far west as Hay and as far north as the Leominster district. My own impression is that the species is still slowly increasing, but whether this is a matter for congratulation or not is rather doubtful, as our own English bird is likely to suffer a proportional reduction in numbers.

It is surprising to find the LITTLE OWL (*Athene noctua vidalii*) mentioned in the Rev. Robert Blight's list of birds seen at Bredwardine 1864-9, for at that date the little owl was really extinct as a British bird, and the very occasional specimen seen was no doubt a vagrant from abroad. Sixty years elapsed from the foundation of the club before the little owl was again mentioned in the *Transactions* as occurring in Herefordshire. In the meantime several attempts had been made to introduce the species to this country from Holland, especially, in the 'eighties, by Lord Lilford at Oundle in Northamptonshire. These birds first bred in

1889, and the species became common in that district by the beginning of this century. The writer well remembers having the bird pointed out to him as a new and foreign introduction near Peterborough when he was a boy in the early years of this century. The first Herefordshire record was of one seen at Acton Beauchamp in 1911, but it does not seem to have been recorded again until 1918, when the late Rev. W. B. Glennie reported having seen one at Breinton. It was generally distributed in the county by 1920, and by 1935 had become extremely common. After that date its numbers diminished slightly until 1947, when further large numbers perished in the great frost. In that bitter time the bird was commonly to be seen sitting benumbed and motionless on the snowy ground close to road or paths, unable to move away from the feet of passers-by, and doomed to perish either of cold and starvation, or under the claws of the next cat to pass that way. Even so, the little owl is by no means uncommon in the county today.

Another Herefordshire bird of the present day which was unknown to the early ornithologists of the Woolhope Club is the BRITISH WILLOW TIT (*Parus atricapillus kleinschmidtii*). It was unknown to them because at that date this bird was not known to exist. In 1897 it was realised that the British willow tit, though resembling the marsh tit very closely, was nevertheless a distinct species, and present in very many parts of these islands. On looking closely at a willow tit its head instead of being a glossy blue-black—as in the marsh-tit—is seen to be of a dull sooty black. The two species differ in their respective songs and call notes, and in their nest-building habits. We now know that the willow tit breeds in our county, but the records are very few, and more observations are badly needed. Anyone finding the haunt of a bird of marsh-tit type in spring should try to observe the nest-making. The willow-tit is fonder than the marsh-tit of excavating its own nest in a tree stump, and takes care to carry away the resulting chips. On examining the nest later—best done after the young have flown—the lining is found to be very much less in quantity, a mere pad, in the case of the willow-tit. The marsh-tit makes a more bulky nest, and uses a natural hole, requiring no excavating. Even so it is difficult to be sure of distinguishing the two species, and it is not surprising that they were confused by British ornithologists until the very end of last century.

The fourth and last new addition to the Herefordshire bird list is the MARSH WARBLER (*Acrocephalus p. palustris*), a small and slender brown bird, near relative of the reed and sedge warblers, both of which are found in the county. In 1851 it had not been accepted as a British bird, and even twenty years later Professor Newton in the 1871 edition of *Yarrell* only goes as far as to admit that "the marsh warbler is said to have occurred several times in England". In Dr. Bull's book it is mentioned as a "rare summer visitor to a few southern counties including Gloucester and Worcestershire". It was first proved to nest in the latter county in 1892. At the present day the *Handbook of British Birds*, our most authoritative text-book, says it is only known to breed regularly in Worcester, Gloucester, Somerset, Dorset, Sussex and Kent. To this list Hereford must be added as it now breeds annually in our county. It was

in 1938 that the birds were first seen and heard singing in two small secluded areas in the county, and four nests were found in June of that year. Since then the birds have returned each spring and a few pairs have nested every year. A few years ago extensive drainage operations bade fair to ruin one of their favourite haunts, and the prospects for the future appeared gloomy. But time and nature are great healers—"naturam expellas furca, tamen usque recurret"—and the little bird has returned to the area, as well as to some other localities where it seems to find the peculiar environment suitable to its needs. It is a shy little bird and remains hidden for the most part in the dense herbaceous jungles in which it chooses to live, but anyone who has listened to its song will agree that for charm and variety it is a rival of such masters as the black-cap or nightingale. It is hoped sincerely that it may become commoner in this county as the years go on, and add another charm to early summer days in our river-valleys.

Such is the balance sheet in so far as the writer is able to give it. On the one hand we have the loss or reduction in numbers of the following species: honey buzzard, black game, corncrake, wryneck, curlew, red-backed shrike, stonechat, hawfinch, barn owl and lapwing. Against this we must place the gain or improvement in status of French partridge, little owl, willow-tit, marsh warbler, common buzzard, raven, curlew, black-headed gull, the pigeons and the pied flycatcher. A study of these changes is of little value in itself unless it leads us to a consideration of the causes underlying the rise or decline of a species' fortunes. A knowledge especially of the causes which have led to the loss of a species may help us to take measures which will be of value in preserving other species from a similar fate. In these efforts to protect our county's birds we have one great advantage over the bird-lovers of a century ago—the change of heart towards all wild life and towards our birds in particular which has been mentioned already. The founders of the Woolhope Club, being Victorian in their upbringing and their outlook, most certainly believed in "progress". In an age when this concept is derided by many, it is pleasant to find that their philosophy, in the sphere with which we are concerned, was not at fault. It is the steady influence exerted for a century by nature lovers, united in such societies as our Woolhope Club, that has educated the whole nation, and has changed our whole attitude to our country's wild life from one of destructive carelessness to one of responsibility and preservation.



## The Mammals of Herefordshire

By J. E. M. MELLOR, M.A.

THIS account of the mammals of Herefordshire leaves many gaps to be filled by others observers, but I hope that it will stimulate greater interest in them. For early notes I am indebted to the Victoria County History<sup>(2)</sup> and the Woolhope Club *Transactions*<sup>(1)</sup>, for those collected since March 1951, when this survey began, to several observers whose names appear in the text. Two areas have not been covered, 1, a sector formed by a line from Richard's Castle, through Leominster, to Hereford and thence, through Withington, Ocle Pychard, Much Cowarne, Bishop's Frome and Acton Bishop to the county border; 2, south of a line from Kentchurch to Upton Bishop. As far as possible, Sandar's<sup>(3)</sup> trinomial system has been used.

Since I have been asked to omit prehistoric remains of wild animals and have not dealt with Man, I have been concerned with only five of the seven orders of the Mammalia: and, though bats belong to the *Cheiroptera*, since the British species are all insect-eaters, I have grouped them with the *Insectivora*, thus making only four groups. Twenty-nine species still definitely exist in the county, and five more—the Harvest Mouse, the Marten, the Bank Vole, Daubenton's Bat and the Greater Horseshoe Bat—may do so though there are no certain recent records of either.

### GROUP 1 — FLESH-EATERS — CARNIVORA

THE FOX (*Vulpes vulpes crucigera*) found in Herefordshire, a subspecies of the type *Vulpes vulpes vulpes*, is more or less common throughout the county. There are records<sup>(1)</sup> that five small cubs were found on the bare soil at one of the highest points of the Black Mountains (1943); an earth was found in Bary Wood, Tupsley, within the city of Hereford, by Dr. C. W. Walker on 18th January, 1936; and, at Whitsuntide 1912, three cubs were discovered in a hole in a large lime tree at Street Court, Kingsland. The lowest limb of the tree was eight feet and the litter thirty feet from the ground. A bank by the tree was torn and scratched where the foxes had run and jumped against it in order to reach the limb. Ten days later the cubs had gone and barn owls were in occupation of the hole. Remains of a fowl, three hen pheasants and a hare were found there.

On 5th June, 1951, Miss M. E. Colley wrote to say that foxes were abundant in the parishes of Llancillo and Walterstone because of the cover provided by corn growing and that they were not at all nervous and came into the open near dwellings in daylight.

THE OTTER (*Lutra lutra vulgaris*) appears in Lingwood's list of Herefordshire mammals (1840) and was often seen near the Wye bridge at Hereford between 1893 and 1936. I have heard of some at Clock Mill, Clifford, and saw one at the Lion's Den, Bredwardine, in the 1940s.

I have no precise information of the present distribution of the otter in the county but presume it to be fairly numerous in our rivers.

THE BADGER (*Meles taxus*, now *Meles meles meles*) seems to be fairly common and well distributed in the county. Rusty-rufous coloured specimens are found occasionally. Some people accuse the badger of killing lambs and, in consequence, it is still persecuted in some districts. Lamb bones, turned out of a badger's set, have been mentioned to me as evidence of guilt. Badgers do not take such things into their sets. The culprit was probably a fox, sharing the badger's home, and the badger had turned out the bones when cleaning out the set.

A keeper stated that, when employed by the Pest Control, a farmer complained to him that he lost a lamb every night and blamed the occupants of two sets. The badgers were gassed but lambs continued to be killed. The body of one of these lambs was poisoned; a local sheep-dog died that night and the killing ceased. The keeper was certain that only an occasional 'rogue' badger took to lamb-killing and said that it was easy to distinguish between the work of badger, fox and dog. A badger opens the carcass and merely eats the liver; a fox nips the back of the neck; a dog worries the throat and the sides of the neck behind the ears.

William Rook, a mason on Moccas estate, told me that badgers will not take lambs which have been smeared on the head with a spot of tar; that farmers about Clifford and Bredwardine used to use this preventive and that one, in Clifford, still does. Rook also believes that 'rogue' badgers take lambs only when rabbits are scarce. Badgers used to visit his orchard in Clifford to seek for pig-nuts (tubers of an Umbellifer, *Conopodium denudatum*) and, in so doing, turned up the turf to such an extent that the ground looked like a ploughed field. The visits were stopped by hanging an unset steel trap over the badger path where it entered the orchard. An old bicycle chain or other steel article, used in the same way, will stop them.

Another form of damage for which badgers are held responsible is the making of holes under wire netting surrounding young tree plantations, thereby letting in rabbits which destroy the trees. If the method of prevention used for the orchard could be successfully applied to tree plantations, an animal which not only helps to control rabbits but greatly benefits the fruit-grower by destroying countless wasps' nests would be preserved.

In February, 1884, a pair of badgers was taken at Underhill Farm, Foy; the larger weighing 34 pounds. There were then many in the Carey, in Brockhampton woods, on the other side of the Wye. Others were taken that year in Stoke Edith wood. The Bach Camp and hills within half a mile were noted places for badgers. In 1871 they were stated to be getting scarcer. In 1944 W. D. Burnett found a large male dead in a small wood at Oakland, Bodenham road, Hereford, and in 1950 I found a dead badger at the top of Moccas Park which apparently had been shot in the hind quarters about ten days previously. Not far away was a recently dug out wasps' nest.

There is a set near Arthur's Stone but the tenants were killed during the last war, in the belief that they killed lambs. Mrs. Luck said there



were badgers above the Lion's Den, Bredwardine, in 1948 and 1949. H. Meredith states that they were once plentiful in Cusop, but that a few years ago a number were killed and none had been seen there since until about 1951. They are in Brampton Bryan; Woolhope; one was killed on the road near King's Acre; Keith Mason reported a set near Upper Ledbury Road, Hereford, and William Edwards says there are possibly two pairs in Whitney.

Brigadier S. T. Polley reports badgers from Mansel Lacy, Wormsley, Bridge Sollers and Mansell Gamage. Colonel T. W. M. Johnson says there are plenty in Much Marcle; Miss M. E. Colley reports sets near Wern Farm and possibly on Mynyd Hydyn, in the Llancillo and Walterstone areas. Dr. Langdale-Smith says they are increasing at Westhide.

Badgers have given their name to Brockaly (Dilwyn), Brockbury (Colwall), Brockhampton, Brock Hill (Colwall), and possibly to Brobury.

THE MARTEN (*Martes martes martes*), sometimes called the Pine Marten and, at one time, *Mustela martes*, is almost extinct in the United Kingdom. R. M. Lingwood called it *Mustela foina* in his list of Herefordshire mammals of 1840, but this name is given to the Beech Marten which has never been killed in England. In the Elan valley, Radnorshire, the marten had been common, twenty having been trapped in one year; but by 1896 very few were left and trapping was stopped. One was observed at the White House, Hereford, in 1851; three at Whitfield, St. Devereux, in 1860; one in St. Margarets in 1861; one at Kentchurch in 1866, and one was seen crossing the Dore over a fallen tree with a rat in its mouth in 1884.

There are three uncertain reports of the marten in Herefordshire in recent years. One from below Corras bridge at Kentchurch on 29th May, 1939; Captain Jenner believes he saw one in a trap in a wood on the Abergavenny road in 1946 or 1947 (this is fairly certain); W. A. R. Wordsworth and his daughter saw an animal working rabbit holes a hundred yards upstream from Lugwardine bridge in May, 1950. Miss Wordsworth later unhesitatingly picked out the marten in the Hereford Museum as the animal they had seen.

THE POLECAT (*Mustela putorius putorius*, formerly *Putorius foetidus*); local names, Fummet, Fitch, Fitchuke, Fitchet. R. M. Lingwood, in 1840, said that the Polecat was common in Herefordshire. By 1908 it had, apparently, become rare in the county, for Mr. Pilley wrote <sup>(2)</sup> that the last he could hear of was killed near Lugwardine about eight years previously. By 1919 it seems to have become slightly less rare. In that year one was caught at Llangoed, since when four or five were taken annually either in the county or on its border. There are records from Adforton (1919), New Radnor (1920), Lyonshall (early June 1926), Staunton-on-Arrow (4th October, 1927). By the 1930s there was a definite increase; Peterchurch, two in December and one in Letton in October (1938); Woolhope (1939); Windle Park, Hay, Whitfield Estate and five in Stoke Edith (1943); Croft Castle (1944); on the Woolhope-Putley boundary, in Pixley, Cusop, and Peterchurch (five) (1946); Dorstone Hill (1948/1949); Bredwardine, Peterchurch, Bridge Sollars, Clehonger, Garway, Whitefield and the Letton-Kinnersley boundary (1950). The Dis-

tribution Map gives further details and it appears that polecats re-entered the county from the Welsh border. There is an account of the red polecat of Cardiganshire in the Woolhope *Transactions* for 1918.

THE STOAT or Ermine (*Mustela erminea stabilis*, formerly *Putorius ermineus*) has been reported from all over Herefordshire and white ones and partially white ones have been seen occasionally. This seasonal change in colour of the stoat is due to change in the colour of the hair, not to a change of coat, and may take place 48 hours after snow has fallen. Perhaps one per cent. change colour in this county; all do in Scotland and, on Ben Nevis, stoats remain white all the year.

Some curious incidents have been recorded. A stoat was seen to chase a hare in Bridge Sollars for two miles before giving up <sup>(1)</sup> 1939). The Rev. H. Somers Cocks saw a full-grown rabbit and a stoat going up a rise in Eastnor Park from opposite sides. The rabbit reached the top first and charged the stoat, bowling it over. In 1936, I saw a stoat hunting a rabbit in Bredwardine. It jumped into the air, turning a complete somersault and then continued the chase.

THE WEASEL (*Mustela nivalis*, once *Putorius nivalis*) appears in Lingwood's list and is still widely distributed in the county but may be less numerous than the stoat. Dr. Walker noticed a great increase during the rabbit plague of 1935, particularly at Eaton Bishop and Brinsop. On 10th September, 1950, Miss Robinson saw seven buzzards circling low near The Poston, Vowchurch. Three carried prey: two dropped their burdens which proved to be weasels, each dead and caught by the head. Mr. Gavin Robinson said there was then a plague of weasels at The Poston. In the early 1940s a weasel entered the kitchen at The Prospect, Bredwardine, and was unfortunately killed. Doubtless it had been hunting field-mice or rats right up to the back-door—a useful work.

Mr. Pilley reported having seen white ones <sup>(2)</sup>, but Sandars <sup>(3)</sup> says albinos are rare and that weasels do not assume white coats in this country.

#### GROUP II — INSECT-EATERS — INSECTIVORA AND CHEIROPTERA

THE HEDGEHOG (*Erinaceus europaeus europaeus*) is well distributed throughout the county and often falls a victim to cars on the roads. The Church Wardens' accounts at Staunton-on-Arrow and at Pembridge show payments of twopence a head for hedgehogs; probably owing to the fallacy that they sucked cows' udders. J. B. Pilley said that it was considered unlucky to see one near a house.

THE MOLE (*Talpa europaea*) is found everywhere in Herefordshire from the valley bottoms to high up on the slopes of the Black Mountains. At Putley Court the average over twenty-five years was rather more than one to the acre. Colour variants have been reported. In 175,000 skins received by a local furrier between 1900 and 1905 variants were estimated to be one in every 5,000. A dove-grey male with a broad orange band on its belly was taken at Moccas in 1952. The mole is the host of a very large flea, *Hystrichopsylla talpae*, Curt.

THE COMMON SHREW (*Sorex araneus castaneus*, formerly *S. araneus*): local name, Artishaw. This shrew is well distributed in the county. It is

often found dead. Being easily killed by a tap on the snout, dogs and cats destroy but never eat it and its life-span is only about eighteen months. Shrews are also food for owls. Dr. Walker found a high proportion of their remains among castings of a barn owl. Shrews use the runs of field-mice and of voles; are very voracious, needing four times their weight in food every thirty-six hours, and quickly die if unable to feed regularly.

Many superstitions have cast a shadow over this useful little animal, doubtless because of its voracity. Edmund Sandars<sup>(3)</sup> tells a story of catching two short-tailed voles and a shrew in a box trap. When opened the box contained a live shrew and two dead voles, much chewed and still being frantically eaten.

THE PIGMY SHREW (*Sorex minutus minutus*) does not appear in Lingwood's list of 1840, and even in 1914 was not thought to have been recorded, though W. E. de Winton considered it to be common and found its remains in owl pellets<sup>(2)</sup>. On 21st November, 1917, one was found dead at Staunton-on-Arrow which measured scarcely 1½ inches and weighed 30/40 grains. The British Museum had one from Graftonbury, and one was found dead in Ross in 1917<sup>(1)</sup> 1914, 1917). Dr. Walker found one at Kington in 1935 and another at Tupsley. The head and body of the last measured 2 inches and the tail 1½ inches. One was found dead in Bredwardine in March, 1953. Its head and body measured 52 millimetres, its tail 39 millimetres.

THE WATER SHREW (*Neomys fodiens bicolor*, formerly *Crossopus fodiens*) was recorded by Lingwood (1840) at Mordiford, Lyston, and the Lugg meadows. Other records are: Blakemere before 1867; Breinton Court, November, 1906; two at Staunton-on-Arrow in December, 1917, and in 1918; Ross, 1918; Lyonshall, 1930; Hampton Bishop, swimming near the bank of the flooded Wye, 1935; another on Pentre Farm, Bredwardine, April, 1952. They were said to have been common once in the Square Pool at Kentchurch.

#### THE BATS — ORDER CHEIROPTERA

THE PIPISTRELLE or Common Bat (*Pipistrellus pipistrellus*). Lingwood captured one on the wing in 1839. The Victoria County History (1908) states that there was no exhaustive list of Herefordshire bats in existence but that most of the British bats might be expected. The presence of the Whiskered Bat (not yet recorded) and of Natterer's Bat was presumed. The Pipistrelle is common and can often be seen in daylight, even in winter in mild weather.

THE NOCTULE or Great Bat (*Nyctalus noctula*, formerly *Pterygistes noctula*) has been recorded from Tupsley, Burghill, Bishopstone and Sefton Court. Lingwood recorded forty-seven in a hole in an ash tree at the last-named place. Dr. Walker saw forty come from a hole in a pear tree at Tupsley at about 7.15 (G.M.T.) on 29th April, 1935, and, in 1937, saw two at Burghill. Mr. Charteris saw one at Bishopstone in 1941.

NATTERER'S BAT (*Myotis nattereri*). Dr. Walker reported that one was caught by a cat in Three Elms Road, Hereford, on 7th December, 1938;

another was found in Moor Park road in 1939<sup>(1)</sup>. In the *Transactions* for 1939, a letter from T. C. S. Morrison-Scott of the British Museum is quoted. He seems to have been unaware of the 1938 record but thought that this bat should be in Herefordshire, since it occurs all round. He added that the diagnostic feature is the fringe of hairs round the tail membrane. This bat is gregarious, sharing summer resting-places with other bats, near water, over which it feeds whilst hovering. It swoops at insects, but usually picks them off the surface of water, without dipping the head, and also picks them off trees. Its flight is slow and steady without zigzags, and it carries its tail, unlike all our other bats, straight out behind except when pouching insects.

THE LONG-EARED BAT (*Plecotus auritus*) is mentioned by Lingwood, without locality, in 1840. W. E. de Winton is reported to have said that it was plentiful in the county and Victor Murray records it from Adforton, Burrington, Covenhope, Elton, Aston, Paytoe, Shobdon and Uphampton. Dr. Walker reported one in a cow-shed at Checkley in 1944, and one was reported from Brobury in October, 1951. It is mainly nocturnal and is found in trees. When feeding, it flies about the outer branches and takes insects from the leaves, either alighting or hovering like a hummingbird to do so. When moving to another tree, it flies straight and swiftly. When travelling it drops to within a few inches of the ground and zigzags.

DAUBENTON'S BAT (*Myotis daubentonii*), although found in almost every county in the British Isles, has been recorded only once from Herefordshire. T. E. Kelsall took one at Hereford in 1888. It frequents woods, sheltered streams and lakes over which it skims low and swallow-like, sometimes hovering with quivering wings.

THE GREATER HORSESHOE BAT (*Rhinolophus ferrum-equinum insulans*). W. E. de Winton is reported to have said that this bat was plentiful in Herefordshire, but no actual specimens have been recorded.

THE LESSER HORSESHOE BAT (*Rhinolophus hipposideros minutus*) was recorded over the kitchen at Sefton Court by Lingwood in 1840 and at Wessington Court, Woolhope, by Dr. Walker, on 3rd December, 1942. It does not like wind and will not go out on a windy day. Its flight is described as fluttering, whirring and restless.

#### GROUP III — GNAWING MAMMALS OR RODENTS — RODENTIA

SUB-ORDER *Simplicidentata* (single-toothed rodents).

THE GREY SQUIRREL (*Sciurus carolinensis*) approached this county from Gloucestershire where it had reached Colesbourne Park about 1925. In 1937 a hundred were killed in the park. By December, 1930, it was seen at Tewkesbury and one 7th September, 1931, the first was seen in Herefordshire at Canon Frome. In November, 1935, one was trapped at King's Pyon and by this year it had become a pest at Fownhope<sup>(1)</sup> 1930-1). They reached Bredwardine in 1938, and since then have increased greatly in number. The first seen at The Prospect, Bredwardine, came to the back door in 1949: no more were seen there until November, 1952, when one seeking walnuts was shot, roasted and eaten. The skin was hard to remove and the flesh was similar in taste to young rabbit.



Grey squirrels reached Cusop about the spring of 1948 (ten years after Bredwardine) but had been seen in Clifford earlier. In Hereford, one was seen on Aylestone Hill in 1948. On 8th November, 1950, two were seen by I. Cohen on the road between Kerne Bridge and Ross and four between Hole-in-the-Wall and How Caple. In March, 1951, Dr. Langdale-Smith reported them as abundant in Tarrington and that they had been seen at Westhild in 1939, where now about a hundred are killed each year. On Garnons estate the first was seen in 1940, since when over 1,400 have been killed.

They seem to have reached Llanillo and Walterstone from the south-east: about a hundred were killed on Hall Farm, Llanillo, both in 1949 and 1950. Victor Murray, in 1951, wrote that none had been seen so far in Bringewood but that some had been shot in Adforton in 1948-9, though none had been seen there lately. One was trapped at Gatley in 1951 and in 1952 they had been seen in Bringewood. Other records suggest that the Grey Squirrel is now generally, but perhaps unequally, distributed (fewer in north and west) throughout the county.

THE RED SQUIRREL (*Sciurus vulgaris leucourus*) is commonly believed to have vanished from most of Herefordshire. A glance at the map of its distribution shows that this is not so. Reports indicate that, though much reduced in number, it is still fairly well but sparsely distributed. It has been reported recently from Eastnor Park, Ledbury Park, Dormington (where T. W. M. Johnson says they still flourish), Stretton Grandison, Woolhope (in 1951, none having been seen since 1943), Haugh Wood, Clehonger, Hereford (near Birtley House), Llanillo, Dulas, the Yazor district (where it began to disappear in 1943 and was not seen again until 1951), Staunton-on-Wye, Bredwardine, Aymestrey, Brampton Bryan, Burrington, and Willersley (1953, Cohen). It probably exists in the areas not covered by observers.

The Red Squirrel flourished in the county at the beginning of the century when its numbers reached their peak and began to decline. The Grey Squirrel was not wholly responsible. A recent report (1953) from South Devon records that the Red Squirrel has almost vanished since 1900 though the Grey Squirrel is as yet very rare.

The colour and appearance of this squirrel are subject to seasonal change. The animal is dark-brown from September to early April, and is in its short dark-red summer coat with a completely bleached tail in July. At other seasons squirrels with partly bleached tails may be seen. Ear-tufts are shed in July and not regrown till after September. The times of change vary in different localities.

THE DORMOUSE (*Muscardinus avellanarius*) appears in Lingwood's list of 1840, and S. Cornish Watkins said it was fairly common at Kentchurch but less so at Staunton-on-Arrow. Dr. Walker found a nest in Woolhope on 5th July, 1943. The head-keeper at Garnons has found only two in thirty years. The under-keeper at Whitney had seen a few in that parish. A. R. Tribe, of the Forestry Commission staff, reported one from Mousty Roughts, Burrington, in 1951, and Victor Murray saw one there some years ago but thinks them not common.

THE HOUSE MOUSE (*Mus musculus musculus*) is ubiquitous around and in the dwellings of man.

THE BROWN RAT (*Rattus norvegicus*) is found throughout the county.

THE COMMON LONG-TAILED FIELD (or Wood) MOUSE (*Apodemus sylvaticus sylvaticus*) has the upper part of the body dark and the lower part light. These colours are clearly separated. There may be an orange or chestnut spot on the chest varying in size from a pin-head to a patch or even forming a cross, but never continuous with the colour of the upper part. This mouse has been reported from various parts of Herefordshire. The averages of measurements of the heads and bodies and of the tails of ten specimens received from five parishes since March, 1951, were: head and body 3.45 inches, tail 3.36 inches; those for the hind-foot and ear of seven specimens were: hind-foot 0.61 inches, ear 0.44 inches.

DE WINTON'S YELLOW-NECKED LONG-TAILED FIELD MOUSE (*Apodemus flavicollis wintoni*). This British type of the yellow-necked mouse was first discovered in Herefordshire, at Bishopstone, by H. N. Ridley, in 1885, but has been found since in most of England and is commonest in the south and west. It was first described by W. E. de Winton in 1894<sup>(4)</sup>.

Miss E. M. Laurie, of the British Museum, says that it is not thought to interbreed with *A. s. sylvaticus*, but Sanders<sup>(3)</sup> says "it does not replace, but overlaps and may possibly interbreed" with this species. The distinguishing external features of *A. f. wintoni* are that it is larger and has a longer tail than *A. s. sylvaticus*, its colour is more brilliant and the chest spot is large and extends across the neck to join the coloured area of the upper parts, thus forming a collar, with an extension of varied length towards the white of the belly. One female from How Caple had a narrow, clear chestnut line from chest patch to anus. The British Museum has no such specimen. Internally de Winton's mouse has three more vertebrae (30 instead of 27) in the tail.

Up to 1951 this mouse had been found in eleven places in Herefordshire, in widely separated areas in the south and east (see map of distribution). The average of measurements of the heads and bodies and of the tails of thirteen mice was 4.03 inches and 4.44 inches respectively, and for the hind-foot and ears of twelve mice, 0.91 and 0.66 respectively. The yellow-necked field mouse is, therefore, considerably larger than the common species: the smallest immature specimen being larger than the largest full-grown *A. s. sylvaticus*.

THE HARVEST MOUSE (*Micromys minutus soracinus*). There are only five records from Herefordshire. Victor Murray says that one was found in corn at Adforton many years ago; a nest with a mouse in it and an empty nest at Beechwood, Hope Mansel, in 1907; another nest at Little Dewchurch in a gorse bush; and one, which had been pulled out of a shrub by a cat, at Bridstow in 1882 or 1883. The harvest mouse is the only British mouse having a prehensile tail.

THE SHORT-TAILED VOLE (*Microtus agrestis hirtus*) seems to be common throughout the county. They were numerous around Brobury House in 1951, and at The Prospect, Bredwardine, a few years ago damaged pyramid apple bushes by gnawing through the lateral roots of a stock which had no tap root. Dr. Walker found bones of this vole in large



numbers in castings of a barn owl. Their bones were more numerous than those of mice or shrews.

THE BANK VOLE (*Clethrionomys Evotomys glareolus britannicus*) was recorded by Lingwood in 1840 as *Arvicola riparia*. The only other record comes from Dr. Walker, who found a nest and young in his garden at Tupsley on 12th August, 1941. Apparently this vole is rare in Herefordshire.

THE WATER VOLE or Water "Rat" (*Arvicola amphibius amphibius*) appears in Lingwood's list, is common in the county, generally distributed, and said to be increasing in Eastnor Park.

SUB-ORDER *Duplicidentata* (double-toothed rodents).

THE BROWN HARE (*Lepus europaeus occidentalis*) was said, in 1908<sup>(2)</sup>, to have diminished in numbers; many having been shot, rabbits had replaced them. Reports from observers state that now (1951) there are none in Kentchurch or Whitney, they are rare in Almeley, and none have been seen lately in Brobury, the lower parts of Bredwardine, or in Moccas. Between 1939 and 1949, however, when frequently told that there were no hares in certain localities, I rarely failed to find one with my Basset Hounds. There are said to be many at Garnstone and Garnons, fewer at Adforton and Letton (near Brampton Bryan), and scarce at Easthampton (near Mortimer's Cross), Madley and Eaton Bishop.

These records seem to indicate that the hare does not now abound in the county and may have decreased considerably in some districts.

THE RABBIT (*Oryctolagus cuniculus cuniculus*) is abundant everywhere in the county; there was a plague of them in 1935. Sandars says there are a very few rabbit-proof plants. I have seen tulip beds successfully protected by a surrounding border of forget-me-nots.

#### GROUP IV — HOOFED BEASTS OR UNGULATES — UNGULATA

THE FALLOW DEER (*Dama dama*, formerly *Cervus dama*). G. K. Whitehead, in *Deer and their Management* (1950), gives the approximate number of fallow deer in Herefordshire as Moccas 50, Kentchurch 60, Ledbury 74, Courtfield 50, Titley Court 20: total 254. He says that there were a few escaped deer around Garnstone, all of the dark race, the remnant of a herd of about a hundred which existed there before the war of 1939-1945. He adds that escaped deer were to be found in Richard's Castle, in Wormsley, Dinmore and Bodenham. A. R. Tribe reports that both races are to be found in North Herefordshire, at High Vinnals, Aston Common, Sunny Dingle (where does go to fawn), Pitch Coppice, Bringe-wood Chase (where the bulk of winter food for bucks is blackberry leaves and farm crops), Haye Park, Climbing Jack Common and Aston Copse. Sometimes bucks stray as far as Gatley Park and to Yeld Hill but do not stop there. Langdale-Smith reports deer in Stoke Edith, escaped from Holm Lacy.

J. Lucas-Scudamore tells me that there were deer at Kentchurch long before 1547, and that, in 1951, there were about eighty-five head of the dark and spotted races in almost equal numbers.

THE RED DEER (*Cervus elaphus scoticus*). There are no wild red deer in Herefordshire but a herd of from sixty to ninety were in Eastnor Park in 1951. Whitehead said that there were very few at large in the county, though an antler was picked up in the mountainous woods at Weston-under-Penyard in 1947.

#### REFERENCES

1. Woolhope Club *Transactions*.
2. *The Victoria History of the Counties of England—Herefordshire*; Constable, London, 1908.
3. Edmund Sandars, *A Beast Book for the Pocket*, Humphrey Milford; Oxford University Press, 4th edition, 1949.
4. Sir Harry Johnston, *British Mammals*, The Woburn Library of Natural History; Hutchinson and Co., London, 1903.

### III. PARISHES WHERE POLECATS WERE REPORTED 1919 TO 1951

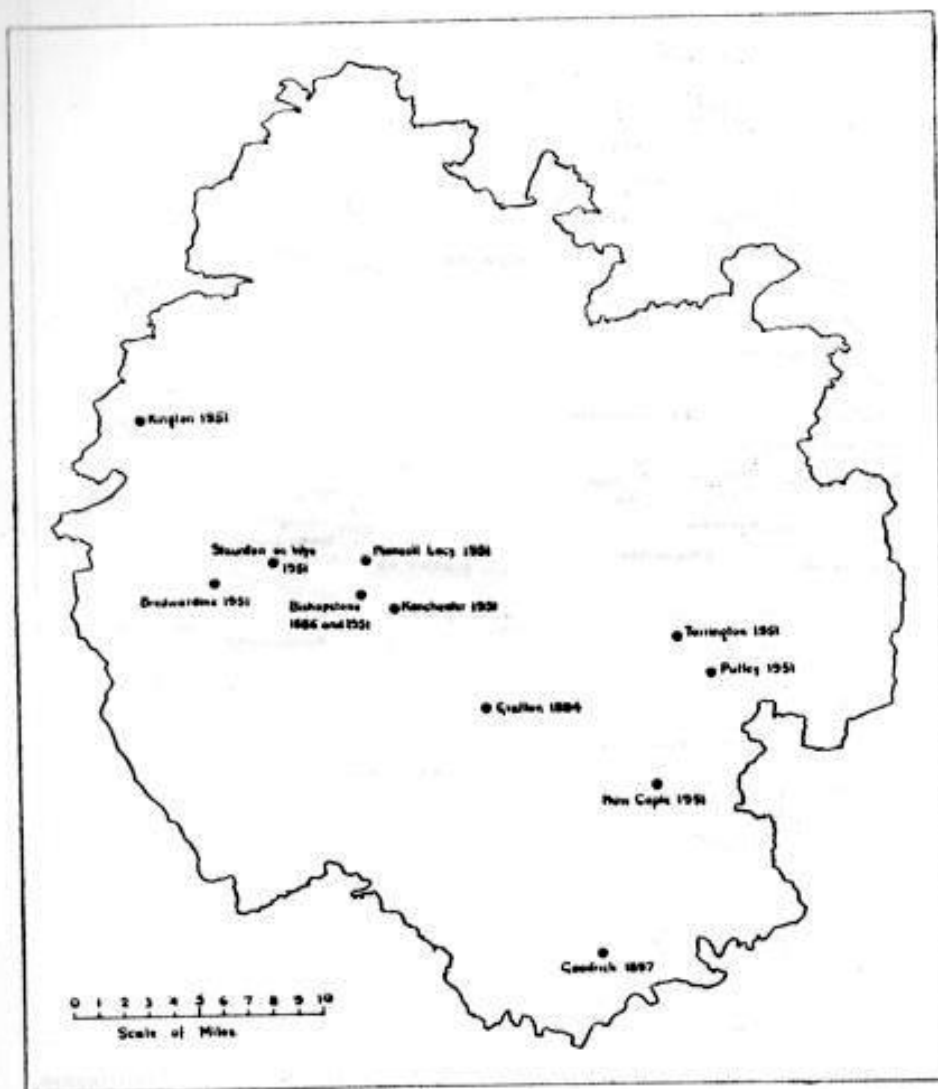


The dots do not indicate numbers. Observers and Numbers reported were: Adforton, L. C. R. Cameron, 1; Wigmore, V. Murray; Croft, A. R. Tribe, 1; Staunton-on-Arrow (W. Trans. 1927, p. 109), 1; Kington, R. H. Baillie (1948/49), F. H. Bradley (1951), 1 each; Lyonshall, L. Green, 1; Brilley, Mrs. Paul, 2; Letton, F. C. Morgan (1938), 1, Capt. Garrett (1951), 1; Staunton-on-Wye, S. T. Polley, 1; Cusop, H. Meredith; Clifford, D. Burnett, 1; Bridge Sollars, S. T. Polley, 1; Moccas, J. E. M. Mellor, 2; Peterchurch, F. C. Morgan (1938), 2, Oakley (1946), 6, A. Powell (1950), 1; Kingstone, V. Murray; Stoke Edith, Langdale-Smith, 5; Pixley and Putley, A. G. Hadfield, 1 each; Woolhope, C. Maclaverty, 1939, 1, 1951, 1; Treville, J. E. M. Mellor, 1; Aconbury, C. Armitage, 1; Garway, P. Benjamin (Daily Telegraph, 3/3/51), 1; Bredwardine, J. E. M. Mellor, 2, Breese, 2; Clehonger, Ellis, 1; Glasebury, C. W. Walker; Llangoed, Christy, 1, thereafter 4/5 annually.

### II. PARISHES WHERE RED SQUIRRELS WERE REPORTED, 1950 TO 1953



The dots do not indicate numbers. Observers and Numbers reported were: Burrington, V. Murray, I. Cohen (1953); Adforton, V. Murray, A. R. Tribe; Bampton Brian, Capt. Harley; Wigmore, V. Murray; Aymestry, V. Murray, J. Anderson, 3; Croft, A. R. Tribe, 1; Eyton, Col. Coates, "several"; Kington, R. H. Baillie, 3; Sarnesfield, Miss Marshall, 1; Yazor, S. T. Polley, 2; Bredwardine, 1950, M. Trumper, 1951, L. Breese, J. E. M. Mellor, A. Davies, 1 each; Moccas, M. Powell, 2; Cusop, H. Meredith, 1; Lingen, F. C. Morgan and J. Griffiths, 1; Stretton Grandison, T. W. M. Johnson, 3; Clehonger, Ellis, 1; Ledbury, Eastnor, Donnington, T. W. M. Johnson, 1 each; Dulas, the builder at the Court, 1; Llancillo, M. E. Colley; Willersley, Winforton, I. Cohen, 1953; Hereford, I. Cohen.



The dots do not indicate numbers. Observers and Numbers reported were: Bishopstone, 1885 (not 1886 as on map), H. N. Ridley, 3; A. Haynes, Mrs. English, 2; Goodrich, R. Drane, 2; Kington, F. H. Bradley, 1; Staunton-on-Wye, H. Jones, 2; Mansell Lacy, S. T. Polley, 3; Kenchester, R. C. Parr, 3; Bredwardine, J. E. M. Mellor, 12; Tarrington, Langdale-Smith, 1; Putley, P. G. Hadfield, 1; Grafton, W. E. de Winton; How Caple, H. S. Allfrey, 1.

## Prehistoric Man in Herefordshire

By R. S. GAVIN-ROBINSON

**I**N studying prehistoric man in Herefordshire it is necessary first to consider the climatic and geological factors that would govern his existence in the area. At least two glacial periods of considerable duration occurred in this region during Pleistocene time, and these had a vast effect on the land surface and drainage, thereby influencing the fauna and flora, on which in turn depend the possibility of man's existence.

Throughout his evolution and in all parts of the globe, man has been found in conjunction with those mammals which could exist under similar climatic conditions and provide him with meat. At the same time, man, with his superior mental development and consequent adaptability, could survive at greater extremes of heat and cold than any other species of mammal, so that he is found with the mammoth and glutton at one extreme of temperature and with the sabre-tooth tiger and the hippopotamus at the other, though it must be noted that these associations do not occur in this county.

The following localities have yielded these different mammals: Frome gravels, *Elephas antiquus*, elk, deer and hippopotamus (the last identification is doubtful); Lugg gravels, long-haired or woolly rhinoceros; Stretton Sugwas, woolly rhinoceros and mammoth; Eastnor, *Elephas antiquus*, Leadon gravels near Ledbury, woolly rhinoceros and mammoth; Wilcroft and Hagley (high level gravels), horse and rhinoceros. This fauna emphasises the variation from a warm climate with the hippopotamus to an arctic climate with the woolly rhinoceros. Except in King Arthur's Cave no remains of Paleolithic man have been discovered in the county, though his presence in association with the foregoing fauna may be conjectured, and the evidence of it may yet be forthcoming. The density of a community dependent on hunting, in an arctic climate, can be gauged from Northern Canada or Siberia, and Herefordshire may have supported only two or three tribal or even family units at any one time.

Man has utilised limestone caves for habitation in many parts of the world, and Herefordshire is fortunate in possessing one of the classic examples in King Arthur's Cave, near Whitchurch. This cave is situated in a narrow valley between the Dowards leading to the Wye valley from what was presumably at one time a lake or series of lakes in the Whitchurch - Goodrich area, before the Wye cut the present channel at Symond's Yat. It has been excavated and the history of its use by man has been explored. There may of course be other caves or shelters in the limestone cliffs of the Dowards and Symond's Yat in which traces of occupation in prehistoric times still await discovery. The excavation in 1929 by the Bristol Speleological Society of the much-disturbed Merlin's Cave is a case in point, but this cave yielded no evidence of Paleolithic occupation.

The story of the excavation of King Arthur's Cave falls into two chapters





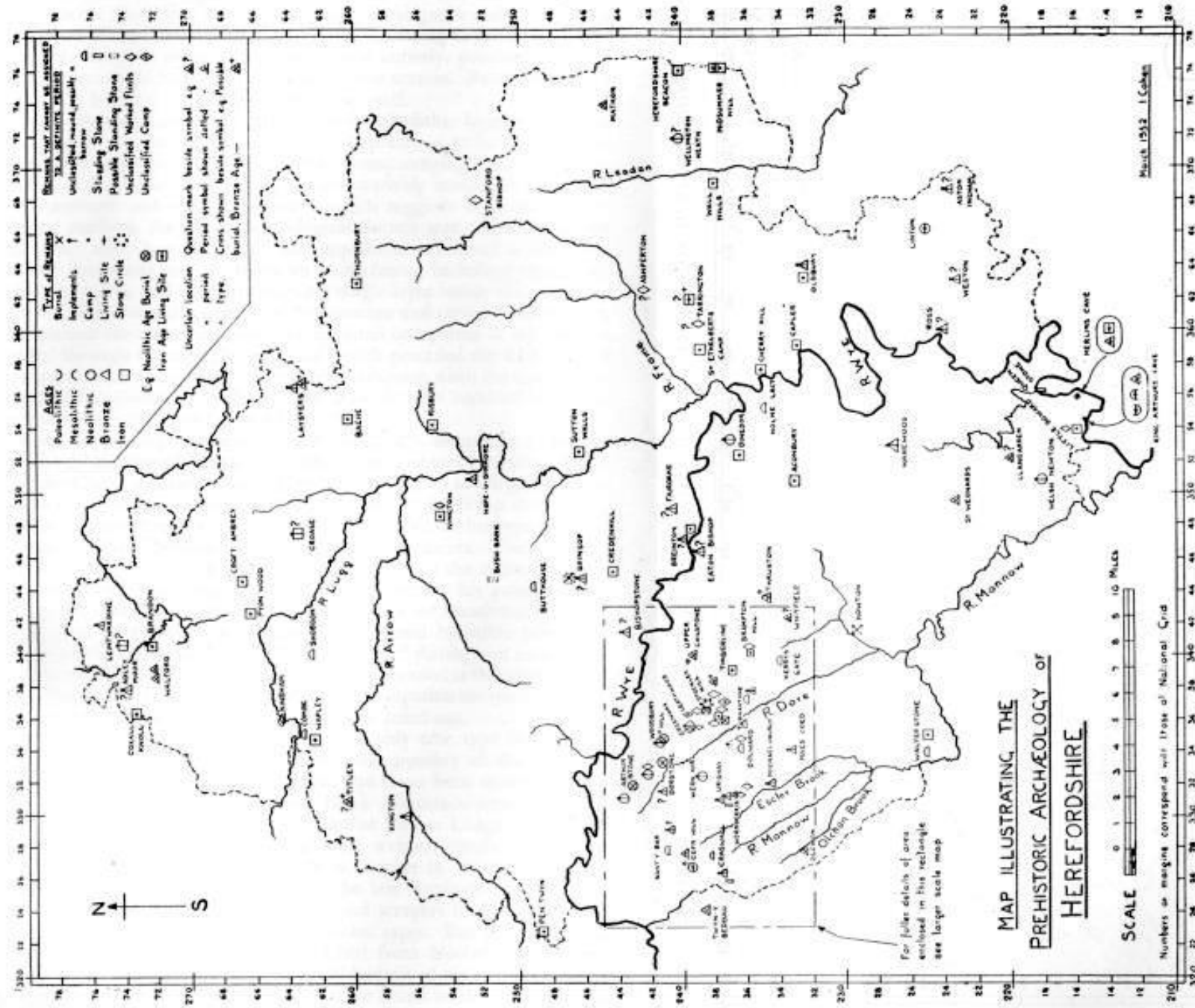
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identifies them as Aurignacian, and considers that this culture survived here into the Mesolithic Age. These layers of stalagmite and rubble mark the period of the Little Welsh glaciation, when owing to the extreme cold man was forced to abandon the cave almost entirely, possibly visiting it only on occasional hunting trips in favourable seasons. Below them, and resting on bedrock, is the Paleolithic layer itself.

W. S. Symonds could identify only one Paleolithic layer, the deposit being again too confused for accurate interpretation to be possible. He found that it contained a very diverse fauna, ranging from the horse, hyaena and cave lion, suggesting a comparatively temperate climate to the mammoth and woolly rhinoceros which suggests an arctic climate. On the platform the Bristol Speleological Society was able to subdivide this layer into three, of which the uppermost contained a temperate climate fauna and the two lower an arctic fauna, including mammoth. All three layers, and the corresponding single layer inside the cave, contain traces of charcoal and flints of Aurignacian and proto-Solutrean type. The picture thus becomes clear: Aurignacian occupation of the cave extended through the interglacial period which preceded the Little Welsh glaciation, with an interlude of Solutrean influence, until the onset of the Little Welsh glaciation itself, and may possibly have survived it, if only very intermittently, into the Mesolithic Age.

Apart from King Arthur's Cave, evidence of a Mesolithic culture in Herefordshire depends on surface finds, an unsatisfactory method. If Dr. Graham Clarke's classification of Mesolithic industries as being dependent on the microburin is accepted, then all that Herefordshire can show, being void of microburins, is a quantity of artifacts of Mesolithic type found in conjunction with Neolithic or Bronze Age implements. These may be due to a type survival from elsewhere brought into the county by Neolithic man, who had acquired the technique during his passage across Europe. It is extremely improbable that the so-called Mesolithic or Microlithic types were evolved individually by localised Neolithic tribes, this type of implement being apparently standardised throughout most of the known prehistoric world. This theory of type survival is therefore reasonable, though the possibility of a Mesolithic occupation on the hills along the western boundary of the county cannot be ruled out.

If the microburin is not accepted as the only true type fossil of the Mesolithic culture, then a quite appreciable number of flint artifacts of recognised Mesolithic non-geometric type have been recovered from various sites in the Golden Valley-Black Mountain area. Finds on Stockley Hill in Peterchurch parish, part of Poston Lodge Farm, have included blades, thumb scrapers and other scrapers similar to accepted Mesolithic types. A thumb scraper from Shegaer in Vowchurch parish was identified as being Mesolithic by the late Reginald Smith of the British Museum. On Cefn Hill blades and scrapers in flint, stone and shale have been found similar to Mesolithic types. But nowhere has a concentration of Mesolithic types detached from Neolithic or indeterminate types been discovered, which could admit of the identification of a "Mesolithic chipping floor" similar to those found on the Pennines, and which might be expected in the Black Mountain region.

There is no local source of flint other than occasional small pieces of poor quality found in the glacial gravels or river beds. It is therefore probable that implements in the Stone and Bronze Ages were traded or brought into the county from a considerable distance, and this limits the likelihood of finding a chipping floor of the type found at Kelling, in Norfolk, where the supply of raw material was almost inexhaustible. In the Mesolithic period in Herefordshire supplies of raw flint must have presented such extreme difficulty that settlement can have been little more than occupation by seasonal hunting parties, though if it is agreed that after the last, or Little Welsh, glaciation the county consisted largely of lakes and swamps the area might have been suitable for occupation. It would be similar to other areas where there are known Mesolithic settlements near water, either fresh or salt, such as Wangford Fen, Star Carr, Kelling, etc.

The final Mesolithic hearth at King Arthur's Cave may coincide with the alteration of the climate which made it possible for man to abandon his cave dwellings and live in temporary shelters in the open. This may have occurred during the warmer Boreal period, about 6000 B.C. At this time the forest growth was spreading over the lower altitudes of the county, and Mesolithic man, not being a forest dweller, would automatically incline towards the comparatively tree-free areas of the Black Mountains and Welsh border ranges. The scattered Mesolithic type artifacts which have been recovered from the Black Mountains and from the Clun area in Shropshire may be an indication of sparse occupation by hunting families wandering across the hills as the climate improved and life in the open became possible. Concrete evidence of habitation sites may still be awaiting discovery, but for the present we can only deduce a problematical meagre occupation during the several thousand years from the end of the last glaciation until Neolithic man arrived in about 2250 B.C.

There is thus no evidence from which any deduction can be made giving a date for the termination of the Mesolithic period in Herefordshire. Nor is there any evidence of the extent of occupation in the county when the race classified as Neolithic man arrived, bringing in a completely new culture. It is not known whether the newcomers absorbed the survivors of the Mesolithic, eradicated them, or found the area uninhabited, and perhaps material evidence will never be obtained. The end of the Mesolithic period, whenever it occurred, marks the end of the occupation of these islands by hunting and food-gathering races. With the arrival of the Neolithic people, England was occupied for the first time by a more or less settled civilisation, based on primitive agriculture, domestication of animals, an improved technique in working flint and stone (including the polishing of both), and a complicated and impressive burial ritual.

This civilisation may have originated in Central Asia during a fertile phase of the area and spread westwards. If the causewayed camps, long barrows, polished flint and stone, and leaf-shaped arrowheads are accepted as typographical evidence of the culture, it appears to have reached South-West England and South Wales from Brittany, having passed through the Western Mediterranean, Spain, Portugal and France. The builders of long barrows travelled up the Severn Estuary and along the Welsh coast,

establishing a considerable occupation in the Cotswold - Wiltshire area east of the Severn and a Black Mountain group west of it. The South and West Wales occupation is not directly connected with Herefordshire. The Black Mountain group, which includes West Herefordshire as well as Brecknockshire, appears to have followed the Usk Valley, erecting chambered long barrows at Crickhowell, Talgarth and Llanigon, and ending at the terminal barrow of the group at Arthur's Stone in Dorstone parish. Arthur's Stone appears to be the largest barrow of the group; it contains several unusual features, including an exceptionally large chamber and a curved passage at the north end. A recently discovered mound of long barrow type at Cross Lodge Farm, also in Dorstone parish, is probably another barrow of the same series, but it awaits (1954) excavation and precise identification. As it appears to be undisturbed, excavation might produce very valuable evidence of mode of construction and funeral ritual, and also supply a solution to the date of Arthur's Stone, where nothing survives except the stones forming the chamber and passage, and a few others possibly forming part of the peristyle.

Apart from Arthur's Stone and possibly Cross Lodge, we still depend on surface finds of artifacts of recognised Neolithic type for our knowledge of the distribution of Neolithic man in Herefordshire. Surface finds, particularly where the artifact is of a specialised type (such as polished stone), are valuable in identifying the presence of a culture. Where specialised types are found in conjunction with a concentration of flakes, scrapers, cores and chips, and possibly domestic articles such as hones and spindle whorls, they can be accepted as an indication of an occupation or living site of the period corresponding to the predominant specialised type, without the discovery of actual dwellings or enclosures. Unconnected surface finds of Neolithic type artifacts are therefore contributory evidence of the presence of Neolithic man in the county. Unfortunately, however, it must be borne in mind that at any time in the past 3,700 years human agency may have moved an artifact a considerable distance from where Neolithic man originally dropped it.

The Herefordshire Neolithic is mainly concentrated, as far as our present knowledge extends, in an area between the Black Mountains and the Wye<sup>1</sup>. A considerable number of leaf-shaped arrow heads, polished stone axes and chips of polished stone and flint axes have been recovered from the St. Devereux - Merbach ridge at Stockley Hill, Woodbury Hill and the Arthur's Stone area; between the Dore and the Escley at Shegaer, Dragon's Pool and the Pucha; and on Cefn Hill between the Eskley and the Black Mountains. In addition to artifacts a large quantity of chips and cores have been recovered from all these sites, but except at Cefn Hill everything is "surface", and the chips may therefore be either Neolithic or Bronze Age. The Cefn finds were only located after the ground had been ploughed (for afforestation by the Forestry Commission) to a depth of 8 to 12 inches, and they came from the layer below the peat and humus. The Neolithic type artifacts from this source found, in conjunction with spindle whorls, other domestic implements and a large quantity of chips were therefore in an undisturbed context and may be accepted as evidence

<sup>1</sup>Map 2.



of a purely Neolithic occupation. The domestic implements include a nutcracker made of a small slab of sandstone with a hollow on one side, and a drift pebble showing considerable abrasion at one end. The hollow is sufficiently deep to hold a hazel nut, with a diameter which permits a blow from the pebble to crack the shell but not crush the kernel. This appears to be very rare, and possibly hitherto unrecorded, type in England, but similar implements, accompanied by heaps of hazel nut shells, have been identified in Irish excavations.

Surface finds east of the Wye include those at Linton and Ledbury, with no very definitely predominant Neolithic type; Dinedor, with a Neolithic tendency; and Much Marcle, with an identification mainly dependent on a few chips of polished stone. A small site at Gwenherion in Welsh Newton produced chips and scrapers, one made from a piece of polished flint. A polished stone celt from Kington is in Ludlow Museum, also one from Mocktree, near Leintwardine, but these have no connected finds to indicate that they are any more than "strays", probably lost in antiquity.

There are three possible interpretations for this concentrated Neolithic occupation in one area of the county. First, Neolithic man having come up the Usk, occupied an area near the Black Mountains and passed to Clun and Shropshire along the eastern edge of the Welsh hills. Secondly, he avoided the part of the county which may have been heavily forested and divided by rivers and swamps, only crossing it where a ridge gave a fair unimpeded passage, such as from Linton to Stoke Edith. Thirdly, evidence of his occupation in other parts of the county, such as long barrows and leaf-shaped arrow heads may be there, but has not yet been recovered.

There is no evidence of where Neolithic (or Bronze) Age man obtained his supplies of flint. His implements may have been traded in a partly finished condition. Only two large nodules of flint have been found on working floors, both near Urishay in Peterchurch parish, but artifacts found nearby are too indeterminate for their period to be established. A very noticeable and unusual feature of artifacts in the country is the duplication in shale, mudstone, or other stone, of artifacts normally made of flint, and the reworking of chips of polished flint axes into scrapers. Also a number of artifacts have been recovered with a blue-grey patination showing areas of unpatinated secondary working; this is a clear indication that in the prehistoric periods broken implements or flakes were reworked for use a considerable time after their original manufacture. This economy of imported material by a conservative people and the use of alternatives which cannot have been very durable or satisfactory is a clear indication that supplies of raw flint were very limited. It is particularly noticeable in the Cefn finds, where blades and borers as well as scrapers were made from material other than flint. This may be a peculiarity of the Cefn occupation, or it may be due to the fact that other finds have come from cultivated ground where artifacts of local stone are more easily overlooked. The stone axes from the Black mountain region indicate an origin in the local drift gravels rather than a known axe factory site such as Craig Llwyd or Stake Pass. The only exception is an isolated

piece of polished stone, identified as originating from an outcrop south of Aberystwyth. It seems unlikely that this stone reached Herefordshire by glacial action, and it may indicate a trade route from Hay to Aberystwyth in Neolithic times.

The Neolithic period in Herefordshire, which began about 2200 B.C., was succeeded in 1800 B.C. by the Bronze Age culture. This was brought to England by comparatively small parties of invaders from the Rhine plain who landed on the east or south coasts. These people introduced the tanged and barbed arrowhead in place of the simpler form of leaf-shaped arrowhead used by Neolithic Man, and in due course they also introduced a knowledge of metal working. In addition to these innovations they brought in the beaker type of drinking pot, which has led to their classification as "Bronze Age Beaker Folk". It has been suggested that after their arrival they became a warrior aristocracy who imposed their rule on the Neolithic pastoralists already established in England, and then mingled with them to form a hybrid race.

The Beaker folk spread rapidly over England. Early evidence of their presence in Herefordshire is furnished by the two Olchon cist burials, which have been dated at 1750 B.C. The beaker found in one of these cists is identical with one found in a barrow in Glamorganshire, excavated in 1941, which has been dated as not later than 1600 B.C. These cists are evidence of an established occupation of the Black Mountain area by the Beaker folk at that time, though from the Glamorgan analogy the immigration may have been by the Bristol Channel as well as the North Sea. Although the age is called the "Bronze Age", it is doubtful whether the original invaders brought a fully developed bronze industry with them, or whether later waves introduced it, or whether they evolved the full late Bronze Age culture that included rapiers, axes, spears and domestic articles after they arrived. It may have been developed owing to the quantity of tin and copper available. If the manufacture of bronze goods and weapons were an imported craft or not, it rapidly extended over the country and included also Scotland and Ireland. In Ireland a craft in working in both gold and bronze for ornaments, weapons and other implements was developed and exports of these were sent to England and thence to Western Europe.

Much of the concrete evidence of the Bronze Age in Herefordshire has been lost by the spoliation of the barrows of the period. The excavators report the discovery of bones, charcoal and ashes, but these were not submitted to scientific examination, and other objects which would have been keys to accurate dating may have been found but disregarded. A few examples of this are St. Weonard's Tump, where a piece of pottery attributed to the Roman period was reported as being found in conjunction with the two original cremation burials; cremated bones in a vessel under a large mound at Walford near Brampton Bryan; and the rifled barrow at Pentwyn in Michaelchurch Escley. The following extract from the *Woolhope Club Transactions*, Volume 1886-1889, page 226, gives an indication of the quantity of prehistoric material which has disappeared in the course of time and through unorganised collecting: "A very interesting collection of specimens of Roman pottery discovered in the



neighbourhood of Vowchurch, collected by the late Mr. H. Jenkins, a surgeon, formerly resident in this neighbourhood, was exhibited by Mr. Walter Pilley of Hereford. The hand lamps and hanging lamps were in a very good state of preservation. The collection included objects of domestic use in metal, such as rings, scissors, the well-known buckles and brooches called fibulae, and about a dozen of the bronze cutting instruments called celts." It is a matter for great regret that not only is there no trace of the present whereabouts of the collection, except that the bronze implements given to Hereford Museum by Mr. Jenkins may be some of those referred to, but there is no record of precisely where the objects were found.

The Mathon urnfield under systematic excavation would have produced much evidence of great archaeological value, as it corresponds to an urnfield at Ashford in Kent, which also contained urns of different classes and periods. Other urnfields in Dorset, Lincoln and Cornwall contain only one urn type, indication of use for cremation for only a limited time. Various reports in the *Woolhope Club Transactions* between 1910 and 1938 give rather uncertain evidence, mainly from hearsay, that cremations, accompanied by urns, were buried in two lines (Jack 1911), and that fifteen interments with both Middle and Late Bronze Age urns were found (Hamilton 1938). The Rev. J. E. H. Blake, in a paper read to the Birmingham Archaeological Society, referring to excavations in 1910, reports from fifteen to thirty cremations, accompanied by urns, but he also was obliged to base his information on hearsay. Two bronze spearheads of circa 800 B.C. were also found in the burial ground, associated with un-urned cremations.

Within the county there appear to be twenty-three barrows, of which three have been excavated and the remainder may be classed as "probably" Bronze Age, four cist burials, and twenty-six bronze weapons, viz., eighteen bronze palstaves and socketed axes, four rapiers and four spearheads. This is a very meagre catalogue compared with Shropshire, and suggests either that there is still much material awaiting discovery, or, as stated already, that many objects have been found only to be lost again.

With regard to the identification of the extent of Bronze Age occupation on the evidence of surface finds of flint artifacts, the tanged and barbed arrowhead might be accepted as typological evidence, but there is inevitably overlapping with subsequent industries. Tanged and barbed arrowheads in Herefordshire certainly persisted into Iron Age contexts, either as "strays" or by the survival of a technique. The leaf-shaped arrowhead in an Iron Age barrow at Poston is a case of a type in an unrelated context.

Taking tanged and barbed arrowheads in surface finds as evidence of Bronze Age occupation, the area west of the Wye to the Black Mountains must have been fairly thickly populated, particularly Poston and the east slope of Cefn Hill and other foothills. It should, however, be noted that a comparison of numbers gives as many leaf-shaped as tanged and barbed in the area, and frequently on the same or adjacent sites. This would appear to indicate that the density of population was prob-

ably more or less constant during both the Neolithic period and the first centuries of the Bronze Age. The majority of bronze weapons also come from the Golden Valley district or from the north-west corner of the county, and the round barrows and cists so far discovered are equally concentrated in these districts. East of the Wye, tanged and barbed arrowheads or spears from Harewood, Sollers Hope and Hope-under-Dinmore are evidence of a scanty Bronze Age population, but except at Mathon there is very little indication of any large settlement.

In closing the Bronze Age record and before considering the Iron Age it is necessary to account for the areas of the county where extensive flint knapping obviously took place—Linton (Cooper Neale)<sup>1</sup>, Ledbury (Ballard), and Tarrington (Lea-Wilson and Malkin). These sites are all situated on ridges of a more or less connected system of semi-hill country between the high ground of the Forest of Dean, the Malvern ranges and the Welsh border. In prehistoric times these ridges probably carried only a sparse growth of thorn, birch and stunted oak, giving an easy line of communication tracks between one settlement and the next. The valleys of the Wye, Lugg, Leadon and Frome consisted largely of swamps with a dense crop of alder, willow and undergrowth, merging into a mixed hardwood forest of oak and ash above the swamp level. Under these conditions passage across the valley systems must have been very difficult and liable to interruption by floods. Man therefore confined his communications, cultivations and living sites to higher ground where he did not have to compete with forest conditions and inter-communication was fairly easy. This explains why what at first glance appears to be an isolated series of knapping sites is actually a series of connected occupation areas, sited to suit the type and nature of the country, with communications along ridges or by dry zones between river valleys.

The Middle and Late Bronze Ages (circa 1000 to 900 B.C.) are made complex by varying cultures and races which composed the population, due to the expansion of trade between the British Isles and Western and Southern Europe. This confusion of races resolved itself into a civilisation consisting of the remnants of the peoples that made up the Bronze Age occupation, a Neolithic-Beaker-Axe fusion extending over 1,500 years, to which was added an uncertain number of trading immigrants whose origins varied from the Mediterranean to the Baltic. Into this coalescing civilisation irrupted Celtic invaders from the Rhine Valley and Western France, bringing an advanced knowledge of metallurgy, the manufacture of bronze ornaments with a developed technique in decoration based on a spiral motif, and iron smelting for the making of weapons, implements, and agricultural and domestic articles.

The various periods of the Iron Age have been divided, to simplify identification, into period "A", stretching from the introduction of an iron industry to about 300 B.C., "B" from 300 B.C. to the end of the last century B.C., and "C" from circa 25 B.C. into Romanised Britain. These Celtic invasions were more a series of tribal immigrations than an organised racial attack, and therefore it is impossible to give any fixed

<sup>1</sup>Names in brackets are of finders in these areas.

date for the commencement of the "A" period, as there was no conquest of the country by the Celts on the lines of the Roman or Norman conquests.

The initial infiltration of Celtic tribes of Iron Age "A" does not appear to have touched Herefordshire, except possibly at Midsummer Hill Camp in Eastnor parish, although the "A" culture passed up the Severn from the iron ore areas of the Forest of Dean to Eastern Shropshire. There may have been scattered settlements in Herefordshire, but there were no mineral deposits to attract them, or perhaps the strong Bronze Age population did not welcome them except as traders. Had the "A" culture settled in the county their single bank-and-ditch camps should have been identified, but they do not appear to exist, unless they were converted to the later multiple ditch camps so that the original form disappeared. No example of Celtic art in bronze or other metal so far has come to light in Herefordshire, apart from a few fibulae and fragments of bronze, although the county lies on the trade route between the Wessex-Severn Valley tribes and the Druidical centre in Anglesey, where many specimens of Celtic art from the south-west have been identified.

The Celtic invasions of Iron Age "B" during the second century B.C. brought Herefordshire into the rapidly extending Iron Age zone. The hill top camps on both banks of the Severn Valley system are evidence of the spread, probably from France, of a powerful warlike race bringing this technique as a method of military defence and to provide themselves with a protected living site. While there is no evidence that the Celtic occupation of England was influenced by any central policy, the fact of an advanced civilisation over much of the country with strong Celtic affinity must have given support to the kindred tribes spreading westwards from the Severn.

Before considering in detail the Iron Age camps in Herefordshire, the often-repeated theory that these camps were constructed during the final phase of the Roman conquest should be dispelled. There is no doubt that Caradoc may have utilised earthworks already in existence in his struggle with Ostorius Scapula, and that the opposing forces may have occupied adjacent camps at the same time. There can, however, be no foundation for the suggestion that Caradoc actually built these extensive earthworks as defensive positions in the face of an attacking Roman army.

Unfortunately the hill top camps of Herefordshire have provided little concrete evidence of Iron Age "B" until the end of the period. There are approximately forty-two camps that can be attributed to Iron Age "B" or "C", Poston being probably the last to be built, early in the first century A.D. One explanation of the comparatively large number can be found in the slight dip of the rocks which are almost horizontal over a wide area. This supplies the knolls, isolated hills and spurs of ridges that so greatly simplify the making of them. For example, Dinedor, being an isolated hill, required little more than a system of ditches and scarps round the summit. Caplar, having a comparatively flat summit to the highest point of a ridge with a steep slope on three sides, and Poston with a steep-sided promontory, only required a protective earthwork system on one side. The Celts who passed up the Severn Valley into Herefordshire, bringing

their hill fort technique from France, therefore found in this county an area ideally suited to the construction with the minimum of labour of their normal defensive positions, possibly needing no more than one ditch and vallum with a simple entrance.

Very little systematic excavation has been carried out in the Iron Age camps, and in those camps where excavation has revealed extensive occupation it is mainly of late "B" or "C" periods, though evidence of an early "B" occupation may of course be awaiting discovery. In default of such evidence it may be inferred that the earliest camps were built by infiltrating tribes of the middle or late "B" period. These tribes as they arrived in a district would as a matter of custom build their traditional defensive fortifications; these might at first be of a simple type, the complexity of the ramparts and ditches being increased as necessary in face of a threat from a hostile tribe or from the advancing Romans. Some camps, therefore, may have been abandoned unused, and some used only in emergencies, so that the amount of pottery or other dateable material to be found in them may well be very small or even non-existent. The only camps which have produced dateable material in any quantity are Midsummer Hill and Hollybush at Eastnor, Sutton Walls at Marden, Poston at Vowchurch, Dinedor Hill and Aconbury Hill. Small finds have also been made at Credenhill, four miles north-west of Hereford, at Timberline near Poston, and at Breinton. Scattered surface finds of Romano-British pottery have been recorded by J. S. Lea-Wilson from sites on Dormington Hill near St. Ethelbert's Camp. This appears to provide an example of an Iron Age living site near a camp, while the camp itself produces no dateable remains, which may have been the case elsewhere.

From reports on Midsummer Hill and Hollybush it would appear that a very extensive town existed there, as 250 hut circles were identified. Pottery found is dated between 400 B.C., which would imply an early Iron Age "A" occupation (probably connected with the passage of the "A" people up the Severn) and 100 A.D.—that is, post-Roman conquest. Two occupation layers are identified, but this merely suggests that a great deal of valuable evidence has been overlooked, judging by results from Sutton Walls and Poston.

Reports of various skeletal remains and pottery found at Sutton Walls were made to the Woolhope Club between 1917 and 1943, but no systematic chronology was obtained until Miss K. M. Kenyon carried out excavations in 1948, 1949, 1950 and 1951. As Miss Kenyon's interim report is in the *Transactions* for 1950 no detailed analysis of her work need be given in this paper. The report indicates that there was a lengthy Iron Age occupation, including Iron Age "B" and "C", and that this was succeeded by Roman occupation extending to the end of the Roman era. The Roman advance in 70 A.D. may have been the date of the slaughter of the defenders of Sutton Walls, whose skeletons Miss Kenyon unearthed at the west entrance. This corresponds with the massacre of defenders which took place at Bredon near Tewkesbury following the capture of the camp.

A point of great archaeological value was brought out by Miss Kenyon



in the Sutton Walls pottery. A quantity of pottery with a stylised "duck" pattern round the rim was identified, dating from the middle first century B.C. and corresponding to pottery of the same type found at Bredon. "Duck" pottery was also found in 1951 at Dinedor Hill and Aconbury, and this serves to link an occupation of Bredon and the three camps in this county by the same cultural peoples. At Poston, however, where a very large variety of pottery has been discovered, no trace of "duck" ornamentation has been identified.

Poston, although the smallest Iron Age camp in the county, has produced a very large amount of dateable pottery and other material, commencing in the beginning of the first century A.D. The absence of "duck" ornamentation referred to above may indicate that the original builders of Poston, Walterstone and Timberline camps were a final infiltration of Belgic or other tribes from Northern France escaping from the conquering Roman armies, who reached the Welsh border by way of the Severn estuary and Munnow valley, and therefore remained unconnected with the tribes occupying the remainder of the Wye basin. Poston is also the only Iron Age camp in Herefordshire near which a round barrow of the Iron Age covering a cremated burial has been found. This indicates a burial ritual differing from the normal Iron Age practice. It is either an imported ritual of an isolated tribe who had acquired the cult in France, or possibly a survival of late Bronze Age funeral ritual which had persisted in this remote part of the country. The camp itself has produced an excellent chronological sequence from its construction in about 10 A.D. to its conquest in 70 A.D. and abandonment in 110 A.D., with a subsequent reoccupation to 400 A.D. Several reports on the finds have already appeared in the *Transactions*, and at the time of writing a final report is in course of preparation.

Of the other camps in the county which as stated above have produced slight occupational evidence, but which have not yet been fully excavated, an iron spearhead and some potsherds have been found at Timberline, some coarse gritty black potsherds at Breinton, and various potsherds at Credenhill. In addition, worked flints and bones have been found at Little Doward, but the report is unfortunately too confused for identification of period to be possible, and an old and very doubtful report refers to the finding of pottery and other remains of Iron Age to Romano-British periods at Wall Hills, Ledbury.

We have now followed the evolution of prehistoric man in Herefordshire from the Paleolithic occupation of King Arthur's Cave which preceded the Little Welsh glaciation through the doubtful phase of the shadowy Mesolithic culture, through the arrival of those early Neolithic peoples who were our first farmers, through the Bronze Age which saw the genesis of the use of metal, down to the Iron Age and the coming of the Romans, when Herefordshire became part of the Roman Empire, and written history begins and prehistory ends. The object of this chapter has been to establish that many centuries before the Roman galleys crossed the Channel this county had been colonized and developed by successive waves of organised tribal populations, each governed by its own customs and rituals, who lived for the most part on the hill ridges,

whose main lines of communication with the outside world was by way of the Severn estuary, and who had close cultural and trading relationships with France, Spain and the Mediterranean. Much valuable archaeological material must still lie undiscovered in the valleys and wooded hills, but by the combined efforts of enthusiastic amateurs and professional archaeologists more and more light is constantly being thrown upon prehistoric man in Herefordshire.

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## The Herefordshire Area in the Roman Period

By D. R. DUDLEY, M.A.

TO the student of Roman Britain, Herefordshire is a term that has no meaning. To understand the nature of the Roman occupation in the general area, we must try to look through the eyes of the generals and administrators of a world-wide empire, who were responsible for its conquest and subsequent development. For them, it was a portion of the province of Britain which lay on the boundary between a lowland zone in which Romanisation was possible, and a highland zone where military occupation was the only course open. They first came to the area during the long campaigns to subdue the tribes of Wales, especially the powerful and warlike Silures. When, after more than thirty years' fighting, the process of "debellare superbos" (to overthrow the proud) had been achieved, the other side of the classical policy of Roman imperialism, "pacisque imponere morem" (to implant the habits of peace), came into play. The Roman administrators, like the modern geographer, recognised that most of what is now Herefordshire is a westward extension of the English plain, offering a fertile soil for settlement (although at that time covered by a dense forest), and offering also the iron deposits of the Forest of Dean, which had been worked by the Celtic peoples for more than a century.

To deal first with the military period. The invasion under Claudius took place in 43 A.D.; it was not until about 75 A.D. that the Silures and the Ordovices were finally overcome by Frontinus. He established the legionary base at Caerleon, and built the strategic roads and forts for the military occupation of South Wales. The military history of these thirty years of operations in the West Midlands is known in broad outline, although it is seldom possible to fill in the details with confidence. The first phase is marked by the establishment of a temporary frontier along the line of the Fosse Way about 47 A.D. This great strategic road, strengthened by forts and perhaps by temporary headquarters for the legions, ran through the territory of friendly tribes—the Dobuni in the Cotswold area, and the Coritani in the East Midlands. Beyond to the north and west lay great rivers and hostile people—the Brigantes beyond the Trent, the Silures and Ordovices beyond the Severn. Our concern here is with the latter. For some years after 47 A.D., under the leadership of Caratacus, they were on the offensive.

The first Roman counter-move came to the north-west, perhaps about 48 A.D., when Ostorius Scapula advanced to the Upper Severn, established a legionary base at Wroxeter, and pushed into North-East Wales. Trouble in East Anglia cut short this move, and the Romans did not regain the initiative until about 50 A.D. when they advanced to the Lower Severn and established a legionary base at Gloucester. To these years probably belong the Roman site at Worcester and the roads from Worcester to the Watling Street, one *via* Droitwich and the fort at Metchley, Birmingham, the other from Droitwich north *via* Greensforge



<p>Towns</p> <p>● First indicating permanent settlement.</p> <p>○ First of second.</p> <p>⊙ First of third.</p> <p>⊙ First of fourth.</p>	<p>Villa.</p> <p>○ Potteries.</p> <p>■ Permanent fort.</p> <p>□ Temporary fort.</p>	<p>□ Doubtful fort.</p> <p>— Road, course certain.</p> <p>- - - Road, course uncertain.</p>	<p>▨ Land above 400 feet.</p> <p>▩ Land above 1000 feet.</p>
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to Wroxeter. In 51 A.D. came an offensive across the Severn against Caratacus, and that battle "in the territory of the Ordovices" which the imagination of Victorian antiquaries places on every hill-top in the central marches of Wales. The fort at Upper Sapey, and the marching camp at Bromfield, near Ludlow<sup>1</sup>, mark the line of penetration up the Teme Valley which may well belong to this phase. Caratacus was defeated and his plan for carrying on the war from the territory of the Brigantes came to nothing; the Silures remained. Somewhere about 52 and 53 A.D. they were back on the Severn and beyond it; Gloucester was stormed and the commander killed; Ostorius himself died before he could fulfil his vow to extirpate the whole tribe. Under Didius Gallus (52-58 A.D.) the position on the Lower Severn was restored, but nothing more was attempted.

Suetonius Paulinus (59-62 A.D.) moved forward again from Wroxeter into North Wales. His campaign had almost reached its final objective in Anglesey, when the great rising of Boudicca (61 A.D.) recalled him to the unsuccessful defence of London and the cities of the south-east. The state of affairs on the Lower Severn at this crisis is eloquently illustrated by the refusal of the commander of the Second Legion at Gloucester to move to his rescue. It was fourteen years before the problem of the Silures could be taken up again, but this time it was to be solved. Julius Frontinus moved from Gloucester to Caerleon and from this strategic offensive base was able to over-run and subdue all South Wales. To his operations belong the road from Wroxeter *via* Caerleon (probably at first *via* Hereford and Monmouth rather than Kenchester and Abergavenny), and also the deep penetration north of the Black Mountain astride the valleys of the Wye and the Usk. The stages are marked successively by the signal camp on Little Mountain, near Brilley (perhaps associated with the lost "Gaer" at Michaelchurch on Arrow), and by the large and probably temporary camps at Clyro near Hay and Y Pigwn by Trecastle. The campaigns were followed by the construction of forts up the Usk Valley (Abergavenny, Brecon Gaer, etc.), and beyond into Radnorshire.

The military work of Frontinus was enduring, and to him also must go the credit for the beginnings of Romanised life in our area. Caerwent was founded as a political and cultural centre for the Silures about 75 A.D.; and there is evidence that the small market town at Kenchester began about the same time. From then onwards the Herefordshire area belonged to the civil zone of Britain while the Roman occupation lasted, a period of more than three hundred years. Nothing resembling a history of this period can be attempted; we know of no events, and almost no names of persons. It is even uncertain when the end came, although the evidence of coins (not in itself decisive) does not take us much beyond the last quarter of the fourth century, *i.e.* not much beyond the great Pictish inroads of 367 A.D. What can be done is to describe the several sites, and to attempt some kind of survey of human settlement. To do this something must be said of Romanisation in the surrounding areas.

To the south-east beyond the Severn at Gloucester, and covering the Cotswolds down to Bath, lay one of the richest parts of the whole pro-

<sup>1</sup>Recently discovered from the air. I owe this information to Mr. C. W. Phillips.



vince. Cirencester (Corinium) was in area the second city of Britain after London and its remains show it to have been one of the wealthiest. Nowhere are Roman villas more thickly set, and the famous sites at Chedworth and Woodchester show the degree of luxury attained. Due south the plain of Gwent also showed a high degree of Romanisation round Caerwent, as did the southern shore of the Bristol Channel in Somerset. Northwards beyond the Stretton Hills lay the lead-mining area of Shropshire and the plain around Wroxeter (Uriconium), the fourth city of the province. The Herefordshire area comes below all these in its degree of Romanisation. Even so, it is richer than the area to the north-east, beyond Worcester and across the Birmingham plateau as far as the Watling Street. There seems to have been virtually no settlement in the Severn Valley between Worcester and Wroxeter. To the west and northwards lay the military zones of Wales. The Romanisation of our area therefore came from Gloucester and Caerleon and to some extent from Wroxeter, and its main arteries of communication ran between these points from north to south. With this prelude, we turn to a geographical survey.

The chief Roman road in the area is that from Caerleon to Wroxeter, Iter XII of the Antonine Itinerary. I propose to describe it from north to south, largely because its course on the fringes of the Black Mountains in the south of the county is so uncertain. However, there is some evidence that it was actually constructed from the Wroxeter end; the alignments from Wroxeter to the Wye at Hereford suggest that this was so. It was certainly a military construction, and the elaboration of the bridge at Acton Burnell<sup>1</sup> is a fine piece of military extravagance. The road enters our area between Clungunford and Leintwardine. Here, on the north bank of the Teme near its junction with the Clun, is a small Roman station of about ten acres very like Wall on the Watling Street near Lichfield.

There is no doubt that this is the Bravinium of the Antonine Itinerary, and that the Brannogenium of Ptolemy is another place. The site is enclosed by rectangular earthworks with rounded corners, well seen on the west side and at the north-west angle. Elsewhere they may be traced, though the modern growth of the village has damaged them, especially in the last hundred years. The east part of Leintwardine church is set exactly across the Roman bank, and there is a striking difference in level between it and the nave inside the ramparts. Coins, pottery and roof tiles have turned up from time to time, especially in the churchyard, but the presence of the modern village has prevented excavation. It should be noted that the line of the Roman road is represented by High Street, and not by what is now called Watling Street, which is outside the eastern bank. Three sets of lynchets (cultivation strips) have been found near the site, but they may not be Roman. Further up the Teme Valley there are records of coin and pottery finds at Brampton Bryan and of what seems to have been a Roman villa at Stowe, near Knighton. No trace of a road is known.

<sup>1</sup>Recently discovered and excavated by the Shropshire group under Miss E. Sladdin. Unpublished.

From the south gate of Bravinium the road crossed the Teme—perhaps by a wooden bridge—and ran for four and a half miles across the Wigmore Valley on an alignment to the west end of Yatton Hill. Thence it joins the modern road through the Aymestry Gap to Mortimer's Cross. At this point a Roman road may have gone off to the south-west past Shobdon, Staunton-on-Arrow, Lyonshall, nearly to Michaelchurch-on-Arrow. None of this has been confirmed, but this line is at times a parish or county boundary, and is crossed by the Rowe Ditch near Pembridge. Miscellaneous Roman finds have been reported from Pembridge and Lyonshall, also from Presteigne and Stapleton Castle in the upper valley of the Lugg. From Mortimer's Cross, on Iter XII, there is an alignment of nearly nine and a half miles to the east end of Pyon Hill, passing Streetwood and Stretford, and forming a parish boundary much of the way. Thence the road ran to the east of Badnage Wood, and somewhere about Burghill Lodge was joined by the road running south-west to Kenchester.

Here is a problem. In the Antonine Itinerary the road to Caerleon goes through Kenchester and Abergavenny. But there are strong reasons to suppose that this is a later loop road, built to serve Kenchester, and that the original line lay through Hereford and Monmouth. In the first place, the whole alignment of the road from Mortimer's Cross has been towards a Wye crossing at Hereford. Secondly, the evidence for a Roman fort at Hereford, represented in the modern street plan, is substantial, and has recently been set out in an article in the *Woolhope Transactions*<sup>1</sup>. Such a fort, and the accompanying road, must have been built during the military phase.

Finally, there is the fact that the main street of Kenchester runs east-west, suggesting that the town originally developed along the line of the road from Stretton Grandison into Wales. The Hereford road from Burghill Lodge keeps the alignment past Portway and over the Hereford racecourse to cross the Wye close to Wye Bridge. Thence to Monmouth the surface of the Roman road has not been exposed, but it seems that the modern road follows its course for most of the way. It would thus pass close to the great hill fort of Aconbury and to the "tumps" at Wormelow and St. Weonards, where Roman coins have been found in the churchyard. The only other Roman object along this stretch is the altar in the church at Tretire, on which an individual called Beccicus has perpetuated his name by a dedication *Deo Trivio* (to the god of the cross-roads)—though which cross-roads is not known.

To resume on the line of Iter XII—the road passes from Tillington for two miles through Credenhill to the east gate of Kenchester. There we reach the most considerable and best explored Roman site in the area. It is certainly the Magn(is) of the Antonine Itinerary. The site is open, with a broad prospect to the south and south-west, above the floods and river mists of the Wye, on light gravel and sand with a good supply of water. Its history is that of British archaeology in little; the inroads of the people of Hereford in search of building stone from Tudor and

<sup>1</sup>Marshall, G. *The Defences of the city of Hereford*. (Trans. 1940, pp. 67-70.)

earlier times; the visits of the antiquaries, Leland, Camden, Aubrey, Stukeley; the stories of dwarf money and buried treasure among the country people; the clearing of the site for agriculture in 1810; the primitive excavations of "a party of gentlemen from Hereford assembled by Dean Merewether" in the 1840s; lastly, the excavations of Mr. G. H. Jack in 1912-13 and 1924-25.

Kenchester is a small town of about twenty-two acres, comparable in size with Alchester in Oxfordshire. This area is enclosed by roughly hexagonal walls of uncertain date, but probably third century A.D. The main street ran east to west, and has been explored for about 800 feet, the lines of two other cross streets are known. The foundations of eight private houses have been discovered. Most of them have a narrow frontage on the main street; towards the eastern end they closely resemble the oblong shops found at Wroxeter. On the south side of the main street the buildings were fronted by a portico. No temples or public buildings have been found, and the site has been singularly barren in inscriptions. The street plan cannot yet be reconstructed, nor is the site of the cemetery known, although single burials indicate that it may have been close to the east gate. Wall paintings and mosaics show that the place had the usual amenities of a Romano-British town; they show no sign of rising above even the average level of artistic taste in the province. The coin and pottery evidence show continuous occupation from the Flavian period to the third quarter of the fourth century, with a marked prosperous phase from about 250-350 A.D.

Although the details are thus unexpectedly meagre, the general picture is clear. Kenchester was a small market town, the economic centre of the surrounding countryside. The sequence of the Iron Age fort at Credenhill, the Roman town at Kenchester, and the Saxon town at Hereford is paralleled by the Wrekin hill fort, Uriconium and Shrewsbury. Whether Kenchester was also a political centre is uncertain. That the name had some regional significance is suggested by its probable survival in the Saxon tribe name *Magonsætae* and the place-name Maund, and in the Welsh *Meigiawn*. One would expect to find a number of buildings in the neighbourhood of such a town, but the only positive evidence for this is the well-known villa at Bishopstone, discovered in 1812. The mosaic pavement and other remains show this as the largest villa and most elaborate Roman building in the area. The sites of other buildings are suggested by wells of Roman date found at New Weir and Brinsop. Less certain are indications of Roman occupation at Credenhill and at Stretton Sugwas Court.

The western road from Kenchester is clear as far as Garnon's park, just before which it is crossed by Offa's Dyke. In the park itself, the surface has been exposed at two points (1951). Beyond, it joins the modern road, passes Portway, and is clear as far as Letton Court Farm. The exact line of the road is not known through Whitney and Rhydspence to the fort at Clyro, but the Wye may have changed its course a good deal since Roman times in this stretch. At Clyro the road crossed the river to run along the south bank, where it was known as *Y Ffordd Fawr* (The Great Road), and so to Brecon and Carmarthen.

We must now resume on Iter XII as far as Abergavenny. All is plain sailing to the Golden Valley, but in the wild broken country on the edge of the Black Mountains only a few indications of the course of the road are known. The Wye was crossed at Old Weir, whether by ford, causeway or bridge is uncertain. There are vague references to wooden piles having been found at low water, but nothing reliable. Beyond is a stretch known for centuries as "Stoney Street". It goes over Wormhill and past Street-house Farm, then over Brampton Hill (546 feet) to the Grey Valley, thence over Kerry's Hill (528 feet) to the Golden Valley at Bacton, where Roman coins have been found.

At this point several problems confront us. Old editions of the 6 inch map show a Roman road going by Tremorithic to Longtown in the Monnow valley, where the rectangular enclosure of the Norman castle is sometimes said to be built on Roman foundations. But nothing Roman has ever been found at Longtown, and the rectangular outer bailey of the castle is like that at other border sites, e.g. Kilpeck. Moreover, in the Golden Valley itself a stretch of Roman road has been uncovered in the railway station yard at Abbeydore running north and south, and higher up the valley on the west bank of the river an alignment of footpaths and lanes past Fine Street and Dorstone suggests a Roman road through the Golden Valley towards the fort at Clyro.

It therefore seems likely that the road from Kenchester joined this at Bacton and turned down the Dore Valley past Ewyas Harold to Pontrilas. Thence (though the indications are very slight) it seems to have kept west of the Monnow to the ford at Allt-yr-Ynys, thence west of the Honddu to Llanvihangel Crucorney. Coins were found in 1785 at Coedy-Gravel, near Walterstone. Beyond Llanvihangel Roman paving is said (1884) to have been seen in the grounds of Llanvihangel Court, thence the road probably ran east of the Gavenny, past Llantilio to Abergavenny. There is no doubt that this is *Gobannium*; although the site of the Roman fort is not known, it is presumed to be beneath the Norman castle. Hence Iter XII went south to Caerleon, and another road up the Usk valley to Brecon.

We now turn to the east-west road from Kenchester to Stretton Grandison. First comes an almost straight length of five and a half miles, part of which forms the northern boundary of the city of Hereford to the Lugg crossing, which was made at the same point as the modern Lugg bridge. Beyond the Lugg, the modern road diverges to the village of Withington, but the course of the Roman road is certain for a further three miles past Pomona farm to the railway, after which it seems to go through the fields a little to the north of Yarkhill to Stretton Grandison. Here it met at right angles another Roman road whose northern destination is uncertain, but which certainly goes to Gloucester on the south-east.

All attempts so far to trace the east-west route further to Worcester have failed. The only known Roman site in this direction is the pottery kiln near Leigh Sinton. But between the Lugg bridge and Stretton Grandison in the valleys of the Lugg, the Frome and the Leadon, we have been traversing a region more thickly set with Roman sites, known and supposed, than any other part of the area. All are known through



chance finds, several in the past few years. There has been no systematic excavation. At Hillcrest, Marden, native pottery of the period 200-400 A.D., imitating Roman ware, was found in 1951. The site is on the summit of a low hill above the Lugg Valley, about a mile from Sutton Walls and with a wide prospect on all sides. At The Lawns, Nunnington, Roman pottery and a culvert were reported in 1930. At Westhide (Field 88 on O.S. 25") Roman pottery and tiles were found in 1925. The castle at Monkhide is another possible site and Roman sherds are often picked up in the fields above Tarrington. Further up the Frome Valley there are slight indications of Roman coins and pottery at Bromyard. The alleged Roman milestone, said to be *in situ* in the parish of Withington, I have been unable to trace, and it is likely that this has been confused with the eighteenth century milestone called The White Stone.

Stretton Grandison has long been known as a Roman site and was once the favourite candidate for the "lost" Cicutio of the Ravenna geographer. The whole problem of the Ravenna place names has recently been examined by Professor Ian Richmond<sup>1</sup>, who makes it a strong case for identifying the Brecon fort with Cicutio, and Stretton Grandison with Epocessa. Earlier accounts of Stretton Grandison speak of a square earthwork on the hill, but all Roman objects have been found on low ground towards the River Frome, mostly in excavations for the Hereford and Ledbury canal. A Roman steelyard, now in the Hereford Museum, is the most interesting of these. In 1940 pottery was found in Budbury meadow in the parish of Canon Frome. The evidence suggests that Stretton Grandison was a small road settlement like Leintwardine. An intensive survey of the whole neighbourhood is urgently needed.

The road from Stretton Grandison to Gloucester is followed by a modern road for most of the eight miles to Dymock. Roman sites are known on either side. At some time, "prior to 1848", Roman coins were found in the garden and moat of Mainstone Court; in 1930 much Roman pottery of the period 250-350 A.D. was found at Marley Hill, near Ledbury. On the west of the road about a mile away, is the well-known site at Putley, where the restoration of the church in 1876 revealed the existence of a Roman villa under the present graveyard. In the valley of the River Leadon a site, probably that of another villa, was found in 1908 by Mr. G. H. Jack. The place-name Greenway is close to this. From Dymock the road goes to Newent and thence to Gloucester. This road cannot be traced far to the north of Stretton Grandison. A footpath and hedge boundaries seem to take it as far as Lower Eggleton, but beyond this all is uncertain. The O.S. map of Roman Britain takes it tentatively past Burley Gate to join the undoubted stretch of Roman road near Stoke Prior, but this is quite unproven.

This Stoke Prior stretch seems, in fact, to be yet another cross-country road from north-west to south-east, keeping just to the east of the Lugg and the Wye. There is no doubt of the character of a stretch of about two miles, which includes the place-name Stretford and the site of Blackwardine. Here in 1881 the cutting of the Leominster-Bromyard railway

<sup>1</sup>Archæologia, Vol. 93 (1949), pp. 1-50.

exposed a number of Roman objects. Report also speaks of "a large number of skeletons", but much of the evidence was destroyed by workmen. Pottery, a kiln, and a millstone were found in 1921. The road continues north of Blackwardine by field boundaries to Stockton Cross, but here it is lost in the grounds of Berrington Hall, and its final destination is unknown. South of Blackwardine it may be traced beyond Hill Hole Dingle, Bowley Lane and Saffron's Cross. Isolated stretches further south suggest that it went to Ariconium *via* Bodenham, Withington, Mordiford and How Caple.

The identification of the Roman site near Weston-under-Penyard with the Ariconium of the Antonine Itinerary is highly probable, if not certain. Nor is there any doubt about the highly specialised nature of the site in connection with the iron mines of the Forest of Dean, although comparisons with Birmingham and with Merthyr Tydfil have been somewhat freely drawn. The site was first known when Bury Hill was enclosed and levelled in 1785, and a collection of objects found there was shown to the British Archaeological Association in 1870. Among these were nine British coins (their number has since been increased) including some of Cunobelinus, which are interesting as showing links between the area and south-east Britain and thus helping to explain the movements of Caratacus. The only excavations were those by Mr. G. H. Jack in 1922, which were confined to two buildings only. Roman objects have been found in fields covering an area of eighty-two acres, but neither the size nor indeed the site of the town itself has been determined, and it is not certain whether it was fortified.

The evidence of coins and pottery tells much the same story as at Kenchester—a Flavian occupation on a small scale, and an active period between 250-350 A.D. In Combe Wood, Aston Ingham, a coin hoard found in 1811 belongs to this period. The so-called Roman tombstone built into the wall of the church at Upton Bishop has been taken as a stray from Ariconium, but the Roman character of this object is doubtful, and it may well be a piece of pre-Conquest sculpture. There is very little evidence for a post-Constantine occupation. Here, if anywhere in the district, is a site for further exploration, which, to be comprehensive, must include a survey of the whole iron working of the Forest of Dean, distinguishing if possible between medieval and Roman sites. Again the Roman name survives in the district name Archenfield and in the Welsh Erging.

From Ariconium a road apparently went to Newent and on to Gloucester; another went south through Lydney to Caerleon. Beyond Ariconium, a road ran to Monmouth, probably using the ancient crossing of the Wye at Walford. Here there are several sites which need further study. On the east bank of the river is a poorly preserved earthwork in the grounds of Walford Court. A mile away, in Bishop's Wood, Kerne Bridge, is the site of the biggest hoard of Roman coins (18,000) ever discovered in the area. These were found in 1895 and a number of them are now in the Hereford Museum. The great bulk are of the period of Constantine, and the coins seem to have been deposited not earlier than 340 A.D. "A rectangular camp" is said to have been discovered nearby,



with some Roman pottery; unfortunately it was levelled for agricultural purposes. Two miles away, on high ground (659 feet) at Great Howle, is a small rectangular earthwork which *may* be a Roman signal station. To the west of the river a tessellated pavement and coins were found in the parish of Whitchurch. A coin hoard was found in 1817 at Coppet Wood Hill. Traces of iron-workings, whether Roman or medieval, are plentiful on the west bank of the river between Goodrich and Bridstow.

If the Roman settlement pattern described above is compared with a modern land utilisation survey, such as that contained in *English County* (Faber & Faber, 1946), some interesting results are obtained. There were four areas of comparatively dense settlement in the Roman period—those around Kenchester, Leintwardine, Stretton Grandison and Weston-under-Penyard. All of these would be in category 1 if plotted on the land classification map (p. 51).<sup>1</sup> This is "good quality land", defined as highly productive when under good management and possessing the following characteristics: "Site: (a) not too elevated, (b) level, gently sloping or undulating, (c) favourable aspect. Soil: (d) deep, (e) favourable water conditions, (f) texture, mostly loams, but including some peats, sand, silts and clay." One of the main corn-growing areas in the county today is that around Kenchester; the other "on the light arable soils of the Ross area" would include Weston-under-Penyard. The Frome Valley near Stretton Grandison is now one of the chief centres for hops.

The same picture is seen from another angle if we plot the Roman sites on the Geological Mantle map (p. 17), which shows the division of the county into physiographic regions. The Leintwardine district is in the Wigmore basin, Kenchester and Stretton Grandison in the central lowlands, Weston-under-Penyard in the south-eastern lowlands. In the other physiographic regions, there are very few Roman remains in the north-west edge country, the Black Mountain foothills, and the south central hills; they are almost wholly absent in the north-eastern uplands, the Malvern foothills, and the Woolhope dome. The evidence for the area may be considered rather thin, but it confirms what holds good for most of lowland Britain—that the Roman period shows a marked advance in settlement from the uplands to the heavier lowland soils. But this settlement pattern is of the familiar Roman type—market towns, villas, and the associated roads.

To complete the picture we must consider the question of the hill forts, more than thirty of which are known in Herefordshire alone. Unfortunately only a very few of these have been excavated. At Sutton Walls, Dr. Kenyon reports that pottery shows continuous occupation from the late Iron Age to the fourth century A.D. There is little sign of Roman ware until the second century; there is a good deal of pottery made in the native tradition, but copying the Roman forms. Similar instances of native ware and Roman pottery have been found at Poston camp (Vowchurch), the Breidden Hills in Shropshire, and Coygan camp, Carmarthenshire. They point to continued occupation of the hill forts during the Roman period by a people only superficially influenced by Roman

<sup>1</sup>Of "English County".

ways of life. However, much more excavation must be done before we can assess this element of the population of Roman Britain. The foundation of churches<sup>1</sup> in the sub-Roman period at Moccas, Hentland, and elsewhere in Archenfield, suggests the existence of a population not indicated by the purely Roman evidence. While we can go some way towards constructing a population map of the area in Roman times, gaps in the evidence are painfully clear.

The late Professor Haverfield, who twice surveyed the Roman antiquities of the county, complained of "the general inadequacy of the investigation into Roman sites hitherto carried on in Herefordshire"<sup>2</sup>. Nearly forty years later Mr. (now Sir) Mortimer Wheeler took a more sanguine view in saying that "Herefordshire cannot complain of its share of Romanisation, a share which, when the moment arises, could easily be increased by a little judicial exploration"<sup>3</sup>. It was in the hope of supplying this judicial exploration in some measure that the Herefordshire Survey group started work in 1949 as part of the Archaeological Survey of the West Midlands carried out by the University of Birmingham. I am happy to acknowledge how much this article owes to the work of the group in the past few years. The keenness and local knowledge of its members are qualities indispensable to a survey of this kind.

How many problems await attention will be clear from what has been said. Much remains to be done at Kenchester, more at Ariconium; Stretton Grandison and Stoke Prior are known only from casual finds. Not a single villa site in the area has been the object of scientific excavation. The Roman roads need the kind of intensive work recently done on those in Kent by Mr. S. D. Margery to determine their course, alignment, and date of construction. The core of the tribal territories of the Dobuni and the Silures is of course known, but we do not know where to put their boundaries, or, more properly, the edges of their area of influence. The problem of the occupation of the hill forts in Roman times, of crucial importance for the whole province, is nowhere more important than in Herefordshire. It would be pleasant to think that the solutions of these and other problems will be known long before an article comes to be written for the second centenary of the Woolhope Club.

<sup>1</sup>Especially the dedication to St. Dubricius. See E. G. Bowen, *Antiquity*, Vol. 19, pp. 175-186.

<sup>2</sup>Victoria County History, Herefordshire, Vol. I.

<sup>3</sup>Royal Commission Ancient Monuments, Herefordshire, Vol. III, p. liv.

## *The Domesday Manors in the Hundreds of Hezetre and Elsedune in Herefordshire*

By LORD RENNELL OF RODD, K.B.E., C.B.

### I

THE Balliol Herefordshire Domesday manuscript published as Vol. LXIII (New Series Vol. XXV) of the Pipe Roll Society under the editorship of P. H. Galbraith and the late James Tait contains much additional material for the identification of Herefordshire Domesday manors with modern sites and place names. The publication of this unique and valuable manuscript in collotype and transcript with notes, provides an opportunity for bringing up to date the identification of the manors in the two Domesday Hundreds of Herefordshire with which the author is familiar.

The manuscript is attributed to 1160-1170 A.D. Additional folios with some information about holders, lands and danegeld refer to tenancies, *etc.*, of about Henry I's reign. They are exceedingly valuable for the history and organisation of Herefordshire land in the twelfth century.

The Balliol manuscript records certain alterations in tenures of manors since 1086; but, what is much more interesting as evidence for the identification of hitherto unidentified, or doubtfully identified manors, it gives, both in text and marginalia, variant spellings which are of great assistance, and in certain cases of essential importance.

In the inventories of Hezetre and Elsedune Hundreds which follow, the first names are those of the manors as recorded in the original Domesday text, and as transcribed in the *Victoria County History of Herefordshire*. Variants or modifications of these names from the *BDB* text follow in brackets except where the variations are insignificant. Then follow the modern place names of these manors. The manors are grouped, as in the Domesday texts, according to holders of lands and in the order of the original inventory. Particulars of pre-Domesday holders and of the occupation, *etc.*, of the estates are only given where these seem to be of importance.

The identifications of manors with modern place names follow J. H. Round in *VCH* and commonly accepted belief or tradition except where otherwise stated. The results of local research by the author in the Lugg and Hindwell Valleys are included. Some of these conclusions were published in the *Transactions of the Radnorshire Society* in 1944 - Vol. XIV. As a result of further thought and work, some of those conclusions have since been modified. The writer is obliged to Mr. W. H. Howse of Presteigne for a number of suggestions in this analysis in addition to the references in his published work.

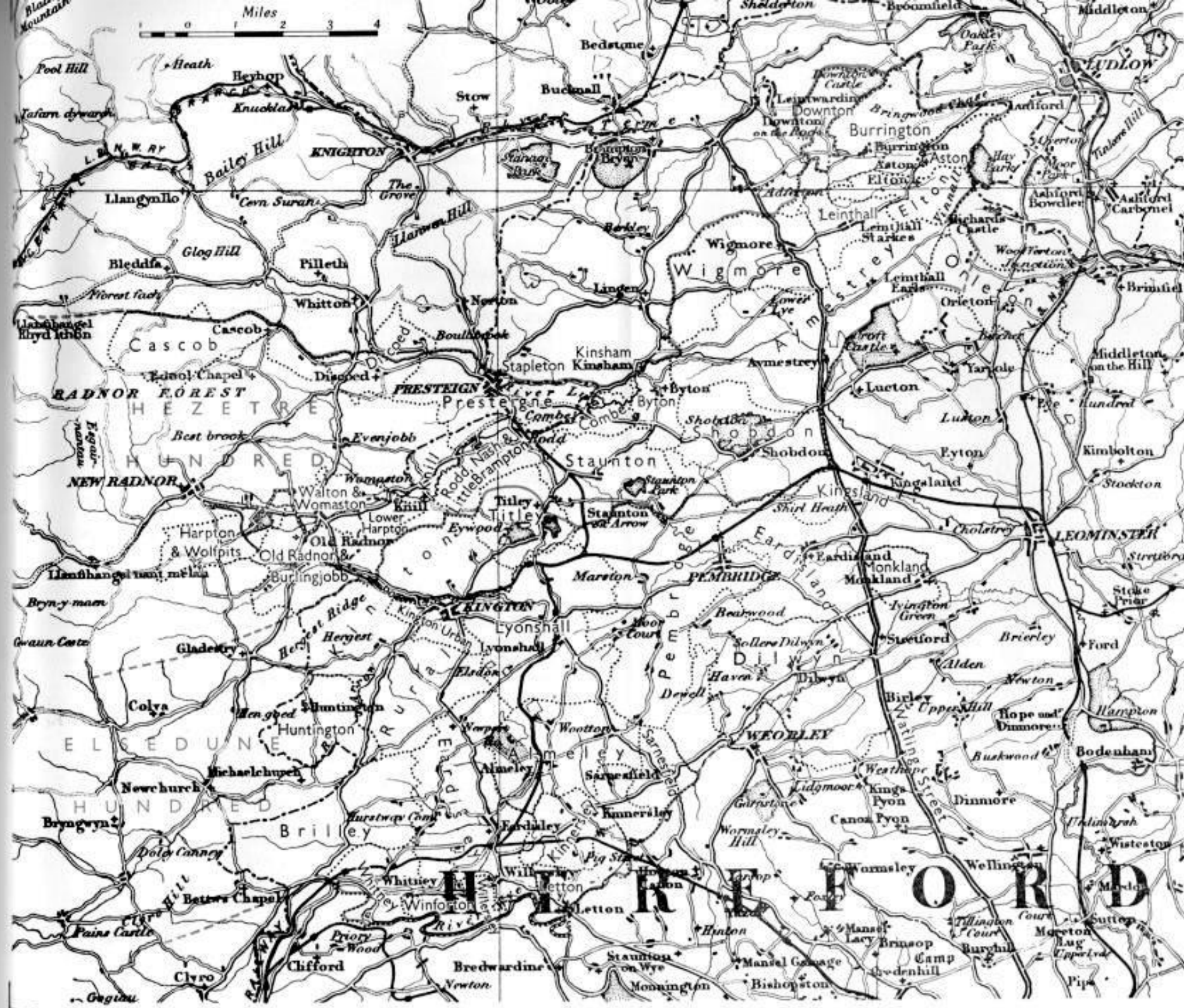


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MAP OF N.W. HEREFORDSHIRE TO ILLUSTRATE THE DOMESDAY HUNDREDS OF HEZETRE AND ELSE DUNE

Prepared by the Royal Geographical Society from early editions of the relevant Ordnance Survey sheets, by kind permission of the Director-General of the Ordnance Survey



## ABBREVIATIONS

<i>DB</i>	...	...	Domesday Book
<i>BDB</i>	...	...	Balliol MS of Herefordshire Domesday. Pipe Roll Society Vol. LXIII (New Series Vol. XXV).
<i>VCH</i>	...	...	Victoria County History of Herefordshire Vol. I.
<i>EKWALL</i>	...	...	The Oxford Dictionary of English Place Names: Second Edition.
<i>TRE</i>	...	...	'Tempore Regis Edwardi' (the Confessor).
<i>BANNISTER</i>	...	...	Herefordshire Place Names

## II—THE EXTENT OF HEZETRE AND ELSEDUNE HUNDREDS

The boundaries of Hezetre and Elsedune Hundreds are not easy to define because they both disappeared soon after Domesday as hundreds and became substantially merged into the later Hundreds of Wigmore and Huntingdon, names which do not appear as those of hundreds in Domesday. There is no reason to suppose that the boundaries of these later hundreds were necessarily the same as those of the Domesday divisions. The names Wigmore and Huntingdon of course both figure as Domesday manors: Hezetre and Elsedune do not.

The complete identification of the geographical boundaries of the two hundreds is, however, not possible, because in the eastern part of the areas large tracts of land were held by the Great Manor of Leominster which is catalogued in Domesday without reference to the hundreds in which the estates of the manor were geographically situated. The manor of Leominster is in fact extra hundredal; nevertheless many of the estates, which went to make up the whole, lay in different hundreds in northern Herefordshire. Moreover, the Great Manor was not a solid block of extra hundredal land. An accurate determination of the eastern boundaries of Hezetre and Elsedune must await a study of the estate units of the manor of Leominster in the light of the additional evidence contained in *BDB*. The boundaries towards Leominster of the geographical Hundreds of Hezetre and Elsedune are therefore conjectural: the particular arguments which apply are given at the appropriate places in this analysis of the manors.

The general line of the hundred boundaries in this and other areas, shown on the map, follows existing parish boundaries. The justification for this is that, except where certain parishes are obviously of recent creation, as for instance at Kington in the divisions of Kington Urban and Kington Rural, the manor boundaries seem to coincide in so many cases (especially in Hezetre Hundred) with the parish boundaries, and indeed with the existing farm and estate boundaries of to-day, that the antiquity of many parish boundaries must be accepted. Where the hundredal boundaries on the map do not follow parish boundaries, the exceptions are particularly noted.

Since all but one of the Hezetre manors have been identified, and there is no evidence of manors in the Hezetre area belonging to another hundred, there is, *prima facie*, no justification for looking for Elsedune manors in Hezetre, or vice versa. The same applies to manors of other neighbour-

ing hundreds. In simple English: it is idle, as it appears, to look for manors catalogued in the Domesday texts in one or other of these hundreds elsewhere than within the geographical confines of these two areas, insofar as their boundaries can be ascertained.

Following the catalogue in Domesday of the lands of the Great Manor of Leominster is a list of the estates entered as "he terre infra scripte jacebant ad Leofminstre tempore regis Edwardi" (*BDB* text). Whereas the Leominster lands which were held by Queen Edith are recorded in Domesday as held by King William, these 'undermentioned' lands which 'jacebant ad' Leominster are recorded as held by various tenants in *DB* and *BDB*; but they are generally not catalogued under the various hundreds in which some of them were obviously located. Now, certain of these lands were clearly in Hezetre or in Elsedune Hundred geographically speaking. An instance is Wapleton (Wapley) between Staunton-on-Arrow and Presteigne, held like the neighbouring hundredal manors in Hezetre Hundred by Osbern fitz Richard. Another instance is half a hide held by Ralph de Mortimer at Wigmore where he had the castle and two hides in the hundred catalogue of Hezetre. Some of these extra hundredal estates which 'jacebant ad Leofminstre' are mentioned where appropriate in the catalogues which follow of the manors of the two hundreds under examination.

'Hezetre' has been interpreted as 'at', or 'of the Hazel Tree' (c.f. *EKWALL*), a traditional place for the hundredal meeting dating from before Domesday. No trace of the place survives, nor do any memories or traditions. A clue to the approximate site of the hundredal meeting place may perhaps be found in a description of the boundaries of Herefordshire in an inquisition of the reign of Henry III. This 'circumambulation' of the shire is as detailed as it is interesting and important. It is entitled "Inquisicio de divisas per XXVII" (C 145/19/12 Public Record Office) and calendared in 1916 by its position and handwriting as of the thirteenth century. It refers to Thomas de Fraxino who was alive in 1260 and was subinfeudated as Lord of the Manor of Presteigne by Roger de Mortimer of Wigmore. After describing the boundary of Herefordshire in the Wigmore neighbourhood, the document reads (in translation): "... in the Hundred of Stretford, the valley of the Lugg, otherwise land of the Lord of Richard's Castle, ought to come (i.e. to the hundred court) at 'Rogedicke subtus Penebrugge' and record pleas of the Crown and elect men for the Assizes and come before the Justices which (service) has been withheld by Roger de Mortimer since the beginning of the (Baron's) war." The thirteenth century Hundred of Stretford was much larger than the Domesday Hundred of Stretford and absorbed a part of the southern side of Hezetre Hundred when Wigmore Hundred took over the northern and western parts. 'Rogedicke' is now called Rowe Ditch which can be traced from Milton Cross Roads (*vide infra* Milton Manor No. 23 in Hezetre, page 144) to Pitfield Farm south-west of Pembridge. This Rowe Ditch may well be a later alignment of Offa's Dyke when the Rushock (near Kington)—Lyonshall line was abandoned by Offa in 784 for a more easterly trace. The part of Rowe Ditch which lay in Hezetre was that part between Milton Cross Roads and the Arrow. It can correctly be

described as "subtus Penebrugge". The reference to the hundredal court in this thirteenth century inquisition into the boundaries of Herefordshire might well be an indication that the hundredal meeting place 'at the Hazel tree' was somewhere in the Milton—Staunton-on-Arrow—Stockley area—not an unlikely central point for Hezetre Hundred.

The western boundary of Hezetre Hundred is not, and cannot be, accurately defined. It was on the March of Wales and largely lay in what for the English point of view was no-man's land. In documents not much later Domesday manors in this area are described as in 'Herefordshire in Wales'. Several of the western manors of the Hundred of Hezetre are to-day in Radnorshire, which, as a county, only came into existence much later. Some of these manors lay west of Offa's Dyke which runs through the hundred between Discoed and Lyonshall. Many place names in that area, including some of those of the Domesday manors which are to-day in Radnorshire, have 'English' names. They are evidence of 'English' occupation and of a static English organisation west of Offa's Dyke for a considerable period before the Norman Conquest. These manors, some of them quite important and valuable estates, are recorded as having paid geld 'tempore regis Edwardi'. It follows that they must have been organised before Edward the Confessor's time, when they were assessed, and held by known persons and paying geld. They are evidence, inasmuch as they had evidently 'English' names, that the boundary fixed by Offa along his Dyke involved a surrender of once 'English' land to Wales which had again become 'English' land by, and probably some time before, the days of Edward the Confessor. The same considerations are true of the many Elsedune Hundred manors which lay west of the Dyke.

The northern boundary of Hezetre Hundred ran approximately along the Lugg river above and below Presteigne and included the present parishes of Cascob, Discoed and Presteigne. Possibly the parishes of Whitton and Pilleth were also included. The land north of the Lugg, including apparently the parishes of Norton, Stapleton and Kinsham, with perhaps that part of Presteigne parish which to-day is north of the river, was in the Domesday Lenteurde (Leintwardine) Hundred of Shropshire. The manors of Norton, and Ackhill in Presteigne parish north of the Lugg, are specifically recorded in Domesday as in Lenteurde Hundred. Lingen and Brampton Bryan were also in Co. Salop. These, like Stapleton and Kinsham, later came into Herefordshire: Norton went into Radnorshire. The north-eastern end of the Hezetre Hundred included manors in the present parishes of Downton, Berrington, Aston, Elton, Leinthall (Leinthall Starks and Leinthall Earls), and probably most if not all of Aymestrey. Orleton manor seems to be recorded as in the hundred, but, if so, this would be certainly only true of the western end of the parish which contains Orleton itself. Richard's Castle or Auretone was in Cutenstorne Hundred, as was Ludford near Ludlow, now in Shropshire. This fixes the north-eastern confines of Hezetre with reasonable accuracy. The geographical boundary ran along the line of hills from Mortimer's Cross south of Aymestrey to Richard's Castle. Only Orleton lay on the south-eastern slopes of this prominent topographical feature. To the south-east the land belonged to the Great Manor of Leominster. The southern bound-

dary seems to have followed that of Shobdon and Staunton-on-Arrow parishes and perhaps included a salient of Pembridge parish which now appears between them. Pembridge parish looks like a more modern territorial division made up of several old manor units.

The manor of Lestret (Street Court) south-east of Shobdon was also in Hezetre. Street Court to-day is in a corner of Kingsland parish which for the most part lies east of the Kenchester-Leintwardine Roman road (Watling street). Lestret manor just west of the road was probably originally not associated with Kingsland (*vide infra*, p. 138, and at No. 3, p. 137). Nevertheless, Lawton in Kingsland, one of the manor which 'jacebant ad' Leominster, is catalogued in Hezetre.

Further west the southern boundary of Hezetre divided Titley parish into two. In this parish there were two Titley manors, one in this hundred and the other in Elsedune which fixes the division between the two hundreds with considerable accuracy. The boundary line ran from Titley Church up the track to the Green Lane and along the crest-line dividing the Arrow and Hindwell valleys. Here the boundaries of the Hezetre manors of the Hindwell valley, those of the parish boundaries, and of the present day farms and estates, all still coincide.

Elsedune Hundred lay south of Domesday Hezetre Hundred. It included the present parishes of Whitney (on Wye), Winforton, Willersley, Letton, Kinnersley, Eardisley, Almeley, Sarnesfield, Huntington, Kington Urban, Kington Rural, Lyonshall, and a part of Titley parish with one manor. In *DB*, Sarnesfield is not listed in the hundred, but among the lands which 'jacebant at Leominstre TRE'. Elsedune Hundred also contained the manor of Dilwyn, generally assumed to be Dilwyn, north-east of Weobley. The latter, Wilbelai manor, in Domesday was in Stretford Hundred, which should geographically also have contained Dilwyn. But for Dilwyn, Elsedune might have consisted only of what appears as the western half of the hundred shown on the map, and co-terminus along its northern boundary with Hezetre as far as Titley.

Dilwyn is to-day a large parish. North of Stretford brook, which is crossed by Watling Street at Stretford Bridge just east of the road, are Dilwyn proper and Sollers Dilwyn. Stretford brook, running east-north-east from Sarnesfield to Stretford bridge, leaves Dilwyn half a mile to the north and Weobley half a mile to the south. But an area south of Stretford brook between Weobley and the Roman road containing Alton Court is to-day in Dilwyn parish. It would not be surprising if this part of Dilwyn parish south of Stretford brook had once been part of the important Weobley manor which was the 'caput' of the de Laci Manors and is recorded in *BDB* (annexed folio 42 at p. 80/81) as 'valuit tempore Henrici regis x libras'. If then Dilwyn was part of Elsedune, excluding, perhaps, the southern part of the parish, the southern boundary of the Hundred, after following Stretford brook from Sarnesfield to Stretford bridge, reached as far east as the Roman road. A small salient of Weobley parish between Sarnesfield and Dilwyn north of the brook must have been included.

West from Sarnesfield the southern boundary followed the boundaries of a small part of Kinnersley, and of Letton parishes. It then ran along the

Wye and included the Whitney manors. In the great bend of the Wye south of Whitney the present parish boundaries cross the river, leaving two small areas significantly opposite Whitney Court and Old Whitney Court in that parish<sup>1</sup>. It is reasonable to assume that these two tracts of land were formerly also in Elsedune Hundred. Brilley parish lay in Wales.

All this constitutes a geographically logical southern boundary for the hundred, assuming that Dilwyn was not an enclave of Elsedune in other territory. But this southern boundary of the hundred also presupposes that the present large parish of Pembridge was in Elsedune.

Pembridge has created confusion in the records of Domesday Herefordshire, because there are two Pembridges in the county: the place and parish lying between Kington and Leominster, and Pembridge (Castle) at Welsh Newton in the southern part of the county west of Ross-on-Wye near the Usk. In the author's view *VCH* identifies quite correctly the 9 hide manor of Penebrugge held by Alured of Marlborough as that at Pembridge Castle. At this entry Alured is also referred to as holding Ettone which *VCH* identifies as Eaton Tregoz in Foy parish 3 miles north of Ross-on-Wye. Both these manors formerly held by Earl Harold were in Archenfield, but catalogued under Bremesse Hundred. While Foy was later in Greytree Hundred which took the place of Bremesse, Welsh Newton was later in Wormelow Hundred, but might well have been in Bremesse at Domesday. There is not enough reason to agree with the commentators in *BDB* that Penebrugge was 'misplaced' in Domesday in Bremesse, and was really Pembridge in northern Herefordshire: they admit that the textually juxtaposed Ettone was in the south. Welsh Newton-Pembridge and Eaton Tregoz are logically grouped together as lands of Alured dependent from and in the neighbourhood of his castle of Ewias Harold.

But if Domesday Penebrugge is Welsh Newton-Pembridge, what has happened to the rich lands of the northern Pembridge, the large parish between Kington and Leominster? The answer is that the present-day parish of Pembridge contains the land of several important manors which were separately mentioned in Domesday, and catalogued partly as in Elsedune Hundred but mainly among the Leominster Manor lands. These are, notably (i) Luntley, one of the manors which 'TRE jacebant ad Leofminstre' and just in Dilwyn parish where it forms a salient two miles south of Pembridge and east of Sarnesfield parish (*c.f. supra*), (ii) Weston, two miles south-west of Pembridge (*q.v. infra* at No. 19, p. 142), possibly (iii) Leen Farm and Court of Noke (*q.v. at* No. 3, p. 137), and perhaps (iv) an estate at Moorcot, one mile south-west of Weston. These estates would more than account for the land included in the present parish boundaries of Pembridge since a large part of the area north of the bridge over the Arrow at the village of Pembridge, east of Milton and south of Shobdon was bog, is still very wet, and would probably not have been geldable land in Domesday.

The next problem is Eardisland parish north of Dilwyn and east of Pembridge. In Domesday the King is recorded as holding Lene in Lene

<sup>1</sup>Due to a change in the course of the river



Hundred (sic), the only reference to a hundred of that name in the shire. The Roman road to Leintwardine seems to have been in the main the eastern parish boundary of Dilwyn and Eardisland parishes. If Eardisland parish is placed in Elsedune there is a logical eastern boundary for the hundred all the way from Stretford bridge to Mortimer's Cross, except where Street Court (Lestret Manor) now in Kingsland parish east of the road forms a little pocket of this parish west of Watling Street, and Lawton manor forms another pocket east of the road. If it can be assumed that Lestret manor in Hezetre Hundred was originally not in Kingsland parish, then the eastern boundaries of both hundreds and of the relevant parishes probably ran along the Roman road from which two important 'manor roads' connected the Hindwell and Lugg Manors with what has remained to this day an important north-south artery of communication. Lawton, east of the Roman road, was in any event a manor held of the King's ferm, and not necessarily therefore in Hezetre Hundred geographically.

Since "Lene Hundred" could not have been a hundred within the meaning of the word in Domesday, the entry under the King's land of Lene manor in "Lene Hundred" must be considered a mistake; perhaps Elsedune is meant as is suggested by this description of the eastern part of that area.

If the conjectural eastern extension of Elsedune Hundred as far as the Roman road is not acceptable, though it seems not incompatible with the Domesday texts and the lie of Hezetre Hundred, then the eastern boundary of the hundred must include at any rate part of Dilwyn parish and that part of Pembridge where the Milton and Weston manors lay.

The name of Elsedune Hundred survives in Elsdon south-west of Lyonshall and south-east of Kington. Elsdon stands on high ground over 650 feet O.D. on a direct road from Lyonshall to Bollingham, at the crossing of a direct track from Kington to Almeley. It is *prima facie* an old site and appropriate for a hundred meeting place. About a mile west of Elsdon, near the Kington-Eardisley road, is a mound of undetermined date and dilapidated condition. The Almeley-Kinnersley-Eardisley group of manors lie on the southern slopes of the Elsdon high land. In the opposite direction is the Arrow valley with the Huntington-Kington-Titley-Lyonshall group of manors. Geographically Elsdon is a suitable centre for both groups. It is less convenient of access for the manors on the Wye; still so for the eastern area of the hundred.

### III - THE LANDS OF HEZETRE HUNDRED

#### THE KING'S LANDS

DB says that the King had nine waste manors of 19 hides in Herefordshire. A marginal note in BDB refers to nine manors 'in forestis' which William the Norman held. The 'forest' is evidently such a 'forest' as lay 'ad foras', like Radnor 'Forest' is to-day and not necessarily a woodland forest.

Of King William's nine manors so described two were in Hezetre, Berchelincoppe and Radenoure: the only two he held in this hundred.

He held many more than seven other estates large and small in Elsedune Hundred which were also waste in addition to one, Wennetone, which was no longer waste in Domesday. The total of the King's waste lands is considerably more than nineteen hides. The entries under Elsedune Hundred of the King's waste manors refer more particularly to lands which were Earl Harold Godwinson's.

The summaries of the King's lands are not at all clear. Nor is it clear, in considering the King's lands or those of other large holders, which of the estates were held as manors and which were only parcels of lands or parts of manors held by other tenants: the wording of the Domesday records is not always precise on this point.

#### (1) Berchelincoppe (Berchelinhop) = Burlingjobb:

Two hides 'were and are waste' with land for four ploughs.

This manor, which lies in Radnorshire a mile south of Old Radnor, was well west of Offa's Dyke. The place name seems to be 'English'. Before Domesday it was held by one Sol. In BDB it is recorded as then held by R(alph) de Sancto Audoeno, a half-knight, who also, later again, was a sub-tenant of certain of the manors in the Hindwell and Lugg valleys which he held of superior manors at Stapleton and Presteigne. Like the neighbouring manor of Old Radnor (No. 2 below), it was lost to Herefordshire soon after the great survey.

#### (2) Raddrenove (Radenoure) = Old Radnor:

Fifteen hides.

This was Earl Harold Godwinson's head manor in the area and traditionally contains, near Old Radnor church, his castle in the form of a moderately well preserved motte and bailey. The headquarters of the Godwin manor was in the author's view more probably at Castle Nimble below Old Radnor church with the manor arable fields lying between this site, Walton cross-roads and Womaston. There is plenty of room for the arable of so important a manor as one of 15 hides, with land for 30 ploughs. It is equally natural that King William should have confiscated this important estate of Earl Harold, which traditionally was his military headquarters on this part of the March, and from which he very likely pacified it during the wars with Gruffydd in the period immediately preceding the Norman invasion. DB records that Hugh l'Asne stated that Earl William (fitz Osbern) had given him the land before Domesday. Politically, however, King William was bound to seize the manor for himself and keep it, even though he let Ralph de Sancto Audoeno have Burlingjobb next door by the time of the BDB record.

#### RALPH DE TODENI'S LANDS

#### (3) Leine.

Five hides, one paying no geld because it was in demesne.

The Leine or Lene manors create a problem which can appropriately be discussed here. 'Lene' is derived from the name 'Leon' which also occurs in Leominster and Lyonshall, and is not derived from 'Land' or 'Lane' as Round (in VCH, c.f. EK WALL) supposed.

In this part of Herefordshire three 'Leine' or 'Lene' manors are mentioned. In the first place 'Rex tenet Lene' annotated in *BDB* (f. 5, p. 7) "Kingsleane", which King Edward held. It was of 15 hides with 5 ploughs and there could have been 3 more, 21 villeins and 9 bordars with 17 more ploughs, 10 oxmen, 2 serfs, 6 coliberti (freed serfs) and two mills: evidently a large and important manor. This estate figures in a long list of King William's holdings, the last mention of a hundred being Greytreet with Kingston and Lugwardine manors. It does not follow that Lene-Kingsleane was intended to be inventoried, nor could all the manors listed in this group in fact have been, in Greytreet (Greitrewes) Hundred. Actually many of the King's manors are listed as if they were extra-hundredal. This Lene or Kingsleane was evidently Kingsland: the present parish lies for the most part east of Watling Street and thus east of Hezetre Hundred.

In connection with Kingsland manor *DB* goes on to say that 'de hoc manerio', Ralph de Mortimer holds one 'membrum' (i.e., an outlying estate, *c.f.* wording of the *DB* text referring to the outlying estates of the Great Manor of Leominster (at *BDB*, p. 9, f. 6) of 2 hides at Merestone (*c.f.* at No. 4) and Roger de Laci, one manor of 2 hides called Hope, and another of 1 hide called Strete (*c.f.* at No. 21), and another of 1 hide called Lautone which is Lawton in Kingsland. Finally, Ilbert fitz Turolde 'de eodum manerio' held half a virgate, which was called "Alac", and was held of him by 'unus procarius' (*c.f.* No. 40 *infra*). All this fits in with Lene-Kingsleane being Kingsland and has a bearing on a small part of Kingsland parish lying west of Watling Street (*vide supra* p. 134).

Following these entries comes the heading "In Lene Hundret", the only reference in *DB* or *BDB* to a hundred of that name. Evidently there is some confusion or mistake. Only one manor, also called "Lene", referred to below, is entered under this hundred. If "Lene Hundred" means anything it must mean an area generally known as "Lene" which included Lene-Kingsland, Street, Lawton (*c.f.* at No. 20, p. 143), a Hope, an unknown estate called Alac and the next following Lene.

Immediately under the "Lene Hundred" entry is "Rex tent Lene Morcar (comes) tenuit". It was of 15 hides with 3 ploughs in demesne, 19 villeins, 9 bordars, 2 radchen with 16 ploughs, 6 serfs, 2 bondwomen, 6 coliberti and 2 mills. It is evidently not the same manor as the King's Lene-Kingsland. *BDB* has an informative marginal note: 'Orleslene xv hid'. *VCH* refers to both these Lene manors as Kingsland, but Round in his introduction (*VCH*, p. 304) identifies one of them as Eardisland and adds that "one cannot say which is which". *BDB* provides the answer that the Lene in "Lene hundred" which Morcar held as Orleslene was Eardisland. Assuming that there was by Domesday no such a territorial division as "Lene Hundred" there is no reason to suppose that Lene-Eardisland (Earl's Lene or Orleslene) was not in Hezetre Hundred with its eastern boundary on Watling Street. It may well be that the entry "Lene Hundred" is thus just a clerical error for Hezetre Hundred and erroneously transcribed in *BDB*. *EKWALL* is probably right that there was at one time a district called "Lene" extending from Leominster to Lyonshall which included the three Lenes: the *DB* entry of a "Lene Hundred",

though technically an error, recalled the earlier district name known no doubt to the surveyors. Kingsland and Orleslene are referred to in *BDB* f. 40 as held by Hugh the Forester circa 1140.

We now come to the third 'Leine' (*sic*: not Lene) among Ralph de Toden's lands and referred to above as No. 3 in this catalogue of Hezetre manors. In *DB* this manor is listed next after the heading "In Hezetre Hundred" and follows immediately the entry relating to Ralph de Toden's 'caput' of Clifford castle. There seems to be no doubt that this 'Leine' was in Hezetre. Against this entry of Lene *BDB* has a marginal note: "In Monecheslene v h'd'Castellion". The full entry reads that Ralph de Toden (Tosny) held Leine and (the abbey of) St. Peter of Castellion from him. Elinar and Ulfchetel held the estate as two manors. It had 2 ploughs, 10 villeins, 8 bordars, with 7 more ploughs, 3 serfs and 1 free oxman, also a mill which rendered 11/- and 25 'stiches' of eels.

After this entry come Ralph's Elsedune manors. The *BDB* marginal note identifies his Leine as Monkland, a small parish east of Watling Street and contiguous for a brief stretch with Eardisland parish, though for the most part adjoining on the west Stretford parish.

*Prima facie* Leine-Monecheslene is Monkland and the eastern boundary of Hezetre Hundred therefore lies, at any rate at this point, east of Watling Street. There are, however, certain other significant facts to be recorded.

Just north of the Arrow bridge at Eardisland is an old mound site called "Monk's Court" nearly contiguous to the mediaeval building called Staick House containing a hall dating probably from the fourteenth century which traditionally was a sanctuary of refuge in wartime. The 15 hide manor of Eardisland (Orleslene) probably lay south of the village which is very low-lying at the present bridge and old ford over the Arrow. It is probable that the site of the manor was either at the moated mound near the church of Eardisland or at Burton Court which is a partly mediaeval house on the high ground away from flood level about a mile south of the village. The hamlet of Monkland in Monkland parish lies a couple of miles east of Eardisland and Burton Court. North of Monk's Court and Staick House in Eardisland village is Street Court (Lestrete Manor, *c.f.* No. 21, p. 144). It would be tempting to think that Leine Moncheslene lay north of Monk's Court in Eardisland and just south of Street Court manor and thus in Eardisland parish and west of Watling Street; Monkland hamlet, common, and parish would in that case seem to have their name either from some later outlying lands of the monks of St. Peter of Castellion, or indeed from some outlier of the Priory of Leominster.

But this is not the end of the story! Just north of Pembridge and about a couple of miles west of Eardisland is a farm called Leen farm. The present farm is too low-lying to have been a Domesday or pre-Domesday manor but it is adjacent to a fine piece of land known as the Court of Noke south of Staunton-on-Arrow and south of the Arrow river. Court of Noke has not been identified as a Domesday manor but its name suggests great antiquity. Noke is derived from the early English name 'at the oak tree' (*c.f.* Nash at No. 31, p. 146). The land between Court of Noke and



Leen farm could well have been a pre-Domesday manor, and there is certainly enough old arable for a 5 hide manor.

While therefore Ralph de Toden's Lene-Monecheslene is *prima facie* Monkland, and if it is, then the eastern boundary of Hezetre Hundred at this point runs east of Watling Street, a case could be made for seeking the manor near Eardisland and Pembridge. In this case Hezetre Hundred has a logical and definite eastern boundary along Watling Street, and while Eardisland and Kingsland are the Earl's Lene and the King's Lene, Monkland would merely mean 'Land of Monks' with Monecheslene surviving either in Monk's Court and/or Leen Farm.

#### RALPH DE MORTIMER'S LANDS

##### (4) *Wigmore Castellum* = *Wigmore*:

Two hides.

The castle was built by Earl William fitz Osbern in the waste called Merestun or Meirstone, which one Gunnert held *TRE*. The demesne had 2 ploughs and 4 serfs and the borough (which Earl William made) 'which was there' rendered seven pounds. Ralph also held half a hide at Wigmore which (*TRE*) 'jacebat at Leofminstre' (c.f. No. 3 *supra* and No. 22 in *Elsedune*).

##### (5) *Duntune (Duntona)* = *Downton*:

Four hides: of which two paid no geld.

It had 2 ploughs, 3 villeins, 3 bordars with half a plough, 7 serfs, a fishery, a wood and a 'haia' and was worth 30/-.

##### (6) *Boritune (Boritona)* = *Burrington*:

Three hides, 1 virgate: with 3 ploughs, 7 villeins, 4 bordars with 3 ploughs, 9 serfs and a small wood, worth 40/-.

##### (7) *Hesintune ("id est Asciston")* = *Aston*:

Three hides 'formerly held by five men as three manors', worth 30/-. The marginal note in *BDB* makes certain the formerly presumed identification of Hesintune with Aston four miles south of Ludlow.

##### (8) *Elintune (Elintona)* = *Elton*:

Two hides with 2 ploughs, 6 villeins, 3 bordars and 2 'radchehtes' (or in *DB* bordars and so evidently more or less equivalent) with 3 more ploughs and 4 serfs: worth 20/-.

##### (9) *Lenhale (Lenehale)* = *Leinthall*:

Two hides with 2 ploughs in demesne: 7 villeins, 10 bordars, 2 radmen and one smith with 5 more ploughs between them as well as 1 serf and 3 free bovarii: worth 20/- formerly, now 40/-.

##### (10) *Lintehale (Lentehale)* = *Leinthall*:

Four hides with 3 ploughs in demesne and 10 villeins, 7 bordars, 3 radch', with 7 ploughs, 6 free bovarii and a mill, worth 30/-. Formerly the

Queen's and worth 50/-, now 100/-. These two considerable manors are represented by Leinthall Starkes and Leinthall Earls.

The high values of this group of manors in the Wigmore area are worth noting, especially in comparison with those of many others in the same part of the shire. Numerically Ralph de Mortimer may not have had so many manors as for instance Osbern fitz Richard, but their income was evidently much higher if the assessments are any guide. Does this have a bearing on the rise of the Mortimers and the decline of Osbern fitz Richard's family hereabouts?

##### (11) *Lecwe (Lege)*.

Half hide with one plough and 3 bordars: worth 5/-.

The *BDB* variant, *Lege*, both in the text and margin, makes the identification of the name with the modern name of Lye certain. Here again *BDB* corrects what was probably a mistaken transcription in *DB*. But there are in the Wigmore-Aymestrey area Upper and Lower or Nether Lye. The former is west of Aymestrey: the latter about 1 1/2 miles south-south-west of Wigmore and one mile north-east of Upper Lye. The other of these two Lyes was held by Osbern fitz Richard (see Nos. 36 and 39, pp. 147-8). Geographically it is more probable that Ralph de Mortimer held the Lye nearest Wigmore, while Osbern held Upper Lye, which fits in with the order of the inventory of his lands on which the satisfactory evidence of identification of certain of his other manors rests, as will be shown hereafter. Ralph de Mortimer's *Lecwe* or *Lege* is therefore probably Lower Lye and not Upper Lye as *VCH* suggests with a query mark. This identification on other grounds accords with the conclusion of the commentator in *BDB*, p. 95.

##### (12) *Camehop (Camehope: Camehopa)* = *Conhope* = or *Covenhope*.

One hide.

This is referred to in *Feudal Aids* in 1316 as 'Comenhop et Leye' evidently Conhope (also called sometimes Covenhope) and, at that date, Upper Lye, or part of it. Conhope or Covenhope is one and a half miles south-east of Upper Lye and about a mile north of Shobdon, which was definitely Ralph de Mortimer's country. The proximity of Upper Lye to Conhope is doubtless what led Round (in *VCH*) to suggest that Ralph de Mortimer's *Lecwe* or *Lege* was Upper Lye. Nevertheless the identification of the latter with Lower Lye as suggested above is more likely to be correct. Conhope was a small but prosperous manor worth only 10/- but with 2 ploughs and a smith as well as 7 bordars, 1 serf and 1 free bovarius.

##### (13) *Scepedune (Sobedona)* = *Shobdon*:

Four hides.

*Scepedune* was at one time quite wildly identified as Stapleton near Presteigne. There is no evidence to substantiate this and the variant, but clearly more correct spelling in *BDB* makes the identification with Shobdon as certain as it is topographically inevitable. Again an important manor worth 7 pounds with a wood and 12 ploughs, 20 villeins, 20 bordars, 6 serfs, 1 radchenist and 1 smith.



(14) *Stantune* (*Stantone: Stantona*) = *Staunton-on-Arrow*:

Two hides, worth 40/- with 6 ploughs. Staunton manor lay north of the Arrow in Staunton parish. Court of Noke (*c.f. supra* p. 139) only half a mile south, *i.e.*, south of the river and in Pembridge parish.

(15) *Leidecote* (*Ledicote*) = *Lidecote* (near *Shobdon*):

One hide, worth 10/6d.

There was a second Lidecote manor held by Roger de Laci also in Hezetre Hundred—see No. 22 below.

In addition to these manors, Ralph de Mortimer held land "in":—

(16) *Pelelei* (*Pulelai*) = probably *Pilleth on the Lugg*, five miles upstream of *Presteigne*.

Two hides.

Round's doubtful identification in *VCH* is probable.

But *Pilleth* was really in Wales, and, if still in Hezetre as the catalogue suggests, must have represented the extreme north-westerly extension of the hundred. The Lugg valley, however, was obviously Mortimer country, even though Osbern fitz Richard did own some manors around *Presteigne* and mainly on the south bank of the Lugg.

(17) *Ortune* (*Hortona*):

Two hides.

Round in *VCH* has identified this as probably *Orleton* east of *Wigmore*. It does not follow if this identification is accepted that the whole of *Orleton* parish ought to be included in Hezetre. *Orleton* itself is on the western side of the parish. Its proximity to Osbern fitz Richard's 'Richards Castle' evokes some doubt about Round's identification, though of course Ralph de Mortimer did hold the important neighbouring manors in the *Leinthalls*, *Aymestrey*, *Elton*, *Aston*, *etc.*, parishes. In *BDB* 'Hortona' occurs as a variant to *Ortune* as well as to Osbern's *Herton-Harpton* in the *Radnor* basin and the extreme western manor of his *Hindwell* valley group. Ralph de Mortimer could have had two hides at *Harpton*: there is plenty of room for this holding as well as Osbern's 3 hide manor. The latter was specifically described as 'waste' (*vide* No. 30, p. 146); Ralph's *Ortune* was also waste. But *Orleton* could not be described as aptly as *Harpton* as 'wasteland' on the *Marches of Wales* (see below). On balance *Harpton* seems rather less likely than *Orleton* as Ralph de Mortimer's *Ortune/Hortona*.

(18) *Mildetune* (*Mildetona*) = *Milton*:

Three hides (*c.f.* No. 23).

Though Osbern's *Milton* manor was waste but 'is now' worth 20/-, Ralph de Mortimer's *Milton* land was still waste at *Domesday*.

(19) *Westune* (*Westona*):

Two hides.

Generally assumed to be *Weston*, south-west of *Pembridge*, between *Lyonshall* and *Dilwyn* (*v.* Nos. 23 and 29). But both these places were in

*Elsedune Hundred*, as must have been *Weston*. The boundary between the two hundreds hereabouts was evidently the *Arrow River* two to three miles north of *Weston*. An alternative identification of *Westune* is *Whitton* between *Pilleth* and *Presteigne*. This site was certainly in *Hezetre Hundred* and could more aptly be described as one of a group of lands, in the *Wigmore country*, on the *Marches of Wales*.

The nine hides are collectively described as waste land on the *Marches of Wales*; they were formerly seven manors held by five thanes with land for eighteen ploughs. In this part of the inventory Ralph de Mortimer is also recorded as holding fifty-seven acres and the whole of 'the wood in *Lega* in the manor of *Grifin*'. This is *Grifin fitz Mariadoc* in *Domesday*, or, as we should perhaps say, *Gruffydd ap Meredudd*. This *Grifin* or *Gruffydd* in *DB* held seven manors, one of which was called *Lege* (*v.* No. 39). His manor is recorded in the commentating notes on *BDB* as "Grifin's manor of *Lege* in *Hezetre Hundred*, which is vaguely identified in *VCH* as *Ley*, may possibly be *Nether* (or *Lower*) *Lye* in *Aymestrey*. . . . .". Ralph de Mortimer's small property here has been noticed (*vide supra* No. 10: *Upper Lye* – *Lecwe* – *Lega*) earlier under his fief. The later interest of the *Blez* family in *Upper Lye* might be thought to suggest that it, rather than *Nether Lye*, was *Grifin's* manor, but the annotated name of *Putangle* (in the margin of *BDB* under *Grifin's* lands), whether of a person or a place, does not favour this idea. The annotation in the margin of *BDB* "Require in tenementa *Grifin* fil' *Meriadoc*" refers the reader to the same lands under this tenant's holding.

All this evidence still points to Ralph de Mortimer's *Lecwe* – *Lega* – *Lege* being *Lower Lye*, and that at *Upper Lye* there were two manors held by Osbern fitz Richard (*v. infra* at No. 37) and *Grifin fitz Mariadoc* respectively (*v. infra* at No. 39). Furthermore, Ralph de Mortimer had his holding of 57 acres and a wood at *Upper Lye* as well, which would help to account for the above-mentioned juxtaposition of *Conhope* and (*Upper*) *Lye* in *Feudal Aids*, more especially when it is remembered that the de Mortimers had become possessed of many of the *Scrob-de Say* lands by the early thirteenth century.

#### ROGER DE LACI'S LANDS

(20) *Lautune* (*Lautone: Lautona*) = *Lawton*:

One hide with one plough in *demesne*, 4 serfs and 4 bordars with 1½ ploughs: worth 20/-.

*Lawton* is in *Kingsland* parish. This manor is evidently Roger de Laci's land in the royal manor of *Kingsland* referred to in *DB* and *BDB* in the context of *Lene* (*c.f.* No. 3). The entry there is to the effect that 'de hoc manerio', *i.e.*, *Lene-Kingsland*, Ralph de Mortimer held one 'membrum', that is a separate area of land, at *Merestone* (*c.f. supra* No. 4) of two hides on which *Wigmore castle* was built, and that Roger de Laci held, of the same King's farm, one manor of two hides 'called' *Hope*, another of one hide 'called' *Strete*, and a third of one hide 'called' *Lawton*. That this last manor catalogued under *Hezetre Hundred* should lie in *Kingsland* parish east of *Watling Street* would not in itself disturb the conjectural eastern

boundary of the hundred inasmuch as it was of the ferm of the King's manor and not a separate and directly held estate. Nevertheless Lawton, and Street (next below) are described as manors and not 'membra'.

Of the King's ferm Roger de Laci also held one half hide which 'unus porcarius' held *TRE*, and which land (? the half hide, or else the whole of Lawton) Earl William had given to Walter de Laci.

The land called "Alac" (*v. supra* at No. 3) was half a virgate which Ilbert fitz Turolde held and which formerly 'unus (? another) porcarius' had. These important tenants were apparently interested in quite small holdings too.

(21) *Lestret = Street (on the Roman road to Bravinium):*

One hide with 3 villeins.

Formerly King Edward's and given from the King's ferm by Earl William to Ewen the Briton. Half paid no geld being of the King's domain, *c.f.* above and Kingsland (at No. 3); the other half paid. It was held by Earl William at Domesday of Roger de Laci. Street, though now in Kingsland parish, is west of Watling Street.

(22) *Lidecote = Ledicote:*

A second manor here: the other was held by Ralph de Mortimer (*v.* No. 15).

One hide and 1 plough and 1 man with his own plough. Formerly waste: now worth 10/-. There is room in the area for two manors.

OSBERN FITZ RICHARD'S LANDS

(23) *Mildetune (Mildetone: Mildetona) = Milton:*

Two hides.

This is evidently Milton manor. The other Milton estate was held by Ralph de Mortimer (*v.* No. 18, p. 142), but only as 'land' of three hides in Milton and described as waste on the Marches of Wales. Nevertheless there is room on the ridge for two small manors. Osbern's manor, probably the main manor of two hides at Milton House, is also described in *DB* as woodland having been waste but 'now' being worth 20 shillings. So many of Osbern fitz Richard's lands are described as 'still' being waste at the time of the Domesday survey that those which 'were' waste but were again geldable are worth noting.

(24) *Boitune (Boitone: Boitona) = Byton:*

Two hides.

This was worth 12/- but 'now' 20/-: near the Presteigne—Shobdon road, overlooking Byton bog.

Now follows a list of eleven manors on the Marches of Wales which 'were' and 'are' waste in Domesday, and never paid geld. These manors are all in the Hindwell valley and on the Upper Lugg around and upstream of Presteigne.

(25) *Bradlege (Bradelega) = Rodd:*

One hide.

The identification of this manor with The Rodd or La Rode, apart from the position which the name occupies in the catalogue of this group of Osbern's manors (for which see below), is based on (i) the similarity of the name 'Bradlege'—a broad 'Leah' or clearing (originally 'Leah' in Old English, being an open place in a wood) and 'La Rode', also a clearing in Old English (*c.f.* *EK WALL* at pp. 55, 278 and 372); and (ii) the existence of field names on The Rodd manor farm called 'Bradley's' above the hamlet of Rodd Hurst where the original clearing in the wood probably was. The reason for the survival of the 'Bradley' field names on this land is argued in greater detail than is possible here in the *Transactions of the Radnorshire Society*, Vol. XIV, 1944. Round's queried identification in *VCH* of Bradlege with Broadheath east of Presteigne is topographically impossible since that land which always was 'heath' in later records, had no available arable land, and was (and is) liable to flood from the confluence of the Hindwell and Lugg streams.

(26) *Titlege (Titelega) = Titley:*

Three hides.

This is one of two Titley manors, the other one of which in Elsedune Hundred was also held by Osbern fitz Richard as three hides. The existence of two manors at Titley in two different hundreds is important for determining the boundary between the two hundreds, which ran between them, quite logically, leaving Titley I in Hezetre Hundred on the land around Titley Court, and the other, Titley II, around Flintsham and Eywood in Elsedune Hundred.

(27) *Bruntune (Bruntone: Bruntona) = Little Brampton:*

One hide.

(28) *Chenille (Chunulla) = Knill:*

Two hides.

(29) *Hercope (Herchopa) = Lower Harpton:*

Half hide.

This identification, apart from the topographical argument described below at the end of this group of manors, relies on the invariable association in mediaeval and Elizabethan records of Hercope with Knill manor, with which it eventually became merged. The name (Lower) Harpton has nothing to do with Harpton Hertune (*vide infra* at No. 30). The name is found in various forms in later records as Herecpton and Hercopton and quite evidently derives from the name of Herrock Hill below which this half hide manor lay, contiguous to, and virtually inseparable from, the lands of Knill. This is a new identification and replaces the obviously mistaken identification suggested by the author in the *Transactions of the Radnor Society* of 1944.

(30) *Hertune (Hertone: Hortona)* = quite evidently *Harpton*:

Three hides.

The Welsh name for Harpton was *Tref y delyn*—the Harp Township. It is referred to as *Tre Delyn* in the fifteenth century (*c.f.* No. 18).

(31) *Hech (Heth)* = *Nash*.

One hide.

The name *Hech* = *atten Ash* = *Ash (tree)* = *Nash* (*EKWALL* at p. 32) = "At the Ash Tree".

The associated family is in later records indiscriminately referred to as *de Nasche*: *de Naisse*: *de Frêne*: *de Fraxino*. This is now a generally accepted identification though subsequent to Round in *VCH*.

(32) *Clatretune (Clatreton: Clatretona)* = *Clatterbrune*:

Two hides.

On the western outskirts of Presteigne, at the crossing of the Clatter Brook. This identification is also post-Round in *VCH* but is obvious from the site and fits in with the topographical order of the inventory.

(33) *Querentune (Querentone: Querentona)* = at *St. Mary's mill, just east of Presteigne*:

One hide.

This identification, which is now submitted for the first time, is based on deduction. The site is the only one which fits in with the topographical order of the manors, between *Clatretune* and *Discoed* (*v.* at No. 34, *infra*). Between *St. Mary's* mill and the western end of modern *Presteigne* are two field areas which conform to the general layout, in shape and size, of the pairs of arable fields peculiar to this group of *Hindwell* and *Lugg* valley manors. *St. Mary's* mill house on the *Presteigne* – *Discoed* road is not very old and clearly never was a mill house: it is too far from the river and there are no mill leats in its vicinity. The Turnpike Trustees in 1802 refer to the place as 'St. Mary's mill barn'. But the *Lugg* in this stretch had several mills, notably a site on the river below the house, and the name evidently means the 'tun of the quern, or quern stone, or mill'. The occurrence of typical local old field shapes, the presence of old mills on the river below the house, the survival of the name of 'St. Mary's mill house' which never itself was a mill, and the occurrence of the name of the manor in the inventory between those of *Clatretune* and *Discoed* are strong presumptive evidence for locating *Querentune* Manor on the eastern outskirts of *Presteigne*. Available and suitable manor arable land north of the *Lugg* does not provide an alternative site for *Querentune* since the *Lugg* here was the boundary between *Hezetre Hundred* in the Herefordshire and *Lenteurde (Leintwardine) Hundred* in Shropshire (*c.f.* *Eyton's Antiquities of Shropshire*, Vol. XI, p. 343).

(34) *Discoed* = *Discoed*:

Three hides.

The manor was probably near *Maes Treylow* a little west of *Discoed*. If so, *Offa's Dyke* runs between *Maes Treylow* and *Discoed*, and this

manor is therefore just west of the *Dyke*. *Discoed* itself is up a cwm and the land is too high for a Domesday manor. The land below the cwm is liable to flood: only at *Maes Treylow* is there enough land for the arable of a three hide manor.

(35) *Cascope* = *Cascob*:

Half hide.

No other particulars are given in Domesday of these eleven manors save their being and having been, waste on the *Marches of Wales* and never having paid geld. Then comes *Osbern's* manor of:

(36) *Lege (Lega)*:

Half hide.

This is, as already stated, probably *Upper Lye* rather than *Lower Lye* (*c.f.* argument at No. 11), and not as written by Round (in *VCH*), 'Ley'. A full note by the commentator of *BDB* deals with a marginal annotation in that text to the effect that by 1160-80 A.D. this *Lege* was held as half a hide by *Adam of Arundel* subsequent to *Osbern's* tenure. The argument at *BDB*, p. 119, does not bear on the topographical identification of this 'Lege' with the *Lye* where *Griffin fitz Mariadoc* had a manor, and *Ralph de Mortimer* also held his 57 acres and a wood apparently in association with his manor of *Conhope* or *Covenhope* (*vide supra* No. 11 *et infra* No. 39).

The order of record of *Osbern fitz Richard's* manors in *Hezetre Hundred* conforms to that which an inspection on the ground would produce, starting from *Osbern's* 'caput' at *Richard's Castle*. The order, following the old road connecting these manors, and still quite evident to-day would be, as recorded: *Milton*, *Byton*, *Rodd*, thence a diversion of a couple of miles from *Rodd Hurst* to *Titley I (Titley Court)*; north over the hill to *Bradley's* fields on *The Rodd* manor, along the old manor track to *Little Brampton*, *Knill*, *Lower Harpton*, and *Harpton*, then back east again by the north bank of the *Hindwell* to *Nash* ford. Continuing northwards but on the south side of the *Lugg*, the sequence should, and does, record, in order, *Clatterbrune*, *Querentune* at *St. Mary's* mill, *Discoed* and *Cascob*; then along the north bank of the *Lugg* to *Upper Lye* and so back to *Richard's Castle*. This is the order of a route which does not involve crossing either the *Hindwell* or the *Lugg* where they are anything more than ditches, except on the return journey where the route crosses the *Lugg* at *Aymestrey* ford or *Mortimer's Cross*. Once this order of listing is realised and understood, the identifications of *Hercope*, *Querentune* and *Lege* (*Upper Lye*) all fit in beautifully.

Of these manors *Cascob*, *Harpton* and *Lower Harpton* lie west of *Offa's Dyke*, as do the manors of *Old Radnor* and *Burlingjobb*. *Discoed* – *Maes Treylow* is practically on the *Dyke*.

(37) In *Hezetre Hundred* in this *Hindwell* valley area, *Osbern fitz Richard* is also recorded as having held 'Wapleton' as the gift of the King. *Wapleton* is recorded under the King's lands which belonged to the great manor of *Leominster*. *Wapleton* is evidently *Wapley*, a holding of



2 hides, at the hamlet of Stansbach near Staunton-on-Arrow, itself in Hezetre Hundred, on the slopes of Wapley hill where there is land for a manor of this size.

#### HUGH L'ASNE'S LANDS

##### (38) *Bernoldune (idem)*:

Two hides.

This and the small holding(s) of "Alac" are the only entirely unidentified manor lands in Hezetre Hundred. Bernoldune is one of four manors of Hugh l'Asne's in Hezetre and Elsedune Hundreds. The other three are in the latter hundred around Eardisley and Chickward: they include another Lege, unidentified for the present but almost certainly in that area in Elsedune (*vide* Nos. 32 and 33 in Elsedune list). Bernoldune is written Bernaldeston in 1428. It contained a large wood of unrecorded dimensions and a 'haia' but was otherwise waste. In the margin of *BDB* and in a later list of holders of lands Bernoldune is recorded as held by William de Braose as 2 hides.

#### GRIFIN SON OF MARIADOC'S LANDS

##### (39) *Lege (idem)* = *Lower Lye*:

Three hides.

Under this entry it is recorded that before Domesday, Ouen (Owen) and Elmer held Lege as two manors which accounts for Osbern fitz Richard (*see* No. 36, p. 147) also holding a manor in this area, as well as Ralph de Mortimer's 57 acres and a wood of this, Griffin's manor. The two manors were originally given by Earl William fitz Osbern before the Conquest to 'King' Mariadoc. King William remitted the payment of geld to 'King' Mariadoc and afterwards to his son.

##### (40) *Alac*:

One hide.

Among the lands which 'jacebant ad' Leominster Griffin held 'Alac' as 1 hide which 'was and is' worth 10/-. It is not listed in a hundred. The only other 'Alac' was in Lene of the King where Ilbert fitz Turol had half a virgate (*vide supra* p. 138). Circumstantially these two were probably in the same area, namely in the Kingsland - Aymestrey district. The small areas involved are not vital to the boundaries of the hundred.

##### (41) *Lutele (Lunteleie Luntelie)* = *Luntley, in Pembridge*:

Two hides.

One plough in demesne, a 'prepositus', 4 bordars, 2 bovarii with 2 ploughs: formerly worth 40/-, 'now' 30/-. Held by Ilbert (? Lotariensis) who also held Dilwyn: so identified with a query in *VCH*. In 1243 Luntley was held of the honour of Dilwyn (*sic*: *BDB* p. 87) which is logical. This seems to substantiate the inclusion of at any rate part of Pembridge parish, with Dilwyn, in Elsedune Hundred (*c.f.* p. 135, *supra*). This was an important manor, in a very arable part of Pembridge parish. It was

one of the 'terrae' which 'jacebant ad' Leominster, and is consequently not listed in a hundred.

Later in the Domesday texts Durand of Gloucester is recorded as holding Lutelei in Cutestorn Hundred (*c.f. in re* Laysters *ad* No. 24 Elsedune Hundred) which has been regarded as Luntley. This Lutelei, however, is associated with Laysters between Leominster and Tenbury and is evidently not Luntley in Pembridge.

Although this accounts for all the recorded Hezetre Hundred manors, with, it is submitted, satisfactory identifications except for Hugh l'Asne's "Bernoldune" and the "Alac" holdings, there remain one or two other points worth discussing.

That the northern boundary of Hezetre Hundred was the Lugg River, west of Presteigne, is clear from the record of the Shropshire Domesday. Hugh l'Asne is therein recorded as holding Norton and Knighton 'in capite' from the King. Norton is just north of Presteigne. North of the Lugg hereabouts Osbern fitz Richard held Achel, which can be satisfactorily identified as Ackhill, also just north of the Lugg and only about a mile from his manor of Querentune between St. Mary's mill house and the western houses of Presteigne and equally near his manor of Discoed. Both Ackhill and Norton are recorded as in the Lenteurde (Leintwardine) Hundred of Shropshire.

*DB* records two cases of a 'domus defensabilis' at 'Herdeslege' (Eardisley) which was outside the hundred (of Elsedune) organisation, and at 'Walelege' (recorded as held by Gilbert fitz Turol) in Elsedune Hundred. There is a good deal of temptation to associate this 'Walelege' with the group of Willey sites, two to three miles north by east of Presteigne, and, since there is among these no obvious site for a 'domus defensabilis', to seek the latter at Stapleton. Here was quite early a castle of the manor of Richard's Castle and honour of Burford. Stapleton later became an important head manor from which many of Osbern fitz Richard's Hindwell and Lugg manors depended. While the identification is tempting, the Willey and Stapleton sites cannot be included in the Domesday Hundred of Hezetre, geographically at any rate, when, as we know, Norton was in the Lenteurde Hundred of Shropshire, and the Lugg hereabouts was both the hundred and the shire boundary. Willey and Stapleton were thus in Lenteurde Hundred and so in Domesday Shropshire. But even if they were in Domesday Herefordshire like the Leges and Wigmore, in no case could Willey and Stapleton be in Elsedune Hundred except as an enclave within Hezetre or Lenteurde Hundreds, since Elsedune as it can be identified from its manor names in *DB* and *BDB* lay wholly south of Hezetre Hundred. Incidentally 'Walelege' with its 'domus defensabilis', though held by Earl Harold before the Conquest, was granted to Gilbert fitz Turol who held no land in Hezetre at all and only Walelege in Elsedune. (*See* No. 31 in Elsedune Hundred for further comments about Walelege and its 'domus defensabilis'.)

The absence of any reference in *DB* to Presteigne, or indeed the absence hitherto of any early reference to the name has been the subject of a good deal of speculation. In the folios annexed to the text of the *BDB* Domesday record there is, however, a reference to the fact that Osbern fitz

Richard held seven hides 'in Prestehemed'. These folios are referred by the editors of the Balliol manuscript to tenancies of the reign of Henry I, say 1128-39. Whether the entry refers to certain but obviously not all of Osbern's manors listed in the main body of the text of the Domesday record, or whether these seven hides 'in Prestehemed' are additional thereto and acquired by him after Domesday, is somewhat doubtful. What is, however, now clear is that Prestehemed did exist, probably as 'the household of Priests' (which the name is said by *EKWALL* to mean) in the lifetime of Osbern fitz Richard, and therefore almost certainly at the time of the Domesday Survey (*c.f.* Howse in *Radnor Soc. Trs.* XXI, pp. 48/9).

#### IV - THE LANDS OF ELSEDUNE HUNDRED

King William held a group of sixteen estates mainly in the western part of the hundred, of which eleven were Earl Harold Godwinson's and three King Edward's forfeited lands. The other two manors were also held by Saxons. While many of Harold's manors in Hezetre and Elsedune were in the western parts of these hundreds and so the more exposed to the devastation of the wars with Gruffydd ap Llywelyn, it is noteworthy that more of Harold's manors than of any other tenant's lands prior to Domesday are described as 'waste'. In particular the distinction between the description 'wasta est' and 'wasta fuit (*TRE*), et est' may be noted.

##### THE KING'S LANDS

###### (1) *Witenie* = *Whitney*, on *Wye*:

'Wasta fuit et est': it was held *TRE* by one Edward. This Whitney may be either Whitney Court or Old Whitney Court near the river, possibly the latter. It is recorded that half a hide 'geldat' there, implying that there may once have been more (*c.f.* Whitney at No. 19).

###### (2) *Mateurdin* (*Mathewurdam*):

This is one of the few manors in the hundred for which no identification is suggested. Bannister thought it was "near Eardisley" which is indeed probable. Harold held this manor as two hides geldable of which the King had a part, but "wasta fruit et est". Griffin filius Meridiadoc (*c.f.* No. 34 below) held a third part of the two geldable hides of Mannerdin (in *BDB* margin Mawerdin) which Harold held—evidently at the same place as the King's manor. *BDB* suggests without any conviction that Mawerdin = Marden, north-east of Hereford, but adds quite rightly that Marden is not in (or anywhere near) Elsedune Hundred. In a list of tenants annexed to, and a little later than the *BDB*, Rogerus de Port is listed as having a two-hide manor at Mathewordin. Evidently the two-hide manor of Harold's day which had been divided up by Earl William and was held by King William and Griffin in Domesday was reunited at the beginning of the thirteenth century. In spite of the suggestion in *BDB* Mateurdin remains unidentified.

###### (3) *Herdeslege* (*Herdesleie*) = *Eardisley*:

Two and a half hides: 'waste'. Formerly Earl Harold's (*c.f.* Eardisley at No. 25).

###### (4) *Cicuurdine* (*Chicwordine*) = *Chickward*, 3 miles north-north-west of *Eardisley*:

One hide and 3 virgates (*c.f.* Chickward at No. 6).

*BDB* makes the identification of Cicuurdine as Chickward certain.

###### (5) *Ulfelmestune* (*Ulfelmestona*) = *Welson*, near *Eardisley*:

Two hides.

The first of a list of eight estates of which *DB* records "has terras tenuit Haraldus Comes. Modo habet Rex. Et waste sunt" without noting former tenants, or inhabitants, *VCH* suggests the identification: there is no reason to differ.

###### (6) *Stiuingeurdin* (*Stiuchewordin* = with an interlineation '*Chicwurdine*' and marginal note *Chicwordin*):

One hide.

*BDB* thus solves the mystery of this manor with the, in *DB*, impossible name. *VCH* had suggested a Strangward near Knill which occurs on Speed's and Saxton's maps but Knill is in Hezetre Hundred (*c.f.* Chickward at No. 4).

###### (7) *Hantintune* (*Huntintona*) = *Huntington*, west of *Kington*:

Three hides.

Huntington, later an important lordship, gave its name to the hundred which absorbed the western parts of Elsedune and Hezetre. This Huntington is not the Huntington two and a half miles north-west of Hereford and until 1832 within the liberty of the city (as *BDB* notes at p. 90 in connection with the lands of the church of Hereford). The latter was an important 10 hide manor.

###### (8) *Buracdestune* (*Buracdestone*: as an interlineation *Bollingeshulle*, and the same in the margin) = *Bollingham*, on the *Kington-Eardisley* road:

One hide.

*VCH* had suggested Burton before *BDB* was available and quoted *Feudal Aids* II 377—"Bourton cum membris in valle de Radenoure" which is Barton near Kington rather than Burton Court near Eardisland. The *BDB* variants definitely point to Bollingham with its nearby 'mound' and neighbouring mediaeval sites (*c.f.* No. 14).

###### (9) *Hergesth* (*Hergest*) = *Hergest*, west-south-west of *Kington*:

One hide (*c.f.* No. 13).

###### (10) *Brudeford* = *VCH* suggest *Breadward*, south-west of *Kington*:

Two hides.

There is no reason to differ. These are neighbouring fords over the Arrow.

(11) *Chingtune (Chinchtone: Kintona) = Kingston:*

Four hides.

(12) *Ruiscop (Ruiescop: Ruissoc) = Rushock, north-east of Kingston:*  
VCH gives Riscob in this and other instances of this name.  
BDB gives the name in practically modern form.

Four hides.

There are two other Rushock estates (see Nos. 15 and 28). The development of the modern road from Presteigne *via* Titley to Kingston tends to obscure the fact that the arable of these three estates extended from the present Rushock Farm north of the road in a south-easterly direction towards the Arrow below the road between the 600 and 500 feet contours.

All the above-mentioned manors numbered 5 to 12 are, grouped together in DB. It should be noted that 'they are', not 'they were and are' waste.

Then come three manors grouped together as held by King Edward "and they paid geld. Now the King has them and they are waste". These three are:—

(13) *Hergest (sic) = Hergest:*

Three hides.

This Hergest and No. 9 are doubtless represented by Upper and Lower Hergest. The site at Lower Hergest was perhaps King Edward's fortified manor. Castle Twts means in Welsh the Castle House(s), and is probably one of the mediaeval manors, as it is a mediaeval site.

(14) *Beuretune (Beuerton) = Barton, between Kingston and Rushock:*

Two hides.

It is probably to this that *Feudal Aids* refers (c.f. No. 8): King Edward of course had lands in 'Valle de Radenour' (c.f. under Hezetre Hundred).

(15) *Ruiscop (Ruiescop: Ruissoc) = Rushock:*

One hide.

C.f. Nos. 12 and 28.

(16) *Wennetona = Woonton, 2 miles east of Almeley:*

One and a half hides, paying geld.

DB here in a new paragraph which looks as if it might have been an interpolation repeats "In Elsedune Hundred", notwithstanding that all the foregoing fifteen estates are in paragraphs which were headed in the same way at the beginning of the list. Woonton is described as having been held as two manors by Elgar and Aluuinus (Elwinas) which were waste (TRE) but paid 62d. to the farm of the King, with 1½ ploughs. Ralph de Bernai when he was vice-comes (sheriff) added these two estates unlawfully to the farm of Leominster (c.f. No. 24).

LANDS OF ST. GUTHLAC'S CHURCH, HEREFORD

St. Guthlac's Church was merged at an early date after Domesday in Walter de Laci's Collegiate Church and later in the Benedictine Priory of St. Peter (c.f. BDB, p. 91).

(17) *Elmelie = Almeley:*

Four hides, held of the church by Roger de Laci.

Land for 8 ploughs.

"Men of another vil work on this vil and pay 37/8d." A fairly large manor.

(18) *Mideurde (Midewrde: Midelwud):*

One hide.

Identified in BDB (p. 92) as Middlewood in Clifford. The marginal 'Midelwud' certainly gives an identifiable modern name. There is no reason to look for a Middle Wood across the Wye in the lands of the Ralph de Todeni's castellany of Clifford castle, right outside Elsedune Hundred, which practically speaking does not cross the Wye (c.f. under Nos. 1 and 20). Moreover this Mideurde was held by one Drogo (Drew) and not by Ralph de Todeni, of the church. There were 1 plough and 2 bovarii on in demesne, and 1 more plough and 3 bordarii on the manor.

Mideurde or Midelwud occurs in the inventory between Almeley and Whitney (*vide infra*). A much more likely site is at Winforton Wood Farm about a mile north of Winforton on the line between Almeley, Eardisley and Whitney.

There is another Midewde (Midelwude) in Stretford Hundred (2 hides) held by Gilbert fitz Turol. But there is every reason why there should be many "Middle Woods" about!

(19) *Witenie = Whitney, on Wye, perhaps at the present Whitney Court:*

Four hides geldable paying 6/-.

Neither this Whitney nor the other manor there held by King William was held by Earl Harold but both "were and are waste". They were right up against the Welsh border by the side of the Wye (c.f. Whitney at No. 1).

RALPH DE TODENI'S (TOSNY) LANDS

(20) *Willaeslege and Widferdestone (Wilaeslaia and Wilfertona) = Willersley and Winforton, about a mile apart to-day, south of Eardisley and just north of the Wye.*

Four hides with 4 ploughs on the demesne and 17 bordars, 3 freemen, and 8 serfs, with 3 more ploughs. It was waste (TRE) and worth 10/- but 'now' £7. Ralph also had another one hide holding there with 8 men and 1½ ploughs, held by 'a Welshman' and worth 12/-. This was a large and important holding of Ralph de Todeni, who held Clifford castle as an extra hundredal tenure. Winforton and Willersley are now separate parishes, the former being the larger. The small primitive church of Willersley seems to be the older of the two, dating from the twelfth century (c.f. No. 18).



(21) *Elburgelega* (*Edburgelega*: *Kinardsleg*) = *Kinnersley*:

The red marginal annotation in *BDB* identifies this hitherto unidentified manor.

One hide, formerly waste, worth 30/-.

Held by Richard of Ralph de Mortimer, lord of Wigmore, and formerly held by Edric, perhaps but not necessarily, the Savage who held lands round Wigmore. Though assessed at only one hide, the manor had 2 ploughs in demesne with 3 villeins and 6 bordars with 4 more ploughs. This satisfactorily accounts not only for *Elburgelega* but also for an obvious possible manor at *Kinnersley* (c.f. Nos. 31 and 35).

#### ROGER DE LACI'S LANDS

(22) *Hope* (*Hopa*):

Two hides.

There are several Hopes, and names ending in "hop" or "hope" in Herefordshire Domesday like *Brinsop*, *Fownhope*, *Woolhope*, *Sollers Hope*, etc.. *VCH* assumes Roger de Laci's 2 hide manor of *Hopa* is *Hope* under *Dinmore* or *Hope Mansell*, but these and all the others are far away from this group of Roger's manors in *Elsedune Hundred*. Placed as it is in the inventory next to *Lyonshall* and followed by *Woonton*, it should lie in the *Almeley* area, where *Hopley's Green*, one mile north-east on an alternate track to *Woonton* is a probable identification. *BDB* does not refer to this *Hope* in the notes. Under King William's holding at *Kingsland* near *Leominster*, *DB* notes that 'de hoc manerio' (*vide supra* under *Hezetre Hundred*). Roger de Laci had one manor of 2 hides, 'nomine' *Hope* and another manor of 1 hide, 'nomine' *Street*, and a third, 'nomine' *Lautone*. Again, in the inventory of the Great Manor of *Leominster* held by the King, Queen Edith is recorded as formerly holding it with 16 'membris', including a *Hope*. This *Hope* seems probably to be the same *Hope* as the King held in *Greitwas Hundred* as part of *Kingsland Manor*, and Roger de Laci of him. The *Hope* in *Kingsland* should thus be looked for there. Queen Edith's *Hope*, a membrum of *Leominster*, seems to have been *Hope* under *Dinmore*, which is rather too far away from *Kingsland* and the other side of *Leominster*.

Neither of these can well be *Hope* in *Elsedune*, for which *Hopley's Green* is now suggested, in spite of the fact that Roger de Laci held both of them. The identification of the Hopes is nearly as hopeless as that of the *Leys* or *Leges*.

(23) *Lenehale* = *Lyonshall*:

Five hides, with 2 ploughs in demesne, and 5 more with 3 villeins, 11 bordars, 3 radmen, and 5 selfs and bondwomen. Worth 60/- *TRE* and now 50/-. It used to be held by Turchil of Earl Harold. *Lyonshall* was an important place, which still possesses prominent remains of a motte and bailey. It was held by the Devereux of Roger, and this is noted already in the *BDB* marginalia (c.f. *supra* p. 137).

(24) *Wennetune* (*Wentona*) = *Woonton*:

There is a misapprehension here in *BDB* (note on p. 100) which suggests that this *Woonton* is *Woonton* in *Wolphy Hundred* and was in 1243 probably included in *Laysters*. There is no reason to suppose that this *Woonton* is other than the *Woonton* in *Elsedune* near *Almeley*, either *Woonton* proper, 2 miles to the east, or *Almeley Woonton*, 1 mile to the north. The other, *Wolphy Woonton*, 2 miles south-west of *Laysters* (Last in *DB*) is halfway between *Leominster* and *Tenbury*. The *Woonton* of Roger de Laci in *Elsedune* is reasonably catalogued between *Lyonshall* and *Eardisley* (where this *Woonton* lies), both of which Roger also held. *Almeley* in the same area was *St. Guthlac's*, but Roger held it too of that church. Roger's manor of *Woonton* was of 1 hide geldable, with nothing in the demesne except five villeins who had 1½ ploughs: it was worth 3/8d. but by Domesday 64d. The King (*vide supra* No. 16) also had a manor in *Elsedune* at *Woonton* of 1½ hides geldable. It seems as if this King's manor might have been *Woonton* proper, which puts Roger de Laci's *Woonton* at *Almeley Woonton* and contiguous to the *Almeley* manor which he held of *St. Guthlac's*.

(25) *Herdeslege* = *Eardisley*:

*DB* says that Edwi held it *TRE* and that "this land pays no geld nor does it give customary dues nor does it lie in any hundred. It is situated in the midst of a certain wood and there is one 'domus defensabilis' there. On the demesne is 1 plough and 2 serfs and a Welshman rendering 3/-" (c.f. under *Hugh l'Asne's* lands).

The *domus defensabilis* of *Eardisley* is one of the only two such places mentioned in the Domesday Book for Herefordshire. Both were in *Elsedune Hundred*. But only the *Eardisley domus defensabilis* was extra-hundredal and paid geld to no-one, though it had a demesne. It is obviously the presently so-called *Eardisley Castle* with its moated enclosure. The *Eardisley* manor of 2½ hides held by the King (c.f. No. 3) was probably *Eardisley Park*, about 1 mile to south-west of the castle, adjoining the manor of *St. Guthlac's* held by *Drogo* at *Winforton Wood Farm*. *Hugh l'Asne's* ½ hide tenure (of waste land) may have been anywhere around *Eardisley*. There is plenty of suitable Domesday arable land in the area: a possible site is around *Upper House Farm* on the north side of the village.

(26) *Letune* (*Lectona*) = *Letton*, 3 miles south of *Almeley*:

Three hides worth 30/- though formerly only 2/-, and held by Edwi. It had 1 plough in demesne and 1 other, with a presbiter and 7 hospites: also a mill which paid nothing.

(27) *Sarnesfelde* = *Sarnesfield*:

On of the *TRE* *Leominster* lands of 1½ hides held by Roger de Laci with 1 plough, and 10 bordars with 3 ploughs, 1 serf and 1 bondwoman. Formerly waste but now worth 20/-.

(28) *Ruiscop (Ruisoc) = Rushock, near Kington:*

One hide, formerly Earl Harold's: 'was and is waste' with a large wood and haia (*vide* Nos. 12 and 15). These three estates at Rushock aggregate 6 hides for which there is arable land available (*vide* note at No. 12).

(29) *Dilven (Dilon: Dilun) = Dilwyn:*

Three hides with 1 plough in demesne, 8 villeins, 1 bondwoman, 5 bordars with 7 more ploughs and there could be 2 more. It was worth 4 pounds *TRE* but 'now' only 75/- . William also held in this vil 1 (more hide) with land for 3 ploughs, with 1 villein and 3 bordars worth *TRE* 25/- but now only 15/- . This is evidently an important estate. It has usually been identified as Dilwyn. There are, however, complications. There are three Dilwyns: Dilwyn proper, Church Dilwyn and Sollers Dilwyn. There are also three references in *DB* to Dilun or Dilge (and similar forms in *BDB*). The other two are referred to in *DB* under 'he terrae infra scripte jacebant ad Leofminstre tempore regis Edwardi'. Among these 'undermentioned' estates *DB* notes that (a) William de Scohies held Dilge (Dilun in *BDB*) and Richard of him and that Elmer held it. It was of 1 hide with in demesne 1 plough with 1 radchenist with 1 more plough, and there also 1 'Frenchman', 4 bordars rendering 25d., 2 serfs and 1 bondwoman, formerly worth 5/- and now 20/- : also (b) Ilbert held Dilege which Rauechetal held as 2 hides, with 2 ploughs, 8 bordars with 4 more ploughs in demesne and 4 bovarii, worth 20/- and now 40/- .

Now (b), and the William de Schoies estate entered among his lands in Elsedune are evidently different estates. Tait in *BDB* suggests for the latter Church Dilwyn. Sollers Dilwyn, nearer Leominster, may therefore be Ilbert's Dilege, in the Leominster estates *TRE*. William de Scohies' is therefore probably Dilwyn proper.

The subject is however further confused by the fact that all the Dilwyns were later in Stretford Hundred, which of course is also a Domesday Hundred, and if, as seems definitely to have been the case, they were in Elsedune in Domesday, this involves the extension of the boundary (*c.f.* part II above) of the latter a long way further east than at first sight seems probable. Unless the Dilwyn group of estates was exceptionally an outlying enclave of Elsedune in another hundred, several other important manors of the 'undermentioned' group of estates belonging to Leominster *TRE* must also have been in Elsedune Hundred geographically, notably Sarnesfield and the Pembridge parish manors. Weobley, between Sarnesfield and Dilwyn, was always described as in Stretford Hundred both at and after Domesday. But Sarnesfield is inevitably in Elsedune, geographically; apparently Dilwyn parish must therefore also be, though Weobley is not.

Among these Leominster estates in the area is also Wapletone, but this must geographically have been in Hezetre Hundred (*c.f.* No. 37 in the Hezetre Catalogue).

(30) *Titlege = Titley:*

Three hides, formerly Earl Harold's, with land for 6 ploughs but it 'was and is' waste, with 'nevertheless' a wood and a haia. This is the second Titley manor, around Eywood and Flintsham. The other Titley manor was also held by Osbern but lay in Hezetre Hundred, thus establishing the hundred boundary hereabouts pretty accurately (*vide sub* Hezetre No. 26).

(31) *Walelege = perhaps Ailey in Eardisley near Kinnersley and Kinnersley Castle:*

Formerly Earl Harold's: 2 hides geldable which Earl William gave to Richard as 4 hides. Was waste, 'now' worth 5/- . There is land for 12 ploughs and a large wood for hunting. There is a "domus defensabilis", one of the only two in this part of Herefordshire, the other one being at Eardisley (*vide* No. 25), but this one, unlike the latter, was not extra-hundredal. It has been suggested that Walelege was one of the Willey-Stapleton sites near Presteigne, possibly Stapleton itself (*vide* p. 149). 'Wylilege' in Wales, referred to later as part of the Mortimer lands, certainly suggests Willey north of Presteigne, but Richard fitz Turol'd's domus defensabilis at Walelege is clearly described as in Elsedune Hundred whose centre and most of whose manors lay around Eardisley. The identification of Walelege as Ailey in Kinnersley was suggested in *VCH* and is accepted in the *BDB* index though without a note on the subject. An alternative is the Kinnersley Castle site, as opposed to Kinnersley township, and having regard to the later existence of a castle at the former, this identification is perhaps a little more likely than Ailey (for which see No. 33 below). Kinnersley Township would remain available for Elburgelega (*q.v.* No. 21).

*In Herdeslege = Eardisley:*

Hugh held ½ hide, geldable, formerly Earl Harold's waste. Evidently not a manor but only a small holding (*c.f.* No. 25, also 3).

(32) *In Cicurdine (Cicuordine: Chicwurdine) = Chickward:*

One hide and 1 virgate.

Formerly Earl Harold's and given to Hugh by Earl William: was and is waste.

The King also had 1 hide and 3 virgates here which were Earl Harold's, and, like Hugh's, waste. There is enough land around Chickward for these manors. Hugh's Chickward, his land at Eardisley, and his perhaps neighbouring 'Bernoldune' (No. 38 in Hezetre Hundred) had by the time of *BDB* passed to William de Braose.

(33) *Lege = perhaps Ailey (c.f. No. 31 above):*

Half a hide geldable with 1 plough, formerly waste but now worth 10/-. This is certainly not one of the two Leys in Hezetre Hundred. It may have been any of the many places around Eardisley ending in 'ley' such as Ailey, Hurstley, Kinley, Red Ley, etc. Ailey near Kinnersley is as likely as any.

#### GRIFIN AP MARIADOC'S LANDS

(34) *Mateurdin (c.f. No. 2). Identification unknown. Mawerdin: Mauuerdin:*

Grifin held a third part of 2 hides which Earl Harold held and Earl William gave to him. 'Vasta fuit et est.' One Robert held one 'haia' of Grifin.

(35) *Curdeslege:*

Grifin held it as 1 hide.

Earl Harold formerly held it but 'vasta fuit' except for three acres of land 'recently' ploughed there. *VCH* suggests as an identification Kinnersley (*q.v.* at Nos. 21 and 31). Prima facie the identification is improbable on account of the other name(s) which Kinnersley apparently has in Domesday. But there are examples of different names juxtaposed in Domesday which are obviously really the same, as for instance Lenhale and Lintehale (*vide* Nos. 9 and 10 in Hezetre Hundred), both of which are Leinthall (Starkes and Earls) to-day, and the Chickward manors (Nos. 4, 6 and 32 in Elsedune Hundred).

## Economic Geography of Herefordshire

By MAJOR A. E. W. SALT, M.A.

IT goes without saying that there are elements in the physical background of any region which have a vital effect on life and work within that region. Surface, relief, the arrangement and character of underlying rocks (the geological factor), climate, soils, mineral deposits, water supply—all play their part in determining the activities of man.

The aim of Economic Geography is to link up all these factors with human needs. We cannot understand the economic conditions or possibilities of any area without a knowledge of its background.

Herefordshire, with an area of 837 square miles, is a small county, though there are twelve smaller counties in England, *i.e.*:

	square miles
Rutland ... ..	152
Middlesex and London ... ..	344
Huntingdon ... ..	364
Bedford ... ..	475
Hertford ... ..	629
Worcestershire ... ..	695
Surrey ... ..	716
Berkshire ... ..	720
Oxford ... ..	743
Buckinghamshire ... ..	744
Westmorland ... ..	776
Leicestershire ... ..	828

This list does not include divisions of larger counties—*e.g.*, East and West Suffolk, Lincoln Kesteven), which are smaller than Herefordshire, as, while these may be regarded, for administrative purposes, as separate counties, the general public always thinks of the whole county.

Our county is approximately circular in shape and is compact to a remarkable degree. It is 38 miles from Shelderton Hill, north of Downton, in the extreme north, to the Little Doward (Whitchurch) in the extreme south; 35 miles from the Malvern Hills in the east to Hay in the west. Hereford, the county town, lies almost in the centre of the county. Though its distance from extreme points on the border varies from 11 miles (Kentchurch) to 24 miles (north of Downton), it is only in the extreme north and north-east that the boundary is more than 20 miles away. As the crow flies, Hereford is only between 12 and 15 miles from Bromyard, Kington, Ledbury and Ross.

The contrast between the Welsh (western) and English (eastern) points of the county is its most striking geographical feature. In the west, Herefordshire lies on the fringe of four great upland masses, the Black Mountains, the South Radnor uplands, Radnor Forest and Clun Forest, behind which are the open moors and high mountains of Central Wales. The highest named points in the county within this region are Black Hill



or Cat's Back (2,102 feet), Cefn Hill (1,593 feet), Cusop Hill (1,310 feet), Bradnor Hill (1,284 feet), Hergest Ridge (1,394 feet), and Pen-twyn (1,079 feet). The highest actual point is in the township of Craswall on the border of the county and Breconshire (2,306 feet).

In the east, the Kyre and Clifton-on-Teme uplands and the Malvern Hills are isolated uplands of the great midland plain, to which Herefordshire is affiliated, rather than to its western highlands of which, geologically, it is a part. The lowlands are, however, broken by a series of low but striking hills, rising like islands from the plain. Their height averages between 800 and 900 feet—Ladylift (part of the Wormsley ridge) is 933 feet, Dinmore 748 feet, Aconbury 905 feet. This lowland occupies about 65% of the whole area of the county and is divided into two parts:

(a) **THE CENTRAL LOWLAND** with two sub-regions, the Leominster and Hereford plains of loamy or close-textured soil lying on a floor of Devonian Red Marl, most typically Herefordshire, and masked by great spreads of glacial drift, ranging from heavy clay to lighter sands and gravels;

(b) **THE SOUTH-EASTERN LOWLAND**, where the sandstones which make the higher beds of the Lower Old Red Sandstone have weathered down to a thinner and lighter soil. This distinction has a vital bearing on agricultural development.

Flowing through these two areas are four rivers: Wye, Arrow, Frome, Lugg.

The South-Eastern lowland is rolling country traversed by the broad and sinuous Wye. In Herefordshire, the Wye is essentially a river of the lowlands, the Arrow, Frome and Lugg flowing from deeply cut hills into their lowland valleys.

The economic significance of all four rivers is fourfold:

- (a) they determine the lines of communication;
- (b) they are an important factor in the agricultural development of the county;
- (c) they serve, or might serve, as sources of water-supply;
- (d) they attract fishermen and holiday-makers.

THE CENTRAL UPLANDS may be divided into four groups:

(a) *The Woolhope Dome, the Malvern Hills and Shucknall Hill* consisting of older Silurian rocks of limestone and shale, and, in the case of the Malverns, even older Cambrian and Precambrian rocks.

(b) *The Central Hills.*

(c) *The North-East Upland.*

(d) *The South Central Hills*, which consist of ragged, younger rocks, resting horizontally or nearly so.

THE BORDER UPLANDS lie on both sides of the Wye Valley. To the south of the Wye are the Black Mountain foothills, slightly tilted to the south-west, so that the highest points are Merbach Hill, overlooking the Wye (1,045 feet) and Cusop Hill to the north-west. On the Brecon border the hills rise to 2,143 feet in Hay Bluff, and to 2,306 feet at Craswall (see above). To the north-north-east there is a rolling plateau intersected by the parallel valleys of the Olchon, Escley, Monnow, Dulas, Dore and their streams. These valleys are as fertile as any in the central lowlands, but are

so deep that movement from west to east is blocked, except along the Golden or Dore valley, which is connected by a gap from Vowchurch over the Bacho to Kingstone and Hereford. Their market town, therefore, is Abergavenny.

*The North-West Edge* consists of flaggy Silurian limestone, separated by great thicknesses of softer shale and sandstone. The highest hills are Harley Mountain (1,267 feet), Cole's Hill (1,097 feet), Wapley Hill (1,050 feet) and Shobdon Hill (1,039 feet).

All these physical features are affected by:

(a) *Possible flooding.* All the four rivers have their water-meadows—stretches of alluvium subject to periodic floods, and much of the land is too low-lying for satisfactory cultivation.

(b) *Height.* Between 1,000 and 1,500 feet is a line beyond which living for man and beast is bearable, but not easy. Below 800 feet land gradually becomes more valuable. 7.4% of Herefordshire is between 500 and 800 feet, and only 6% above this line.

(c) *Slope.* Over part of the county there are short, steep slopes which hamper development. On the North-West edge 14% of the land has a slope of 1 in 7½ or over, while 7% is steeper than 1 in 10.

In an agricultural county it is vitally important to make as much as possible out of the best land for farming. Farm land may be divided into three classes:

- (a) Land of good quality;
- (b) Land of average quality;
- (c) Poor land.

To each of these classes we may apply the following tests:

- (1) How high is it? *Elevation.*
- (2) Is it steep or gently sloping? *Slope.*
- (3) Has it a favourable situation? *Aspect.*
- (4) Is the soil deep or shallow? *Depth of soil.*
- (5) Has it sufficient water? (not too much or too little). *Water.*

#### SUPPLY AND DRAINAGE

*Land of good quality*, (a), which may be highly productive under good management, satisfies all the above conditions.

*Land of average quality*, (b), may be mainly loam, or contain clay, peat, or sand.

*Poor land*, (c), is of low productivity, because it suffers from excess or deficiency in one or other of the above five factors—e.g., it may be too high up, too dry; it may, as the Parable, says, be 'stony ground'.

Into class (a) fall the Central lowland, the less undulating portions of the South-East lowland, the Golden Valley and the Wigmore plain. The higher land in the South-East lowland is also of good quality, though there are patches in class (b).

Most of the land of average quality (b) is found in the Black Mountain foothills, in a belt which extends from Garway Hill to the Great Doward,

in the hills on the Radnor border, in the lower part of the North-West edge country, in the middle of the Woolhope Dome and in the Malvern foothills.

Poor land (c) includes the upper portion of the North-West edge country, the moorland of the Black Mountains, the high ground below the Malverns and the fringe of the Forest of Dean.

During the recent war there was an attempt to raise land from one class to the next.

On the whole, the high fertility of the county balances its comparative smallness of area.

#### CLIMATE

Temperature, sunshine and rainfall have a powerful influence, not only on agricultural development, but on human settlement. It is unfortunate that there are in Herefordshire only six official Meteorological stations which record rainfall, with an additional three which record temperature only, especially as there is so much climatic variation between the uplands and lowlands.

(a) RAINFALL. As the county is surrounded by hills and is in the rain-shadow of the mountain of mid-Wales, its rainfall is comparatively light. Over most of Herefordshire the average is only 27.5 inches. Only in the western uplands does it exceed 30 inches. The drier and sunnier east is generally suitable for the production of wheat, barley and sugar beet, while, in the wetter west, the range of crops is lessened. On the Brecon border, with an average rainfall of 50 inches, arable farming is a tricky business.

On the whole, April is the driest month. This dryness does not help the springs or the growing of cereals. Most of the rain usually falls in October, while September is generally drier than August. This helps the ripening of fruit and hops.

(b) TEMPERATURE. The lowest mean average temperature occurs in January (40°F.); the highest in July (62°F.). The January temperature is above the average for the British Isles (36.3°F.); the July temperature below (61°F.). Any modification that occurs in the county is due to elevation. On the North-East uplands, crops ripen 14 days later than in the Teme valley or about Hereford. Gardens in Weobley (335 feet) are at their best 10 days later than in Hereford. The effect of elevation, however, is most noticeable in the Black Mountains, where the growing season is much shorter than at a lower level, and there is always, in the winter, an appreciable fall of snow which severely restricts the range of arable crops. At a height of over 2,000 feet snow drifts lie for 12 weeks between the end of November and the beginning of April; and in deep valleys, such as the Honddu, the sunshine is from 15% to 20% less than in the plain. Where the Black Mountains face the north, there is often an almost complete absence of sun. On the other hand, as at Brilley on the western edge of the county, where the hill slopes have a southern aspect, arable farming can be carried on at over 1,000 feet. This was proved during the late war on the Hergest ridge, above Kington.

#### POPULATION

Herefordshire is a sparsely populated county. If all the land were equally divided, every person would have 5.8 acres. This figure is only exceeded in England by Westmorland (7.4). To take extreme cases, in the upland parish of Llanvynno, each person would have 35 acres. Most of the total population of the county live in a rural area.

AREAS OF GREATEST DENSITY. (a) The most extensive area of close settlement is in the city of Hereford. This concentration is due partly to a residential inflow, partly to the existence of the neighbouring gravel beds of the Wye.

(b) If also there is a belt of lighter soil which allows for variety in agriculture, there will be more labourers to each 100 acres, so that Bartestree and Lugwardine, also residential villages and in the shadow of Hereford, have large populations in proportion to their acreage.

(c) The area next in density of population includes the central and southern parishes of the South-East lowland, where farming varies from sheep to barley, and from barley to vegetables and fruit. Bridstow and Whitchurch, therefore, adjoining Ross, can be compared with Bartestree and Lugwardine.

(d) The fourth area of density lies on the western slope of the Malverns. This is of recent growth, with the attraction of scenery and easy communication with Worcester and the Midlands. In Colwall, if divided, each person would only have two-fifths of an acre.

(e) Two other villages, Brimfield in the north and Ewyas Harold in the south, have also a concentrated population.

The higher parts of the uplands, the river valleys (owing to flooding), and the thick woodlands of the Woolhope Dome, do not attract settlement.

VILLAGE TYPES. Villages are of three kinds:

(a) Where the houses are scattered over a wide area with one large hamlet at a bridge or cross-road; on a main road; near the site of a ruined castle; at the meeting place of an early assembly ('moot') or around the church (e.g., Much Birch, Lyonshall).

(b) Where the main houses of the village cluster together (e.g., Pembridge, Eardisland) at a river crossing; along a street, e.g., Longtown (whose name was changed from 'Ewyas Lacy' to 'Longa Villa' in the sixteenth century) and Kingsland. These villages, however, differ from the 'cluster' villages of East Anglia, in that the number of houses in what was the mediaeval 'borough' is often less than in the 'foreign'. (In Madley the proportion is as low as one-sixth.)

(c) Where 'squatters' have appropriated a stretch of common or woodland (e.g., Bircher, Wellington Heath).

(d) Villages where there is no recognisable centre (e.g., Llanvynno). Such villages, with 40 houses scattered over 4,000 acres, present an almost insoluble problem when it comes to the provision of amenities such as piped water or electricity, especially when they are not linked up with a market town.

Between 1801 and 1871 there was an increase in population of 42.6%. The Industrial Revolution had little effect in Herefordshire, though in



its later stage there was a small movement from the Kington area to South Wales.

After 1871, owing to the opportunities for farm workers in Canada and the United States, due to the building of Transcontinental railways which opened up the Middle West, accelerated by the tragic years of 1870-1881 (in 1879 22,000 farmers went bankrupt and the corn in the wettest years of the century sprouted in the fields), the population of Herefordshire steadily declined until 1931. It is estimated that between 60,000 and 70,000 left the county during these years. This decrease was specially marked in the rural areas where the decline was 22% and notably in the moorland zone of the Black Mountains. The decrease in Llanvynno and Craswall was over 50%; in Michaelchurch Escley 45%; on the North-West edge 31%; in the Woolhope region 30%; in the North-East uplands 27%; and in the Central and South-Central hill 26% and 25%. On the other hand, the decline was not so serious in the eastern foothills, due to the specialised arable farming in the south-east and to hop and fruit farming in the centre.

This decrease in rural population did not affect the population of the city of Hereford. In the five smaller towns, however, it jumped up and down. The population of Bromyard rose after 1901, declined after 1921; that of Kington steadily decreased; there was both an upward and a downward movement in Leominster and Ross; Ledbury experienced a most striking fall.

The Census of 1951 shows that, except in the Rural Districts of Bromyard, Ledbury, Leominster and Wigmore, there has been an increase of population, which has been most marked in the City and Rural District of Hereford.

#### INDUSTRY

'The field is the lord of Hereford.' This is another way of saying that agriculture employs as many workers as all the manufacturing industries put together. In England and Wales 5.8% of the population is engaged in agriculture, in Herefordshire 22.9% of those employed, male and female, are in agriculture, which includes the very small number engaged in forestry and fishing (Census of 1951).

Herefordshire is almost free from mines and manufactures. Within the last two hundred years the discovery of a bed of peat on Widemarsh Common (Hereford) led to a search for coal without result, and similar searches made at Burghill and Lingen were also unsuccessful. There is, however, a narrow section of coal-bearing measures stretching from the Forest of Dean through Dymock almost to Ledbury, which might lead to open-cast mining. The scoriae found at Whitchurch and Bollitree (Roman 'Ariconium'—called by earlier nineteenth century archaeologists the Roman 'Merthyr Tydfil' or 'Birmingham') came from the Forest of Dean and its outliers. In 1931 (no later figures are available) 32.1% and 5.9% of the population of England and Wales were engaged in manufacture and mining (which includes quarrying); in Herefordshire 11% and 6%. In 1951 the Herefordshire figures were 14% and 0.2%.

Only in personal service, administration and finance and the professions does the county hold its own. The incidence of income tax and the

demand for higher wages has, however, lessened the number of domestic servants. There are far fewer persons than formerly who can afford to pay the present day rates of 2/- or 2/6 a hour for casual help in the house.

In 1951, for every 1,000 persons employed in the county:

- 220 were engaged in agriculture;
- 153 in public administration and defence;
- 133 in catering and domestic service;
- 133 in the distributive trades;
- 86 in transport and communications;
- 84 in food and drink;
- 65 in building and contracting;
- 54 in the professions;
- 23 in the production of tiles;
- 17 in engineering and electrical goods;
- 9 in wood and cork;
- 6 in insurance, banking and finance;
- 5 in paper and printing;
- 4 in gas, electricity, water;
- 3 in clothing;
- 3 in other metal goods;
- 2 in textiles.

As there are no mineral resources in the county, and only a little clay, used in tile making, most of the industries are based on the agricultural needs of the population—e.g., jam making and fruit preserving, grain milling (the water mills grind for animal, not human, consumption), the cider industry, egg packing, engineering (e.g., recent developments at Holmer, Lyonshall, Pembridge, Colwall), and milk concentration. At Rotherwas most of the buildings of the Ordnance depot have been let out for the manufacture of school and other furniture, domestic electrical appliances, and builders' and cabinet-makers' brassware. There are small factories for precision tool making at Ross, for Saunders valves at Hereford, and for soft drinks (Schweppes) at Colwall, a Barronia Metals factory at Clehonger, a modern factory for repetition work at Whitney, and a small foundry at Kington.

The forges of Downton and Whitchurch, the pottery kilns of Deerfold, the glass industry of St. Weonard's disappeared with the Industrial Revolution.

Out of this a problem arises. Is it necessary to find more industries? The answer is interwoven with the desire to maintain rates in both urban and rural districts at the lowest possible level. There are a few who would keep all new industries out of the county; there are more who would bring them in, if amenities could still be preserved. Apart from this, the county needs industries to absorb both the girls who will not undertake domestic service and the surplus of agricultural workers driven out by the increasing use of machinery.

At present, Herefordshire has comparatively few wage earning women and girls (34% of the total employed). This is 15% less than in the industrial counties and 6% less than for the country as a whole. This means



that there is available female labour for potential factory extension in the form of small establishments near the small towns where amenities already exist. It would seem inadvisable to locate such near a residential centre, such as Ross, or too far to the west, as at Kington. The natural location would, therefore, seem to be in the eastern part of the county with its natural connection with the West Midlands, or in the south-west to link up with South Wales. The factor to be considered in the establishment of such industries is that we do not want to repeat the evils of nineteenth century industrial development—our streams fouled or our air polluted with gases.

It would, also, be an advantage if such factories could be subsidiary to large concerns (*e.g.*, the small factory building in Weobley, originally a corn mill, now used for egg packing by Herefordshire Farmers' Egg Packing, Ltd.).

*English County*—a planning survey of Herefordshire published for the West Midland Group on Post-War Reconstruction and Planning in 1946—has (pp. 94-96) a long list of such industries, six concerned with metals, ten with food, sixteen with other industries. Butter and cheese factories; those connected with cattle, pig and poultry food and fertilisers; the manufacture of brooms and brushes, rope, cord and twine; saw mills and joinery works, seem eminently fitted to the needs and products of the county, while others may arise with the growing demand for electric power.

Some of those suggested—the manufacture of carriages, carts and wagons, bacon curing and the making of sausages are already in existence, but probably could be extended. The Rural Industries Bureau of the Herefordshire Community Council does useful work by the encouragement of such trades as thatching, the making of tubular farm gates, acetylene welding, to meet the requirements of agriculture.

One thing is certain. New industries demand better technical training, a need which has already been foreseen by the County Council in founding the College of Further Education in Hereford.

#### AGRICULTURE

There are, in Herefordshire, approximately 6,400 occupiers of holdings of one acre or more who render agricultural returns. (This overall figure includes poultry breeders, market gardeners and nurserymen who work one acre of land.) Of these approximately 2,500 grow fruit of one kind or another; approximately 300 are nurserymen. This, with those who work on the land, represents roughly 23% of the total number of the working population. (The only neighbouring county which has a higher percentage of persons making agricultural returns is Radnor.) In rural districts the percentage is naturally higher. In 1939 in Dore and Bredwardine it was 58%; in Bromyard 56.5%; in Weobley, Leominster and Wigmore over 50%. Before 1939 the total number of persons employed in agriculture was approximately 7,000; Agricultural Statistics (1939-1944), published by the Board of Agriculture, gives the number of agricultural workers in the county in June, 1939, as 8,311, which included 1,821 casual workers. In July, 1948 (the latest figures available), 10,121 were employed in agricul-

ture, forestry and fishing. If we exclude those engaged in the planting, replanting and maintenance of woodlands and forests, in tree felling, and in fishing in rivers and in the operation of fish farms and hatcheries, the number engaged in agriculture alone is probably between 9,000 and 10,000, including roughly 2,500 casual workers, who are employed on mixed farms in the Leominster area and about Hereford, and in fruit orchards and hoppyards in the south and south-east. In addition every year a number of hop-pickers flock in from South Wales, the Black Country and Birmingham, with a proportion of gipsies. In 1943 there were 28,000 such immigrants, in 1952 approximately 24,000. With the introduction of machinery, and with stricter rules for the attendance of children, this number is bound to decrease. Hop-pickers bring with them many social problems connected with water-supply, sanitation, accommodation and public health.

While there was a decrease in the number of agricultural workers after 1871, there has been little corresponding change in the size of farms, especially in the last thirty years, except in the case of small holdings, where there has been a slight increase. It has sometimes been stated that the small farm is not a paying proposition. This is certainly not true in Herefordshire. In 1944 the acreage of agricultural holdings was as follows:

Under 5 acres	...	...	...	...	1,225
5 - 10 acres	...	...	...	...	878
10 - 15 acres	...	...	...	...	529
15 - 20 acres	...	...	...	...	338
20 - 30 acres	...	...	...	...	445
30 - 50 acres	...	...	...	...	378
50 - 75 acres	...	...	...	...	483
75 - 100 acres	...	...	...	...	378
100 - 150 acres	...	...	...	...	554
150 - 200 acres	...	...	...	...	273
200 - 300 acres	...	...	...	...	149
300 - 400 acres	...	...	...	...	141
400 - 500 acres	...	...	...	...	49
500 - 700 acres	...	...	...	...	17
700 - 800 acres	...	...	...	...	1

66% were under 50 acres, 20% under 5 acres. Many farmers from over the Welsh border find the small farm more satisfactory than a 300 acre hill farm. Most of the farms under 20 acres survive because of the fertility of the soil; the very small holdings are often occupied by men who have other employment or independent means.

In the 20 years before 1939, any large decrease was in farms under 20 acres or in those over 150 acres. This caused a considerable decrease in the number of regular farm workers, and in 1939 many farms had too few men. It has been said that the decrease can be checked by planting more fruit. This belief, with the large import of foreign fruit, can hardly be justified. Many people are of the opinion that we have reached saturation point for apples and it has certainly been reached with regard to black-

currants. There are many reasons, too, why strawberries, still required in greater quantities, cannot be planted extensively on farms.

#### *Land Utilisation*

In the seventeenth century Herefordshire was famous for wheat, wool ('Lemster ore') and water. In the twentieth century the county is usually associated with hops, cider apples and its own breed of cattle. Hops and fruit are, however, the main concern of the farmer only in limited areas, and there has been, of recent years, a considerable increase in dairying. Moreover, wheat, oats, and barley have always dominated the agricultural policy of the county. Before the late war, 27% of the cultivated acreage was in arable, 4.5% in orchards, 68% in grass, 6% in rough grazing. The Land Utilisation Survey (1924) gives us a 'carpet of grass broken by orchard and arable'.

Before we analyse the grassland, it must be kept in mind that a great proportion of permanent rye grass and that which is known as 'agrostis pasture' is less valuable and tends each year to diminish in productivity. Unfortunately, Herefordshire has little first or second grade rye grass pasture and the quality of her grassland is below the average of neighbouring counties. There is, however, a third group with prevalent agrostis, which does contain a small proportion of rye grass. This is found in the middle valleys of the Lugg and Arrow north of Hope under Dinmore, in the Golden Valley, and in a small area in the Teme valley. The late war made a marked alteration—Archibald Hurd in *A Farmer at Whitehall* writes of 'The Agricultural Revolution, 1951 pattern'. As Herefordshire possesses both fertile soil and adequate rainfall, the essential conditions of ley farming, the change from unproductive grassland to arable and ley is the most significant movement in the agricultural history of the county.

Improvement in upland pastures is still due. They vary from heather moorland to agrostis pasture invaded by gorse and bracken (there are signs of this invasion on both sides of the Michaelchurch Escley—Pandy road). Even if part of this area is too steep for satisfactory cultivation, modern machinery and greater initiative in the use of productive grass seed might radically improve its grassland.

#### *Livestock*

(a) CATTLE. Before the war the number of cattle was over 120,000, with the highest density (300 to every 1,000 acres) in the Central lowlands. While there are pedigree herds of Ayrshires, Friesians and other breeds, and some farmers keep Shorthorns to rear calves to be sold before they are two years old and to manure a light soil, the Hereford beef breed, as on the prairie of North America and the pampas of South America, is paramount. It is hardy; it can thrive on a diet which no other breed can endure.

Owing to the profit from dairy farming, there has lately been an increase in milk production and dairy farmers number nearly 2,000, and many wonder whether it is wiser to fatten high grade store cattle or concentrate on milk. Those who use milk production as a side line often keep Hereford cross-breeds, which do not give a high yield. Until artificial

insemination became common, the cross on small farms which could only use a Hereford bull was unsatisfactory. Labour is also a serious problem, as workers avoid a dairy farm.

(b) SHEEP. Any increase in the number of sheep depends on more productive leys and of the more valuable sward. In 1939 (1st June) the number of sheep was 465,900, concentrated mainly on the border uplands. The ewe flocks consist of Kerry Hills, Clun Forest, Radnor, and Welsh Mountain sheep. There are also Ryeland flocks. The Ryeland is a local breed of sheep, originating in the south-east lowlands—its fleeces were sold in Leominster market, hence Drayton's 'Lemster ore'.

Rams for crossing come from many breeds, especially Shropshires, Oxford Downs, Suffolks and Hampshires, though Kerry Hills and Clun Forests also are used for breeding.

(c) PIGS. Most farmers keep a few pigs and pig clubs flourish, but there are few herds. There is room for the growing of fodder beet, an excellent pig food.

(d) POULTRY. Poultry keepers must be close to a large market, which is conspicuously lacking in Herefordshire. Consequently, though the number of accredited flocks has now reached the 1939 level, they are still comparatively few in number.

#### *Arable*

In 1939 there were 114,583 acres (27% of the agricultural average) under plough in the county. This was half as much as in 1871, the peak year of population. The distribution of this acreage was widespread, sometimes under conditions hampered by difficulties of approach and bleakness of climate. Most of the arable is found in the south-east lowlands on the drift-covered Old Red Sandstone south-west of Hereford, south of the Arrow valley and in the south-east hop and fruit region. Westward, the red of the arable patchwork decreases. Arable, also, with the increasing demand for food production during and since the war, can also be found above 1,000 feet, as on the Clun uplands and Hergest Ridge.

Wheat was the main crop of the Ross area and in the mixed farming country about Hereford. One of the most satisfying views in the county is of the red fields after spring ploughing seen from the high ground between Much Birch and Bridstow.

The barley acreage is high. Herefordshire grows as much as the three counties in the West Midland region (Stafford, Warwick, Worcester) combined and much of the Ross barley is good malting barley.

The home of oats is in the damper and higher region of the north and west, where the rainfall exceeds 30 inches.

Swedes, mangolds and turnips grow mainly in the arable region.

Sugar beet, which thrives best in a light soil and should be grown near a factory (Allscote or Kidderminster), is grown about Hereford, Leominster, Pembridge and Ross.

The Old Red Sandstone favours the growth of potatoes, though they have never been popular in the county as a crop.

Hops. Though shortage of wire has prevented the full quota, 22% of the hops grown in England and Wales is grown in the county. A hundred



years back there were hopyards in almost every village. Now, except for individual fields (e.g., in Birley, King's Pyon and Dilwyn), the hopyards are concentrated in a ring fence bounded by Ledbury, Mordiford, Bodenham, Bromyard and the Frome valley, where the soil is close-grained and loamy, and there is good drainage and no great variation of temperature or rainfall. The standard for hops is very high and every advantage is taken of new developments.

**MARKET GARDEN CROPS.** These occupy a comparatively small place, except about Ross, where Peterstow and Bridstow contain one-third of the county acreage. The local farmer does not take to market gardening, because he cannot ensure a market. During the late war the minimum county quota for vegetables was fixed and the proportion taken up was as follows:

		<i>based on a quota of 100</i>	
Turnips and Swedes (for human consumption)	350		
Lettuce	150		
Parsnips	125		
Leeks	100		
Dried Peas	95		
Beetroot	68		
Spring Cabbage	45		
Onions	38		
Brussels Sprouts	33		
Carrots	21		
Winter Cabbage	12		
Winter Broccoli	11.6		

### Fruit

Herefordshire is fourth among the fruit growing counties, the predominant place being taken by the cider apple.

Orchards take up 45% of the agricultural land of the county. In the mixed farming region of mid-Herefordshire and in the Teme valley, in the Woolhope and East foothills, the average is up to the county percentage; in the South-East (Ross) only one-tenth is under fruit; in the lower Teme valley (Whitbourne) the proportion rises as high as 75%. Between the two wars there was a marked increase in plums and damsons, though Thomas Andrew Knight had done valuable experimental work and developed the 'damaseen' at the beginning of the nineteenth century, and Frank Cooke of King's Pyon and between 1890 and 1910 planted 300 damson trees in the hedgerows of his own village.

Among small fruit the acreage percentage is as follows:

Blackcurrants	46%
Strawberries	23%
Raspberries	16%
Gooseberries	7%
Loganberries and Blackberries	7%
Red and White Currants	1%

Specialisation in strawberries occurs in the Ross area and at Bosbury, Ledbury and Canon Pyon, where a block of 40 acres makes up a very big part of the total acreage. Elsewhere blackcurrants are the dominant crop. On the whole, there has been a decline, especially in the production of strawberries, though the decline has not been so marked as over the whole country. There is, for instance, a large acreage at Munstone planted within the last few years.

Herefordshire is fourth among the fruit-growing counties, the prominent place being taken by the cider apple. There has recently been a minimum planting of trees a year, though this is unlikely to continue unless the farmer can be guaranteed a fair price for his fruit. There are, undoubtedly, many old orchards which should be scrapped, though new planting means careful planning.

### FORESTRY

Before the late war 43,000 acres or 8% of the total acreage of the country was in woodland. There are not, however, as many trees as there would seem to be at first sight, as much of the timber is isolated in hedgerows planted at the time of enclosure. Enclosure in Herefordshire was not, as in other counties, due to the Enclosure Acts of the reign of Elizabeth I, or to those passed at the beginning of the nineteenth century, but a gradual process. On the other hand, much of the widespread mediaeval forest has disappeared. Offa, when building his dyke in the eighth century, did not think it necessary to bridge the forest between Lyonshall (Holme Marsh) and Yazor (Claypits Lane); while in 1233 Henry III made a safe passage through the woods of Brinley (Brilley), Whitney, Eardisley, from Painscastle (the Garde Doloureuse of Walter Scott's *Betrothed*) to Hereford. The oak beams of our brick and timber-framed houses, many of the massive timbers of the 'wooden walls' of England and the elaborately carved panels of Jacobean sideboards came from our Herefordshire woodlands and this decimated the oak forests. These were further damaged by the heavy demands on them in the early stages of the Industrial Revolution and by private consumers. (The Berringtons of Bishopstone used to burn one tree a week in their hall place, and in the early seventeenth century Sir Henry Sidney, President of the Council of the Marches, objected to the pottery kilns in Deerfold because they diverted wood from its proper use on the domestic hearth.)

Later, with the increasing use of coal, wood became of minor importance in the economic life of the world. Now, however, it has returned to its old importance—for telegraph poles<sup>1</sup>, pit props, domestic architecture (e.g., pre-fabricated buildings), furniture, and pulping for paper. In addition there is the fact that woodlands are vital to the regulation of water supplies and have, therefore, an indirect effect on the control of the diseases of animal and plant life.

In view of the serious situation in England and Wales in comparison with countries on the continent of Europe, the Forestry Commission in 1924 completed a survey of the existing woodlands and found that there were 1,900,000 acres of all types, the best afforested counties being Here-

<sup>1</sup>There is a tendency now to use metal poles.



ford, Kent, Surrey and Sussex. The Commission pointed out that in the decade before the census was taken, which included the 1914-1918 war, no less than 16% of the country's woodlands had been felled or devastated, and that there was a great lack of young hardwood plantations. They also reported that 92% of the woods were in private hands and that the State only owned 6.7%. They said, also, that (a) there was an enormous proportion of woodland of little use for any purpose, but available for planting; (b) that certain trees, *e.g.*, Finland and Russian spruce, and Douglas fir from British Columbia, were well adapted to this country; (c) that afforestation has a great effect on the betterment of the human race (the standard example of this is the State of Utah).

In terms of trees, Herefordshire woodlands may be classified as follows:

- (a) OAKWOOD;
- (b) SESSILE OAKWOOD, occupied by the Durmast oak, which at one time grew at a higher elevation than at present;
- (c) BIRCH, a comparatively recent immigrant into this county from the Cotswolds;
- (d) ASHWOOD, found on limestone—*e.g.*, on the Woolhope Dome;
- (e) ALDER and WILLOW, on low ground, often in association with osier plantations.
- (f) SWEET (SPANISH) CHESTNUT, much esteemed in Herefordshire hop-yards for hop poles or wire work poles. (Larch and Douglas fir are also gaining ground for this purpose.)
- (g) CONIFERS, especially those of economic importance. An appreciable amount of pitwood is supplied by the county from softwood plantations to the Somerset and Forest of Dean collieries.

Broadleaved (hardwood) trees were ill-treated for many generations and the only attention given to them was the removal of trees when they attained a useful size. In consequence, areas now lack certain essentials. Many of these areas are being treated with greater understanding though satisfactory conifer crops are being raised where broadleaved trees would not succeed.

The areas available for planting may also be classified:

- (1) High Forest;
- (2) Coppice and Coppice with Standards;
- (3) Scrub;
- (4) Felled or devastated woodland;
- (5) Other land, uneconomic for planting at the time of the Survey.

Herefordshire had then 28% of its woodlands in class (1), 47% in class (5). This estimate is about thirty years old, but it still holds good. The most unsatisfactory element is the small proportion of High Forest and the high percentage of Coppice. The latter, however, cannot be ignored, because, with scientific treatment, it can be converted into Coppice with Standards and, eventually, High Forest, during which operation the expenditure could be offset by the sale of minor products, such as firewood.

In 1953 the holdings of the Forestry Commission in Herefordshire and parts of Radnor, Gloucester and South Shropshire totalled roughly 6,250

acres—(a) MORTIMER, in the north-west; (b) CHASE WOOD (Weston under Penyard); (c) HAUGH (Woolhope); (d) HAY; (e) DYMCK. There is more room for development in the rehabilitation of uneconomic woodland and it may be possible to plant small areas on high land with a balance in favour of local agriculture.

During the war of 1914-1918 considerable areas were denuded of timber, but were later replanted with conifers to provide early re-stocking. During the 1939-1946 war further inroads were made on reserves, and thinnings were also supplied for conifer plantations. Although the need for early stocking with quick-growing softwoods still remains, the slow-growing hardwoods are judiciously planted to provide for posterity.

#### HOUSING

It is now realised that housing is an essential part of good town and country planning and that the removal of obsolete and unsatisfactory houses is one of the most difficult problems in planning. Unfortunately, Herefordshire has many unsuitable houses. The problem is not so serious in the city of Hereford, where a drastic scheme of slum clearance was put into operation before 1939, as in the smaller towns or in rural areas, as the following figures for 1943 will show.

URBAN AREAS. *Class A* indicates houses which should be immediately replaced, and *Class B* houses to be condemned and pulled down when *Class A* is dealt with.

	<i>Class A</i>	<i>Class B</i>	<i>Total</i>
Hereford ... ..	1.6%	16.5%	18.1%
Ross ... ..	10.0%	31.5%	41.5%
Kington ... ..	11.5%	21.1%	32.6%
Ledbury ... ..	16.3%	21.6%	37.9%
Bromyard ... ..	17.4%	31.8%	49.2%
Leominster ... ..	30.6%	14.5%	45.1%

From these figures it will be seen that the most serious situation is in Bromyard, but that Leominster has by far the largest number of houses for immediate replacement.

The position is not quite so grave in the RURAL AREAS and we may exclude some houses unfit for habitation which are of historic interest. The figures are as follows:

	<i>Class A</i>	<i>Class B</i>	<i>Total</i>
Ledbury ... ..	2.2%	14.7%	16.9%
Weobley ... ..	2.7%	17.9%	20.6%
Dore and Bredwardine ...	5.0%	20.6%	25.6%
Leominster and Wigmore	6.8%	15.8%	22.6%
Kington ... ..	7.0%	18.7%	25.7%
Ross and Whitchurch ...	7.5%	24.1%	31.6%
Hereford ... ..	9.0%	23.3%	32.3%
Bromyard ... ..	12.7%	25.0%	37.7%

The situation, however, has greatly improved in the last few years, as many houses have been reconditioned and new houses have been built in both urban and rural areas.

The number of permanent houses built by the Local Authority or private enterprise from 1947 to the middle of 1952 was as follows:

Urban Districts					
Hereford	...	...	...	...	980
Ross	...	...	...	...	148
Leominster	...	...	...	...	133
Ledbury	...	...	...	...	72
Kington	...	...	...	...	43
Bromyard	...	...	...	...	20
Total					1,396

Rural Districts					
Ross	...	...	...	...	226
Hereford	...	...	...	...	178
Bromyard	...	...	...	...	108
Leominster and Wigmore	...	...	...	...	102
Ledbury	...	...	...	...	85
Kington	...	...	...	...	59
Dore and Bredwardine	...	...	...	...	55
Weobley	...	...	...	...	46
Total					859

The present number of houses is, therefore, estimated at 13,884 in urban areas and 20,469 in rural districts. This means that the percentage of houses to be replaced within the next twenty years to the whole number of houses has been reduced in urban areas from 26.4% to 23.7%, in rural areas from 27% to 24.3%.

#### PUBLIC SERVICES

##### (a) Water Supply

It is a well-known fact that the water supply system of Herefordshire is inadequate in the rural areas. Piped water, except in the larger villages, is non-existent.

In 1943, out of 244 villages, 177 (77%) were without piped water. As regards the towns, the six urban areas are fully served by undertakings which, except for Ross-on-Wye, with its Company supply, are owned and operated by the local authority. The aggregate population served by these undertakings is 51,000 or 41% of the total population of the county. Hereford obtains a supply from the Wye about half a mile from the Wye bridge and could supply twice its present population and any additional industries. Ross is fed from boreholes in the Old Red Sandstone and there is also a small pumping station sited on the east bank of the Wye acquired in 1900. The Company's resources are fully capable of providing for the long term needs of the present supply area. The Bromyard Urban area source consists of six shallow wells in Old Red Sandstone on the banks of

the Frome. It also serves 20 properties in the Rural District parishes of Avenbury and Winslow. There is a potential deficiency in the supply which already exists in time of drought.

Ledbury Urban District operates two sources of supply, and by agreement with the Malvern Urban District a supply is also taken from their pumping station. As geological conditions do not permit of reliable local supplies of water in any quantity, if local consumption increases, the Council will be obliged to look to Malvern for a larger bulk supply.

Leominster derives from two sources, from gravel overlying Old Red Sandstone (first operated in 1869) by a well 60 feet deep with a borehole below, and a 20 foot well a quarter of a mile further east in a meadow between the Lugg and the Pinsley brook. Improvements have recently been carried out with a view to concentrating on the second source, which will provide a surplus over estimated future consumption. In Kington the Urban District Council operate one source of supply known as the Crooked Well and, except in periods of drought, the yield is sufficient for present needs.

In the RURAL DISTRICTS the situation is far less satisfactory, as may be seen by the following:

**BROMYARD RURAL.** Except for a few housing sites, all piped supplies are privately owned and there is also a widespread demand for water for agricultural use. If a full supply for both purposes is to be provided, it will be necessary to put into operation a scheme proposed by Major A. H. S. Waters, V.C., Consulting Water Engineer to the Herefordshire County Council, to supply the whole of the Rural District, together with parts of Ledbury and Leominster Rural Districts, by an intake on the River Teme at Whitbourne. So far, however, the only concrete proposal has been a request for approval of a small scheme to serve the village of Whitbourne.

**DORE AND BREDWARDINE.** The following villages have in whole or in part piped water—Clifford, Dorstone, Longtown and Clodock and Cusop (30 houses). A scheme has been proposed for a supply to Madley and Kingstone, to extend the mains from an existing system controlled by the Air Ministry.

**HEREFORD RURAL.** There is a small undertaking at Weston Beggard, but the whole of the area is in need of piped supplies ('The Herefordshire Water Survey', issued by the Ministry of Housing and Local Government, 1953).

**KINGTON RURAL.** The Rural District Council operates only three small village supplies. It is suggested that a regional scheme should be adopted, based on that at Hergest on the River Arrow, for the supply of the former bottled hospital at Kington Camp.

**LEDDBURY RURAL.** 375 houses out of a total of 2,378 (16%) have piped water from public mains and a further 259 (11%) from mains in private ownership. 73% have no piped water. 340 of the 375 houses supplied from public mains are in Colwall, 100 of those supplied from private mains are on Mr. Ballard's property, 91 are owned by the Eastnor Estates, Ltd.

**LEOMINSTER AND WIGMORE.** The only villages in the area with a satis-

factory supply of piped water are Leintwardine and Brampton Bryan, most of the properties in which are served by a privately owned supply. *Less than 10% of the population is served by publicly owned piped supplies—about 25% of which are from standpipes.*

ROSS and WHITCHURCH. The parishes of Bridstow and Ross Rural are supplied from the Ross Water Undertaking. Piped supplies are also provided in Brampton Abbots, Garway, Harewood and Llangarron. Out of the 3,872 houses in the district, 14% have piped supplies from publicly owned mains and 13% from mains privately owned. *There are eight parishes where supplies are inadequate or of bad quality. They are classified in the Survey as 'black spots'.*

WEOBLEY. Apart from housing sites, piped supplies are confined to the village of Weobley which serves 5% of the total population in the district. A scheme is now under way to provide for proposed new houses in Almeley, Dilwyn and Staunton-on-Wye and to supply King's Pyon.

SUMMARY. In his report to the County Council in 1945 dealing with water supplies, Major Waters stated the county as a whole is not well provided with underground resources of any considerable magnitude except in the neighbourhood of Ross-on-Wye, but is abundantly provided with surface water in streams of high quality and in rivers, and that the main problem in the distribution of supplies arises from the low density of population in the county as a whole and the scattered nature of development in rural areas.

### Electricity

Since the introduction of the national grid system, and the concentration of distribution in the hands of the Midlands Electricity Board, the electricity map of the county shows fewer blank spaces every year. In the decade before the late war, the number of consumers more than doubled in the villages and multiplied three times in the towns. The number of consumers, excluding Leominster, was over 12,000. During the same period domestic and commercial consumption, in terms of units, grew from 2.5 to over 8 million. There are now in the county more than 600 substations and the number of consumers has increased to well over 20,000, with a corresponding increase in the number of units consumed. The demand for electricity supplies far exceeds the rate of development, but the insistence by the Ministry of Health on electricity for all new Council houses has brought the supply to a number of new villages. The only bar to further development is the cost of connection to the distribution system for scattered houses, farms, and rural industries.

### Gas

The only areas served with gas are the six market towns and Colwall with Coddington. In 1951 there were 14,500 consumers of gas, 80% of whom in the county used it mainly for domestic use. All the undertakings are, since nationalisation in 1949, part of the West Midlands Gas Board (Worcestershire and Herefordshire Division), except Ross, which is attached to the South-Western Gas Board. Cusop also is supplied from Hay.

The present plants can supply gas to additional households as follows:

Hereford	...	...	...	...	...	500
Colwall	...	...	...	...	...	50
Ledbury	...	...	...	...	...	150
Leominster	...	...	...	...	...	300
Ross	...	...	...	...	...	80
Kington	...	...	...	...	...	80

It is probable that the interlinking of work in the future will bring gas from the towns to the villages. Calor gas is widely used where there is no piped supply. This is delivered packed in steel cylinders.

### COMMUNICATIONS

#### (b) Roads

The line of the roads in Herefordshire is determined by the physical pattern of the county. Hereford is the natural focus of the roads that run along the Wye and its two tributaries, Lugg and Frome, and the starting point for the road that follows the valley of the Worm brook to the south-west, Abergavenny and South Wales. The Wye is not crossed with a first-class road bridge except at Hereford and at Ross, twelve miles down stream (in a direct line). Wilton bridge at the latter place has recently carried loads of 30 tons. There are bridges downstream on secondary roads, near Mordiford (7 tons), at Hoarwithy (7 tons) and Kerne Bridge (13 tons); upstream at Moccas—privately owned—(2 tons), Bridge Sollers (10 tons), Bredwardine (7 tons) and Whitney, 16 miles away (10 tons), and Hay, 17 miles away, just outside the Herefordshire boundary.

The most important individual road into Hereford is over the Wye bridge from the south. This causes considerable congestion, which can only be lessened by another bridge and a by-pass road. If the Severn bridge is built, both would be essential. There is at present some diversion from Hay direct to Leominster, though in places—e.g., at Kinnerley, Dilwyn and Monkland—the road is narrow and winding. The road motto of Herefordshire was always 'One good turn deserves another', though many improvements are now evident.

In Ross the traffic is fairly evenly divided between that from Gloucester and the Forest of Dean, and from Monmouth and the south. Traffic coming from the east and moving towards South Wales leaves the Hereford—Ross road on the Hereford side of Ross.

Leominster lies on the main north and south road.

Ledbury is the connecting link between the county and Worcester and Gloucester and takes 82% of its traffic.

The traffic of Bromyard is mainly to and from Hereford and Worcester.

Kington has a definite east and west connection into Radnor, and beyond to Abergystwyth, though the main central Wales traffic goes by way of Leominster and Presteigne or Knighton.

The most striking features in road transport of recent years has been the increase in 'bus consciousness', which creates and depends on good service. No one since the late war has left Weobley for Hereford (12 miles) because



the service provided is so satisfactory. This consciousness, however, is not constant. Insistent demands for regular services from Leominster to Hay through Weobley and from Kington to Lingen have had to be reduced to a skeleton service for lack of support. As Herefordshire is an agricultural county, the greater stream of traffic flows to and from the richer lowlands. In the poorer areas of the west and north-west and elsewhere the service to and from the market town is often inadequate.

No development of local industries is possible unless the village concerned has a daily bus service.

### (c) Railways

Railway communication is provided:

(1) by the line from Central Wales and Hay along the Wye valley to Hereford and thence by Ross to Gloucester. There are two lines from Hereford to South Wales, one *via* Monmouth and the other *via* Abergavenny. Hereford is also approached (2) along the Lugg valley by the line from the north by way of Shrewsbury and Leominster; (3) along the Frome valley from Ledbury and beyond, Worcester, Oxford and London, or from Birmingham; (4) by the line from Leominster and Kington.

All these lines were, before amalgamation, operated by the Great Western Railway system. The Shrewsbury - Hereford line (2) is part of the main line to Bristol and Cardiff from Manchester, Liverpool and Crewe which reaches Bristol by way of the Severn Tunnel and provides through passenger trains from Scotland, Yorkshire, Lancashire to South Wales and the West of England.

All the towns in the county were connected by rail until 1952 when the Leominster - Bromyard and the Golden Valley passenger services were discontinued.

On the whole, railway movement is not so popular as the door-to-door service of the local 'buses', which connect practically every village in the county with Hereford and one or other of the small market towns. Regular services run by long distance motor coaches, moreover, now link the county with all parts of the country, and at considerably less fares than the railways charge.

As far as goods are concerned, with yards at Hereford and Leominster and sidings elsewhere, the railways are well served and carry heavy materials. Before the late war (13 years ago) Hereford handled 41% of the traffic, Ross 18%, Leominster 15%, and this percentage is practically the same in 1953.

The service to London by way of Worcester and Oxford is not very satisfactory, though there is an alternative route by way of Gloucester.

### Telephones

The telephone is a necessary adjunct to friendly and effective communication. There is, naturally, a great concentration in Hereford city with 2,343 telephones connected with the Hereford Exchange. There are also new developments. Weobley, for instance, has now an automatic telephone system serving neighbouring villages with a population of approxi-

mately 2,500. A very large new telephone exchange was also opened in Hereford in 1953.

The county, especially in the Ross area, is well served with call-boxes, though they are not so frequent in the more sparsely-populated north-west.

In the course of this survey certain suggestions have been made. These must not be taken as criticisms. They have arisen from two motives only—a consideration of the best way to preserve the agricultural status of our county and how to provide the amenities which alone will keep our young folk at home. These are the two main problems that confront our Councils and their officials.

The more I learn about these Councils and their work, the more sure I am that they are striving with might and main to achieve these two ends, the prouder I am that I am privileged to live in this land of wool and wheat and water and apples. I see no reason to sit down and weep beside the waters of Wye.

[My thanks are due to the officers of the Herefordshire Town and Country Planning Committee for their great help in preparing this paper.]

## CHAPTER XIII

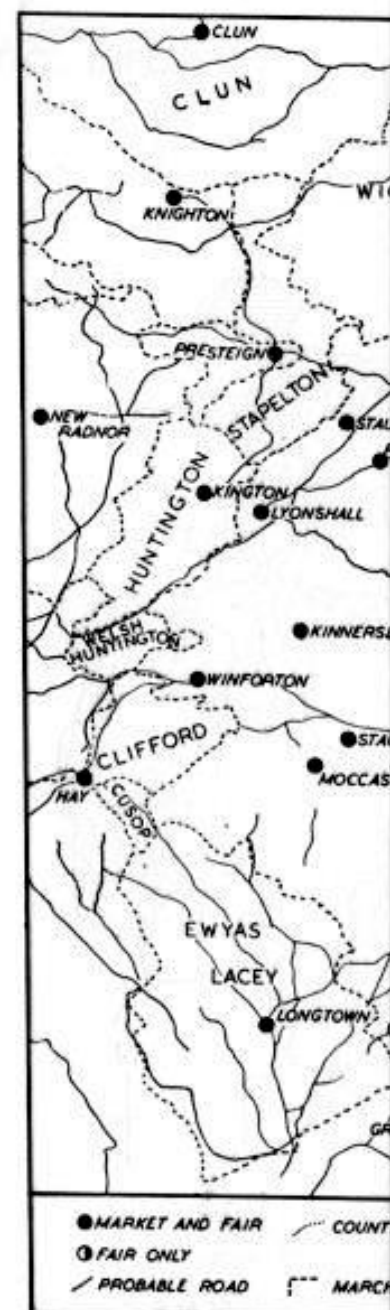
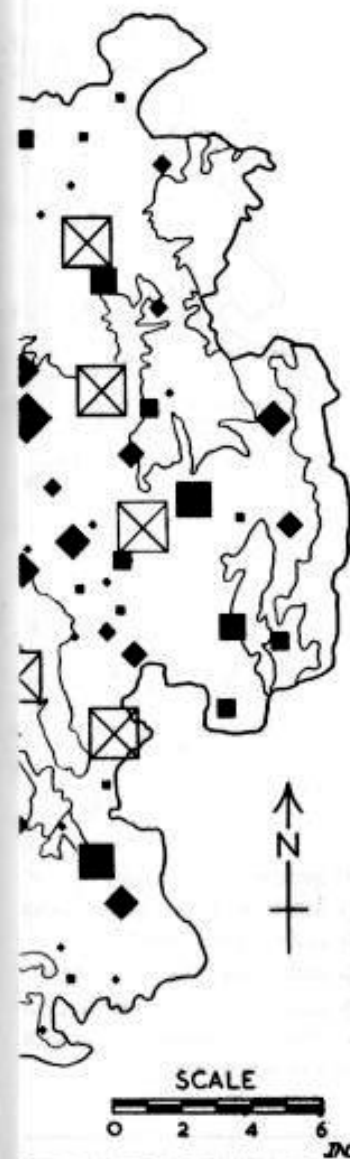
# The Historical Geography of Herefordshire, from Saxon Times to the Act of Union, 1536

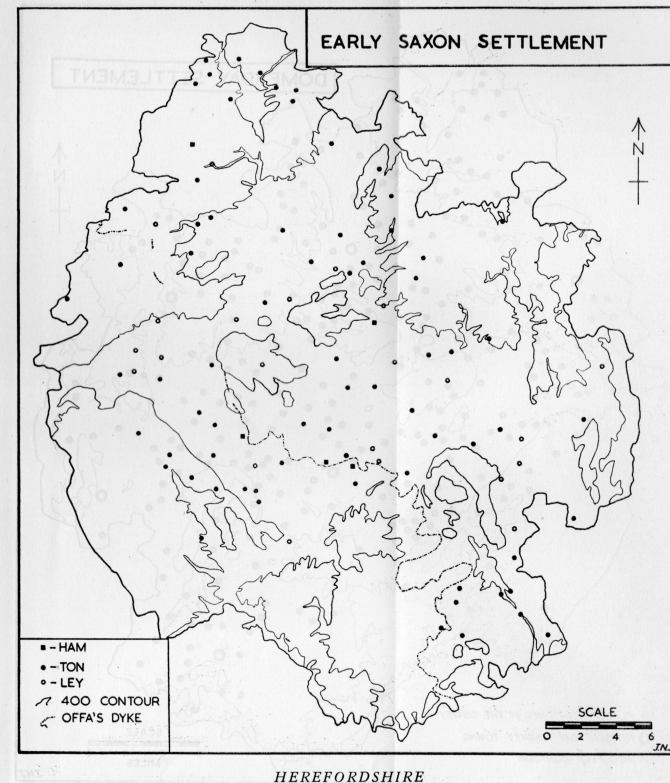
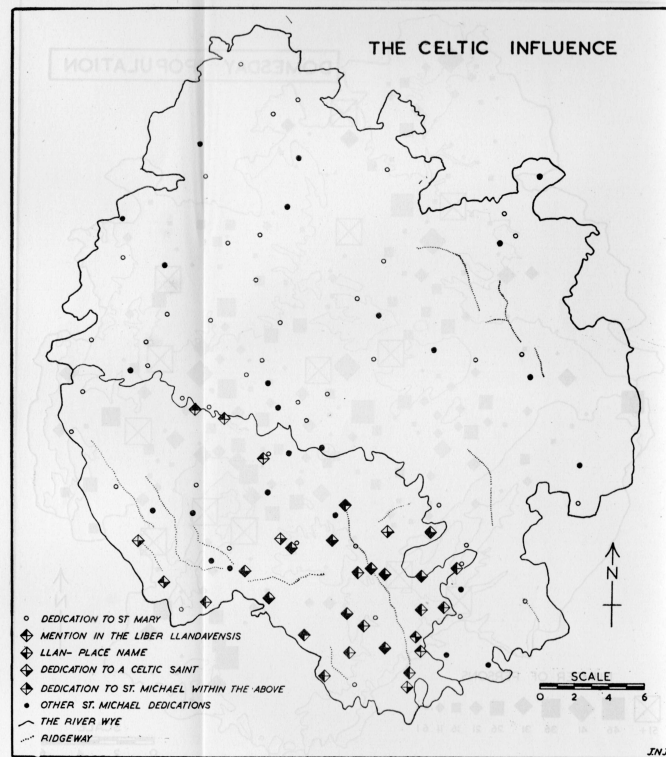
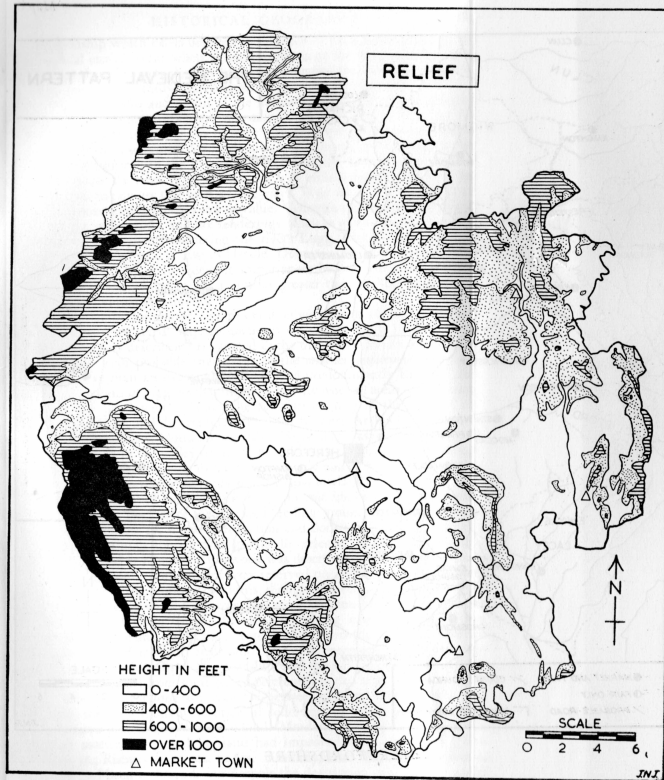
By J. N. JACKSON, B.A., F.R.G.S.

“SO narrowly did he cause the survey to be made that there was not one single hide nor rood of land, nor was there an ox, cow or swine that was not set down in the writ.” Thus bewailed the Saxon chronicler when describing the Domesday Survey of 1086. Compiled primarily to assist with the proper collection of the Danegeld, this comprehensive mass of fiscal information provides a convenient foundation against which the human and physical environment of the Herefordshire countryside may be examined. The actual interpretation of the detail can never be absolutely precise, for many statements prove either ambiguous or elusive in their exact meaning. For example, any assessment of population must overlook such vague remarks as “certain other men” or “so many Welshmen”, and suggest an arbitrary weighting factor to translate the listed male population into a total figure for the village or county. On the basis that the average size of the family group was 3.5 persons, the county at the time of the Domesday survey contained a total population of some twenty thousand persons, a figure which was greater than those of the neighbouring counties of Worcestershire and Shropshire, but less than that of Gloucestershire.

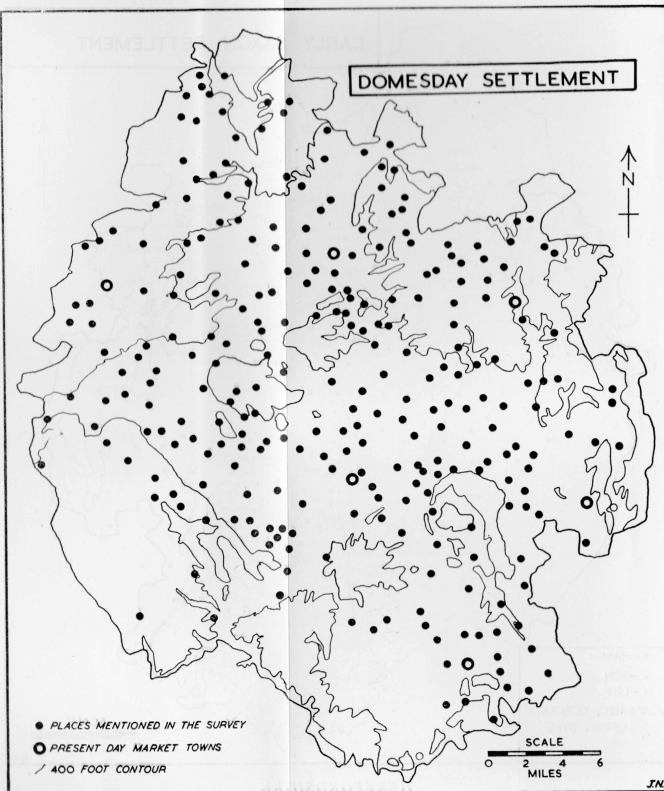
The strategic castles of Hereford, Clifford and Wigmore were doubtless the principal centres, though Kilpeck, Longtown, and Richard's Castle probably functioned as subsidiary markets for the exchange of rural produce. Several villages were outstanding within their local areas for population size, and their range of recorded facilities: Woolhope in the centre of the Woolhope Dome with Fownhope and Much Marcle to west and east, Bishops Frome in the Frome valley, and Leintwardine to the north of the Wigmore basin may all be cited as examples. Of the present market towns only the waste manor of Kington remained insignificant, for both Ross and Ledbury were already larger than their immediate neighbours and Leominster formed the nucleus of an extensive royal manor with sixteen lesser members. Bromyard was outstanding within the sparsely populated region of the north-east uplands. Hereford, probably with a population of over a thousand persons and the only true town at this period, served the greatest concentrations of settlement and was surrounded by many villages with a population of a hundred inhabitants or more. At the other end of the scale were the many small villages and hamlets with an enumerated population of less than ten households. They comprised one-third of the inhabited settlements, and occurred within both the lowland and upland regions of the county. Despite their small size, these rural farming communities were firmly rooted, and have survived the economic vicissitudes of many centuries to stress the intimate

## POPULATION

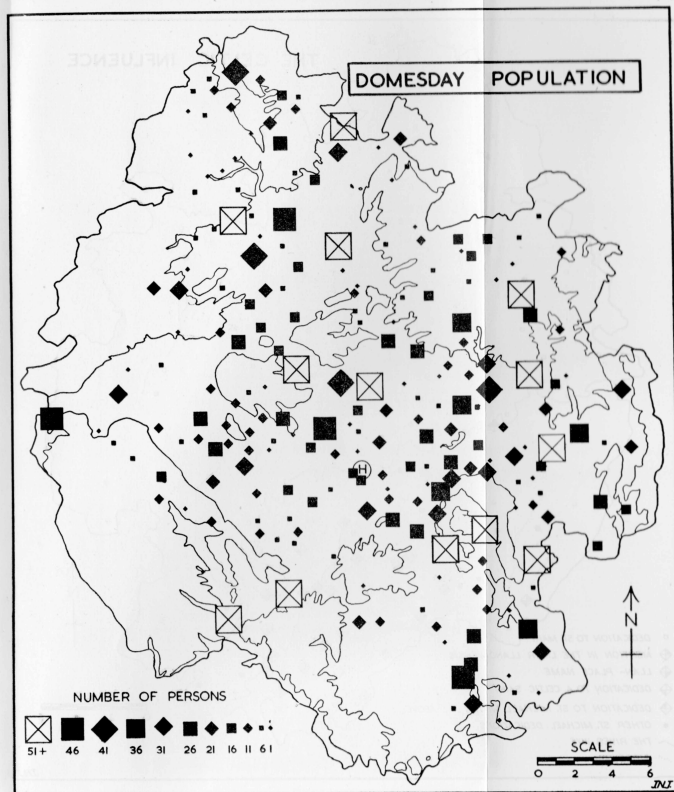




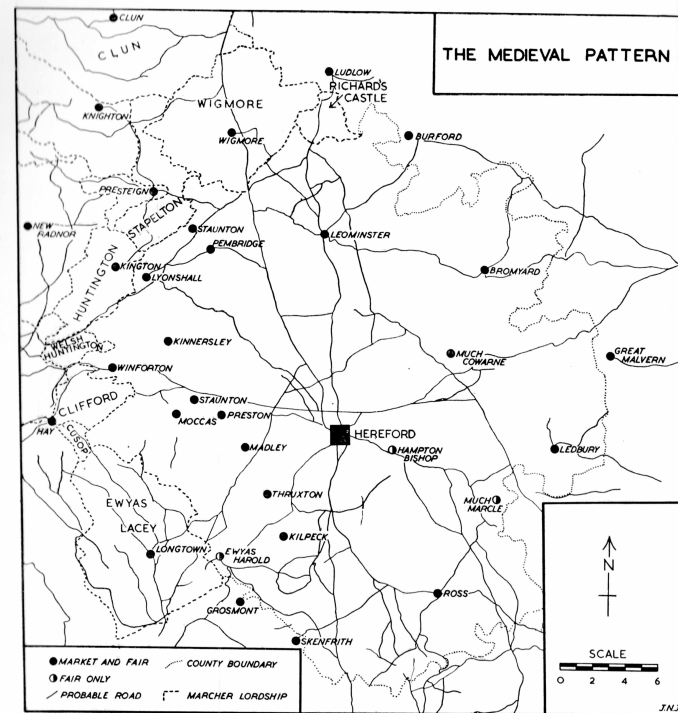




HEREFORDSHIRE



HEREFORDSHIRE



HEREFORDSHIRE

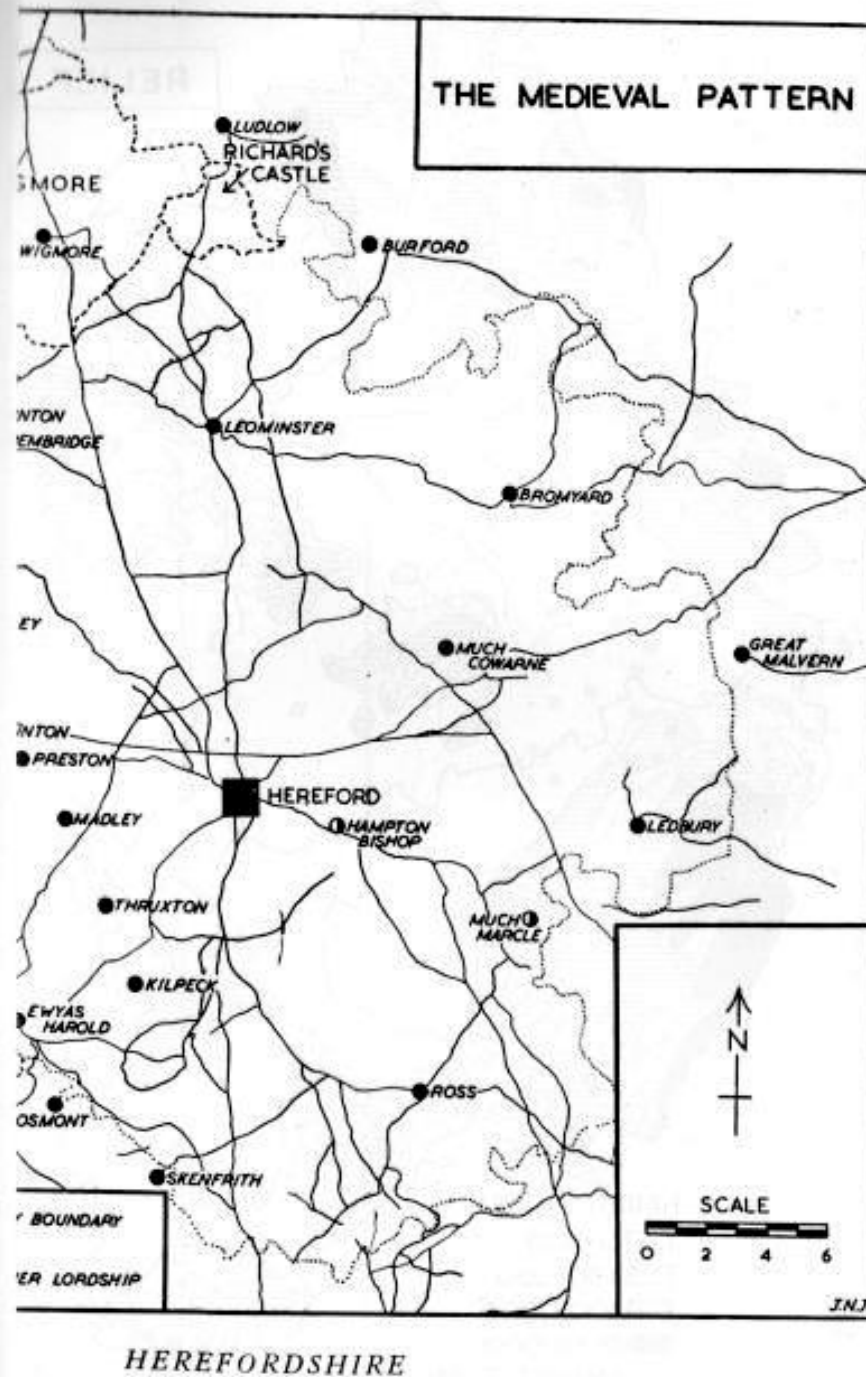
relationship which exists between the pattern of rural settlement and the physical environment when agriculture remains the dominant industry. Although subsequent changes have supplemented the Domesday pattern, they have not radically altered either its shape or its emphasis.

The most valid and useful of the indications of a settled and peaceful agricultural community were the numerous references to mills for the grinding of corn. Some ninety were recorded, with pronounced concentrations over the central lowlands around Hereford, in the Lugg valley below Kingsland, in the Frome valley, and in the Ross lowlands on the left bank of the river Wye. By contrast, the mills situated within the less peaceful terrain to the west of the river Wye were scattered in their distribution and invariably low in value. Fisheries were usually associated with the water mills, and tax renderings of sticks of eels proved frequent from the settlements bordering the rivers Lugg, Frome, and Wye, but were also mentioned at Ewyas Harold, Downton, and Sarnesfield. River fishing was also of considerable importance; indeed, one fishery in the river Wye was valued at £6, a sum far greater than the tax rendering of many individual settlements.

Woodlands dominated the physical environment of certain upland regions and received frequent mention within the pages of the survey. Eardisley was described "as situated in the midst of a certain wood", and it would seem probable that many of the smaller settlements occupied little more than an extensive clearing in a predominantly forested area. The distribution suggests that the most heavily wooded areas of the county were the north-west uplands, the Silurian country to the west of the Malvern Hills, and the triangle of territory between Archenfield, the river Wye and the Black Mountain foothills. Woodland was mentioned around Letton lake, in the valley of the Stretford brook and over the Woolhope dome, but would appear to have been largely absent from the Dittonian strata of the north-east uplands and the Ross lowlands.

The functions of woodlands in the economic life of village and manor were many. They were the accepted feeding ground for swine, and the source of timber for house construction and domestic fuel. The trapping of forest animals therein was specifically referred to at Titley, Lingen, and Lye, and at Kingstone the wood was described as rendering "no dues except venison". Some woods were reserved purely for hunting, the principal sport of the Norman overlords, though of even greater area were the two royal forests which lay beyond the scope of common law. One covered the Forest of Dean fringe; the other lay to the west of Hereford, was smaller in size and might have been located to provide a defensive barrier against a sudden Welsh onslaught. The close economic link between the deciduous woodlands of Herefordshire and the salt industry at Droitwich may be inferred from some dozen references to this trade.

When comparisons are available between the tax yields of 1066 and 1086, the indications were often of solid agricultural achievements and increased productivity from the land. Marden had rendered £9, but was later assessed at £16; Kingsland had improved from a value of £6 to £15 3s.; Risbury from 20s. to 60s. Similarly, land described as waste at 1066 had been reclaimed. At Yarpole the description ran, "it was waste,



Now there are two bordars with one plough"; at Wootton, "it was waste. Now it pays 62d. to the King's farm." There was also a considerable body of evidence to indicate the pioneer expansion of agricultural settlement into virgin forest. At Marcle the survey recorded that, "in the same manor are 58 acres of land reclaimed from the wood"; in the manor of Leominster, "land reclaimed from the wood yielded profits of 17s. and 4d."; at both Weobley and Fernhill was "assart land for one plough". Similar pioneer endeavours presumably underlay the statement at Letton that "on the demesne are 7 settlers", and the reference to men at Hope, "rendering 10s. and 8d. for the land on which they have settled".

In complete contrast was the sorry trail of waste land, untilled acres, and destroyed villages left in the wake of Welsh raid and Norman sortie. Referring to the holdings of the Church of Hereford the survey observed that "Bishop Robert found 40 hides waste when he came to the Bishopric, and they are so now." The king held on the border of Archenfield "nine manors which are waste"; in Archenfield itself, "King Griffin and Blein laid waste this land T.R.E.<sup>1</sup> and so it is not known what it was like in that time." The majority of the waste manors lay within either the North-West Uplands, Archenfield or the Golden Valley; others were clustered around the Vale of Wigmore and some had disrupted life within the North-East Uplands. Settlement within the central lowlands round Hereford, the Ross lowlands to the east of the river Wye, and in the Leadon and Frome valleys remained unmolested.

As the survey was concerned primarily with the cataloguing of Saxon and Norman manors, regions of Welsh settlement remain blank on all maps plotted solely from the official records. To offset this inherent disadvantage places mentioned in the *Liber Landavensis* of 1132 may be used as a partial supplement to the Domesday information. From this Welsh ecclesiastical source it would appear that the closest concentrations of Welsh settlement lay within the Ross lowlands; some smaller cluster occupied territory to the north of the Aconbury - Garway line of hills at Kilpeck and Callow, and around Moccas, Madley, and Preston in the Wye valley. The Monnow valley was also settled, Garway and Llanrothal being sited in the lower reaches, and Clodock, Llancillo, Kentchurch and Kenderchurch along the upper course of the same river. The hill areas above the 600 foot contour do not appear to have been closely settled.

Direct evidence of the Welsh cultural influence was also provided by the pages of the survey. The Saxon hide and virgate formed the unit of land measurement only where the manor had been in English possession for a considerable period, whereas the carucate suggests a late occupation by Welsh tenants. In the Golden Valley and over the North-West Uplands nearly all manors were assessed under hides, but in the provinces of Ewyas and Archenfield the holdings of the Norman lords and the locally autonomous Welsh areas were not hidated. Carucates of land were recorded within the jurisdiction of the castles at Clifford, Caerleon, and Ewyas Harold; the sole mention within the more anglicised areas was at Livers Ocle, which may indicate the late survival of Welsh settlement groups

<sup>1</sup>Tempore regis Edwardi (in the reign of King Edward).

within the North-East Uplands and its fringe areas. Welshmen and hides of Welsh land were recorded on the left bank of the river Wye in border locations close to Welsh territory, at the castles of Ewyas Harold and Clifford, in the Golden Valley at Bacton and Bach, and at Llanwarne in Archenfield.

The amounts of honey-rent tax also signified the survival of Welsh economic traditions, and contrasted with the monetary payments of English localities. Central Archenfield paid an annual tribute of 41 sestiers of honey, and the statement from Garway that "the forest renders half a sestier of honey" perhaps indicated that the wild product was collected. It provided an important item of trade, and was used especially for sweetening and for the manufacture of candles. References are plentiful, and their distribution emphasises those Welsh areas which have already been mentioned, and expands upon these indications in territories to the east of the river Wye.

Of the implications which may be drawn from these Welsh distributions, two prove to be of special note. The name "Archenfield" is supposedly derived from Ariconium, the Roman village near Weston-under-Penyard, yet referred to a district which by 1086 lay wholly to the west of the river Wye. Should the place name derivation be correct, the evidence of honey rents further supports the contention that the catchment area of the Rudhall brook to the north of the Forest of Dean had previously supported a Celtic population. Secondly, Offa's Dyke had been superseded as the western frontier of English territory and had been replaced by an indefinite western boundary which fluctuated with the ebb and flow of Norman conquest and Welsh invasion. "What Harold had recovered with his light infantry, that William FitzOsbern and his mailed horsemen could hold at the lance's point, that at the moment of the great Survey, was all part of Herefordshire—no more and no less."

Behind the frontier, cultural pockets of Welsh tradition and custom remained unabsorbed. Outstanding were Ewyas, to the west of the Golden Valley, and Archenfield, between the Worm brook and the rivers Wye and Monnow. That a certain amount of animosity existed between the Welsh of Archenfield and their cultural kith and kin cannot be doubted, because "when the (English) army goes forth against the enemy these same men, according to custom, make the vanguard, and on the return, the rearguard". Coupled with the border location of the region, this dubious privilege must have seriously curtailed both the expansion of settlement and the natural growth of population within the Ross lowlands to the west of the river Wye.

Summarising the Herefordshire of 1086 by a quantitative assessment, it may be noted that some 4,550 households occupied about 300 settlements, and that some 2,400 plough-teams tilled approximately 1,150 hides of arable land. To these figures should be added an unknown number of Welsh villages, tenants, and cultivated fields from the border districts of Ewyas and Archenfield. The survey has indicated a fundamental contrast in land use and economic well-being between the border territories of the west and the more peaceful eastern zones. Norman castles at Ewyas Harold, Wigmore, and Clifford formed the western outposts of royal



authority, but were surrounded by a sorry havoc of waste manors and derelict ploughland; elsewhere the existing pattern of rural communities was already firmly established, with mills, fisheries, and woodlands providing essential features in the village economy. The greatest centre of population was the city of Hereford—a fortified borough and cathedral town which combined the dual functions of administrative centre and garrison town for the military subjugation of Wales, with commercial activities as a trade entrepôt, market town, and service centre for the lowland settlements within its vicinity.

Though no precise account or absolute chronology can be attempted, it seems probable that permanent Saxon settlements were not established in Herefordshire until the seventh and eighth centuries A.D. Place name suffixes, and especially the early *-ham* and *-ton* endings, provide virtually the only indication as to the initial areas of primary settlement; limited corroborative material is available from archaeological and literary sources. In the north-west uplands several *-ton* place names were clustered round the vale of Wigmore. Some (such as Aston, Elton, Burrington, Kinton and Downton) occupied sites between the spring line in the Aymestrey limestone and the marshy alluvial bed of the former glacial lake; other settlements (Brampton, Buckton and Adforton) were located on dry gravel sites. Colonisation to the south-west would appear to have followed the structure of the country, to have avoided the upland areas and to have shunned the valley bottoms. Kington, on a spur of Hergest ride, overlooked the valleys of the river Arrow and the Cynon brook; Little Brampton faced the alluvial flats of the Hindwell brook, and Byton lay above an area which retains a marshy character to the present day. All settlements within the north-west uplands lay below the 600 foot contour line; only Staunton-on-Arrow, Milton, and Marston were situated below 400 foot O.D. There were no settlements on the low hills of the Radnor border to the south of the river Arrow.

A second line of Saxon settlement would appear to have followed the range of hills to the east of Leominster and to have passed to the south of the Dinmore—Wormsley hills, an unoccupied area, into the Hereford lowlands. Here settlement occurred entirely below 400 feet O.D., and tended to be located where superficial gravel deposits provided a lighter vegetal covering than the heavier forest of the Downtonian marl. Typical of such dry sites were Bodenham, Moreton Jeffreys, Moreton-on-Lugg, Stretton Sugwas, Barton, and Warham. To the south of the river Wye, similar geological conditions prevailed and settlement was attracted past Tyberton, Brampton, Webton, and Kingstone on to the hill slopes which flank the valley of the river Dore. The fringe of the Letton lake region at Norton Canon, Letton and Winforton also seems to have been penetrated at about the same time. A third grouping of settlement was attracted over the tail of the Woolhope Dome into the Ross lowlands, but did not penetrate over the right bank of the river Wye. The south-west uplands, the drainage areas of the Garren and Gamber brooks, and the hills to the south of Hereford were probably not settled by the Saxons.

The evidence of early Saxon place-names reveals a barren arc of settlement extending from Laysters hill to the southern end of the Malvern

range, and suggests that the major routes for the penetration of Herefordshire followed the Teme valley from the Severn plain of Worcestershire. Within the county the routes diverged—one set advanced into the north-west uplands; a second group followed the Lugg valley into the Hereford lowlands. In the south-east of the county the approach would seem to have been from Gloucestershire along the western side of the Leaden valley. Saxon settlements were concentrated within the lowland areas and lay entirely below the 600 foot contour; they avoided the floodable area of the valley bottoms, steered clear of the Old Red Sandstone hill areas, and preferred either the lighter sandy soils or the hill slopes.

Precise dating evidence remains scanty. Mercia was divided into five dioceses in the late seventh century—an ecclesiastical event which indicated not only that Hereford then formed a focal centre of regional importance, but also that the rural settlements in the vicinity were of sufficient magnitude to warrant the establishment of a new bishopric. The *Liber Landavensis* has placed in the first half of the same century the overthrow of the Britons in the triangle formed by the Dore, the Worm, and the Wye; the *Saxon Chronicle* has recorded a battle between the English and the Welsh near Hereford about 760. Of more permanent character was the route of Offa's dyke, an eighth century national division, which extended from Prestatyn to the mouth of the river Wye at Chepstow. It entered Herefordshire along Herrock and Rushock hills, crossed the Arrow valley to the south of Titley, and passed over the valley of the Curl brook to the west of Lyonshall. The dyke was then discontinuous along the watershed between the Letton lake and the Stretford brook, but re-emerged to cross the valley of the Yazor brook to the south of Burton hill. It passed into the river Wye to the south of Garnons hill, and from henceforward the river Wye is thought to represent the boundary. Sir Cyril Fox has suggested that the dyke was constructed only in Saxon clearings, and has inferred that it was not constructed through intervening forest which were considered an impassable barrier. The fact that there were no early Saxon settlements close to the discontinuous stretches of the dyke lends support to this view.

The similarity, co-ordination, and efficiency with which the dyke was constructed over its national length indicate that some form of peace treaty or mutual understanding existed between Offa and the Celtic rulers. Many Saxon settlements in north-west Herefordshire and east Radnorshire lay to the west of the dyke, and were either abandoned upon completion of the frontier or remained within territory subject to the laws and customs of highland Britain. In the central lowlands the strong natural tendency for a western extension of Saxon settlement over to the right bank of the river Wye, and the abandonment of the area by the Welsh, suggest its retention in friendly hands for the protection of Hereford and to safeguard the security of the lowland settlers in the neighbourhood. Hereford itself certainly flourished as a market and trading centre. Offa endowed the cathedral after the murder of Ethelbert, king of the East Angles, in 793; the city minted coinage from about 913; it was the meeting place between Athelstan and the Welsh princes about 931, when the river Wye was confirmed as the national boundary. In the early tenth

century, western Mercia was divided into shires and Hereford proved to be of sufficient importance to endow the newly formed county with its own name. Of the emergence of other centres, but little is known. There is mention of a monastery at Bromyard in a charter of A.D. 840, and a nunnery was possibly established at Leominster in the mid-seventh century.

The evidence for native Celtic settlement is likewise scanty, though complete (if sparse) occupation of the county area by Celtic peoples in the pre-Saxon period is suggested by the many British descriptive terms for topographical features. All the principal rivers have ancient derivations and, of the hill names, Malvern, Dinedor, Dinmore, Doward, and Penyard appear to be of British origin. Celtic Christianity flourished over south-western Herefordshire during the fifth and sixth centuries. St. Dubricius was probably born near Madley, and the *Liber Landavensis* has recorded of him that "he retained two thousand clergy for seven successive years at Hentland on the banks of the Wye in the literary study of divine and human wisdom . . . and during another space of time, he remained with his numerous disciples for many years, having chosen a place convenient for wood and fish on the banks of the Wye, giving it the name of Moccas."

Dedications of the church or village to other Celtic saints also prove to be plentiful. Saint Beino lived in the late sixth century and has given his name to the hamlet of Llanveynoe; Saint David, the pre-eminent Celtic saint of the mid-sixth century, is reputed to have built the church at Leominster, and sites at Kilpeck, Little Dewchurch and Much Dewchurch were dedicated to his memory. St. Deinol, a contemporary of St. David, was commemorated in the dedication of the church at Llangarren; Kenchester was named after St. Keyna and Saints Cynidr, Tyssilio, and Junabuis are presumed to have founded the churches at Kenderchurch, Sellack, and Llandinabo. St. Weonard was commemorated at the hill village of that name; the Celtic dedication at Llanrothal is now unknown. The founding of a church at Clodock is stated by tradition to be due to the funeral cortege of Saint Clydog being delayed at the river crossing.

Original dedications to St. Michael are also thought to represent the survival of a Celtic influence and, in Herefordshire, thirty churches have St. Michael as their patron saint. Of these, one-third occur in the regions of established Welsh settlement to the south and west of the river Wye; a further eight lie close to the river Wye but on the left bank. Of the remainder the majority are located within the upland areas of either the north-west or the north-east. St. Michael was also invoked as the protector of high places and, of the definite Celtic settlements already noted, many are located on hill tops, ridge crests, or watersheds. Llanveynoe, St. Weonards, Llandinabo, and Callow may be cited as examples. This characteristic physical location of Welsh settlement in upland areas and above the damp oak forests on the heavier soils of the river valleys has provided a cultural feature of great geographical significance. Connecting trackways tended to follow natural ridge routes and to cross river valleys at their narrowest points. Two may still be traced for a distance of more than ten miles and probably represent old Celtic routes of travel. The first follows the western drainage divide of the Dulas brook from Urishay common to Ewyas Harold and thence through Bagwy-Llydiart and along

the ridge crest of Saddlebow and Orcop Hills; the second is the pre-turnpike Hereford to Whitchurch road from Callow church *via* Llandinabo and St. Owens Cross to Marstow.

The survival of Celtic administrative boundaries along former non-settlement areas in the valley bottoms often coincides with the other indications of Celtic settlement. In the Golden Valley, the Dulas brook and the river Dore form parish boundaries only for the hill villages of Bacton and St. Margarets. This feature is remarkable, for elsewhere riparian parishes straddle both side of the rivers. The river Monnow forms the southern boundary of the county for most of its length; the river Teme from Ludlow to Whitbourne provided the original boundary to northern Herefordshire.

Though each of the above criteria by itself may be suspect, the amalgamation of the different factors reveals a reasonably close correlation of the probable areas of Celtic settlement. The evidence seems most conclusive on the right bank of the river Wye. The light sandy soils of the Ross lowlands and the superficial glacial deposits of the middle Wye valley were traversed by Roman roads, and presumably settled and partially cleared of their vegetation during this period; the Black Mountains were occupied by Bronze Age cultures and the survival of a strong Celtic influence may be anticipated from the close regional affinities with the highland massif of Central Wales. In the remaining areas of the county judgment must be more reserved, as Celtic features may have been obliterated by eleven hundred years of Saxon settlement. It would, however, appear feasible that the north-west uplands and the remaining hill areas, containing as they do so many Iron Age camps, were occupied by Celtic tribes at this period. It is into this predominantly Celtic area that the Saxons of the seventh century advanced to initiate settlement in the forested river valleys and to colonise the then uninhabited lowland areas.

The composite pattern of English and Welsh settlements by the end of the eleventh century has already been examined; from the Domesday survey of 1086 to the Act of Union in 1536, the political instability of a border territory provides the background against which the major developments should be assessed. Strife and lawlessness, raid and counter attack, war and pestilence were regular visitors. Baron fought against baron, prince against prince and Norman feudalism clashed with Welsh tribalism. The repercussions were serious. Mills, cottages and growing crops were destroyed; stock was killed, the land laid waste, the population was decimated. The county remained poverty-stricken, and tended to occupy an inferior position in any national assessment of wealth. In the middle of the twelfth century, a Pipe Roll of Henry II has revealed that slightly more than one-fifth of the county's total area lay waste. Henry III, campaigning against the barons of Herefordshire, is reputed "to have found the county so impoverished from the continual devastations it had undergone, that he was obliged to retreat to Gloucester for lack of sustenance". In 1403 and 1404 the ravaged lands of Herefordshire were specially exempted from taxation.

Pestilence and the incidence of Welsh raids added to the woeful story and inflicted new burdens upon an already impoverished county. Prob-



ably one-third, possibly one-half, of its population perished during the Black Death (1348-1349). The Cathedral registers state that the land remained untilled and that the supply of clergy and their incomes were lamentably reduced; in Huntington manor the revenue fell from £52 12s. in 1347 to £19 6s. 5d. in 1348. Of the Welsh raids, those of Llywelyn and Owen Glendower were the most destructive. Territories to the south and west of the river Wye and within the North-West Uplands were frequently affected by the Welsh sorties, but their ramifications extended eastwards over the county to embrace the whole extent of present-day Herefordshire.

The Norman lords often collaborated with the Welsh princes against the authority of the king, intermarriage with racial intermixture was frequent, and there are many indications of the existence of Welsh communities within the Herefordshire area. Thus a document to the clergy of the diocese in 1368 authorised them to hear the confessions of their Welsh parishioners; houses of Welsh gentry were located at Wigmore, Hergest, Whitney, Bredwardine, and Longtown; Cromwell's officers have stated that the Welsh language was commonly spoken in Hereford, and all of Glendower's daughters were betrothed to landed gentlemen from this county. The resultant fusion of cultures has exerted a powerful influence upon the pattern of settlement. Over lowland Britain the medieval period saw the development of the nucleated village around its church, cross-road or market, whereas in highland Britain, the dispersed agricultural community with its many scattered farmsteads provided the more prevalent form. Giraldus, describing Welsh habitations at the end of the twelfth century, observed that "*non urbe, non vico, non castris cohabitans, sed quasi solitarii silvis inhaerens*". The free translation of this quotation — "they inhabit neither town nor village nor castle, but cling to an isolated life in the woods" — would seem to present a most pertinent summary of the settlement pattern in the Herefordshire borderland during this period.

War, devastation, and an amalgamation of contrasting cultures within the geographical province of Herefordshire may all be attributed directly to the regional location of the county at the junction of highland and lowland Britain, the results being reflected in the population figures of the period. The estimated resident population within the county by 1377 was 25,831 persons, an increase of only some 5,000 persons over the Domesday calculation. The growth of population in three centuries had been 25%, compared with a 50% increase in Worcestershire and a doubling of population in both Gloucestershire and Shropshire. The average density of population per square mile had improved proportionally, but the Herefordshire figure of 28 persons per square mile now formed the lowest overall figure within the four counties. A small population, a scattered distribution, a dispersed type of village settlement characterised the Herefordshire countryside; the details of the rural pattern remained broadly similar to that of Domesday, though the growth of trade and service industries had influenced the emergence of certain market towns as local centres for the exchange of produce.

Representation in successive parliaments may be used to provide some approximate guide to the relative importance of these towns. Hereford, Ledbury, Leominster and Weobley sent members to London for the

parliament of 1295; Bromyard and Ross elected burgesses to serve their interests in the House of Commons of 1304, but, from 1306 until Weobley regained its representation in 1627, only the boroughs of Hereford and Leominster sent burgesses. Hereford and Leominster would appear to have been the outstanding regional capitals of the period; Bromyard, Ledbury, Ross and Weobley probably exercised urban functions as small market towns; the many smaller centres with markets or fairs can have been but little more than large villages of purely local significance.

The overall distribution of mediaeval market centres within the county provides a feature of very great significance in that there were no large nodal centres either to the west of the river Wye or within the ravished Mortimer lands of the north-west uplands. During the formative period of town evolution in the twelfth century these border regions proved the most susceptible to Welsh and Norman raid, with the twofold result that their trading outlets tended to lie within the relatively peaceful lowlands at Hereford and Leominster, and beyond the county border north of Ludlow. The growth of potential towns was impaired by constant strife. Ewyas Harold provides an example illustrative of this curtailed growth. Sited close to the entrance to the Golden Valley, commanding the lowland approach from central Monmouthshire and close to the confluence of the rivers Dore and Monnow with the Dulas brook, its geographical potentialities were excellent. Yet, by the fourteenth century, it held only two annual fairs, sent no representative to parliament, and lacked urban status.

Leominster and Hereford both received a high proportion of the Welsh trade. Hereford, with its responsibilities as a county town and cathedral city, slowly grew to prominence, though Leominster, the centre of a fine quality wool industry, was probably the more prosperous. The remaining urban centres, four in number, were evenly spaced between their more affluent neighbours. Bromyard was intermediate between Leominster and Worcester; Ross and Ledbury lay on the roads from Monmouth to Gloucester and Hereford to Tewkesbury; Weobley was equidistant from Leominster and the county town. This uniform pattern probably originated in response to the needs of an agricultural district, and each town exercised the dual functions of collecting surplus produce and distributing consumer goods. The universal demand for services proved of greater significance than did the variations of population density from area to area.

Outside the urban centres, annual fairs were held at Much Marcle and Hampton Bishop; and Much Cowarne, almost intermediate from Hereford, Leominster, Bromyard and Ledbury, supported both a fair and a market. In the western segment of the county the number of small village centres increased greatly, though not one existed within either the south-west uplands or the Golden Valley. At least fifteen have been recorded. Kilpeck and Thruxton served opposite flanks of the Worm valley, with Madley further north. Preston, Moccas, and Staunton were in close proximity along the middle Wye valley. Kinnersley held sway to the north of Letton lake, and Winforton was prominent to the west of this marshy locality. Pembridge formed the main centre to the south of the river Arrow; Wigmore commanded the basin of that name, and Kingston,



Lyonshall and Staunton-on-Arrow were sited along the fringe of the north-west uplands.

A radical and fundamental reversal of conditions had taken place over the thousand years preceding 1536. The native British element in the population had been forced westwards and largely displaced by the Saxon intruder; the upland distribution of settlement had been partially usurped and encroached upon by lowland settlers; the dense woodlands on the Downtonian marl had been substantially cleared and settled; the promotion of trade and commerce had encouraged and fostered the growth of urban centres. The county had been thoroughly permeated by lowland influences, and the political frontier of lowland Britain had been pushed back into the western uplands. Yet behind this tenuous border-line survived resilient pockets of Welsh cultural tradition to diffuse certain indelible characteristics through the Herefordshire environment. To their presence, to the agricultural background, and to the turmoil of a border territory may be attributed the scattered pattern of settlement within the county. The turmoil had largely subsided by the sixteenth century; the results have survived to the present time and continue to influence the features of the Herefordshire countryside.

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## A History of the City of Hereford

By W. H. HOWSE

TO attempt a history of Hereford within the space of a few thousand words is an ambitious project, if that history is to be worthy of the name, and I embark on the task which has been set me all too conscious of the difficulties which lie ahead.

Few towns have a longer or more illustrious history—and few, I feel bound to add, are less conscious of their past. Lest we forget those days when Hereford dwelt very near the throne of England, and had close acquaintance with many names famous in English history, I shall try to recall that past at some length—but not without leaving myself space to say something of the modern growth of Hereford, which belongs equally to its history.

Of the two derivations suggested for the name Hereford, the Welsh "old road" (from *Henffordd*) and the Old English "army ford", I prefer the latter, which, as Dr. Ekwall explains, signifies a place where a marching column can cross a river in closed order. That gives us a clue at once to the significance of Hereford as a military station which, from at least the early seventh century, and for 800 years thereafter, as one of the three main gateways into Wales, was an important strategic centre.

Opinions differ as to the earliest occupation of Hereford. We can probably dismiss as pure legend the story of an early British village called Fernlege on the site, since in any case the Britons were not village dwellers. The late George Marshall in his paper on "The Defences of the City of Hereford", published in the *Woolhope Transactions* of 1940, held that the Romans occupied the site soon after the year 70 A.D. and remained in occupation until about 100 A.D., when they moved to Kenchester. His investigations indicated that Church Street formed the central street of the Roman station, the northern limit of which extended from the present Offa Street, rather north of the line of East Street to the west side of Broad Street. Finds of a Roman altar in St. John Street in 1821 and of a statue of Hermes on the site of the old Eignbrook Chapel in 1828 appear to offer supporting evidence of a Roman post at Hereford<sup>1</sup>.

Hereford first came into prominence with the westward advance of the Mercians, who quickly saw its value as an outpost against the Welsh, and had established themselves there early in the seventh century, if not before. In the latter part of the same century it was made the seat of a bishop—giving it a place among the oldest sees in England. The Saxons took Hereford from the Mercians for a few years in the next century, and defeated the Welsh in a battle there in 760. Offa, the greatest king of the Mercians, soon restored the Mercian supremacy along the whole of the Welsh border, and before his death in 796 had constructed the Dyke which bears his

<sup>1</sup>It may also be noted that D. R. Dudley in his chapter in this volume regards the evidence for the Roman occupation of Hereford as "substantial".

name, to mark the boundary between Mercia and Wales. From Bridge Sollers to Redbrook, a distance of some 37 miles, Offa dispensed with his earthwork and made the Wye the boundary, thus leaving the Welsh on the very doorstep of Hereford. In fact so close was the connection that for centuries afterwards Hereford was described as in Wales, being so named in all the Pipe Rolls and in its early charters.

Offa had a residence in the neighbourhood of Hereford, perhaps near Sutton Walls, though the exact site is not certain. Here occurred about the year 794 the murder of Ethelbert, king of the East Angles, when the guest of Offa, on whom responsibility for the murder was laid. The murdered king was buried at Marden and, following stories of miracles performed at his tomb, his body was moved to Hereford, and eventually to the cathedral, the dedication of which was changed to that of Saints Mary and Ethelbert—possibly by Bishop Æthelstan, who started rebuilding the cathedral in 1012.

After Offa's death the Mercian power dwindled, and the Saxons again came to the fore. Little is known of the history of Hereford during the next 200 years, but we read of the men of the district defeating the Danes in 914, and of King Athelstan (who reigned from 925 to 940) appointing Hereford as the place to which the Welsh princes were to bring him tribute. There was, moreover, a royal mint at Hereford in the reign of Athelstan, in relation to which it is interesting to note that the Domesday Book of 1086 refers to seven moneyers at Hereford, and that an order of Henry III in 1249 made provision for his mint there<sup>1</sup>.

Hereford began to assume a place in English history in the eleventh century, by which time its position as a defensible post on a dangerous border was fully recognized, in addition to its importance as the seat of a bishop and as a trading centre. By the time of Canute (who died in 1035) it had become a shire town, and shortly afterwards was made an earldom. It became especially prominent under Edward the Confessor, who, the son of a Norman mother, settled a number of his Norman followers in the neighbourhood, giving the earldom to his nephew Ralph, and exiling both the English Earl Godwin, who had been Canute's chief adviser, and his son Harold. The Welsh meantime had found a conquering hero in one Gruffydd ap Llywelyn, who in 1055 descended on Hereford itself, defeating Earl Ralph and his mixed force of Normans and English outside the city (probably just beyond Holmer), and afterwards burning the town and cathedral, a major disaster for Hereford, in which many of the inhabitants were killed, including seven canons who tried to defend the cathedral.

Harold Godwin, returned from exile, was given the command in place of Ralph, whom he succeeded as earl after the latter's death in 1057. One of Harold's first acts was to extend the boundaries of Hereford and strengthen its defences by surrounding it with a new ditch and rampart<sup>2</sup>. In a subsequent campaign he completely defeated the Welsh, whose leader, Gruffydd was killed by his own men in 1063.

<sup>1</sup>See Duncumb's *History of Hereford*, p. 345.

<sup>2</sup>A small section of this earthen rampart may be seen in Victoria Street to-day.



SEVENTEENTH CENTURY HEREFORD  
From model in the City Museum

After Harold's death at Hastings, William the Conqueror took early cognizance of Hereford, sending there William FitzOsbern, probably his best officer, as earl of Hereford, with palatinate powers, but taking the town into his own demesne. FitzOsbern was killed in Normandy in 1070, but within three years he had transformed Hereford into a strong fortress against the Welsh and a civic centre of some consequence. In his time we first hear of a "castle" at Hereford.

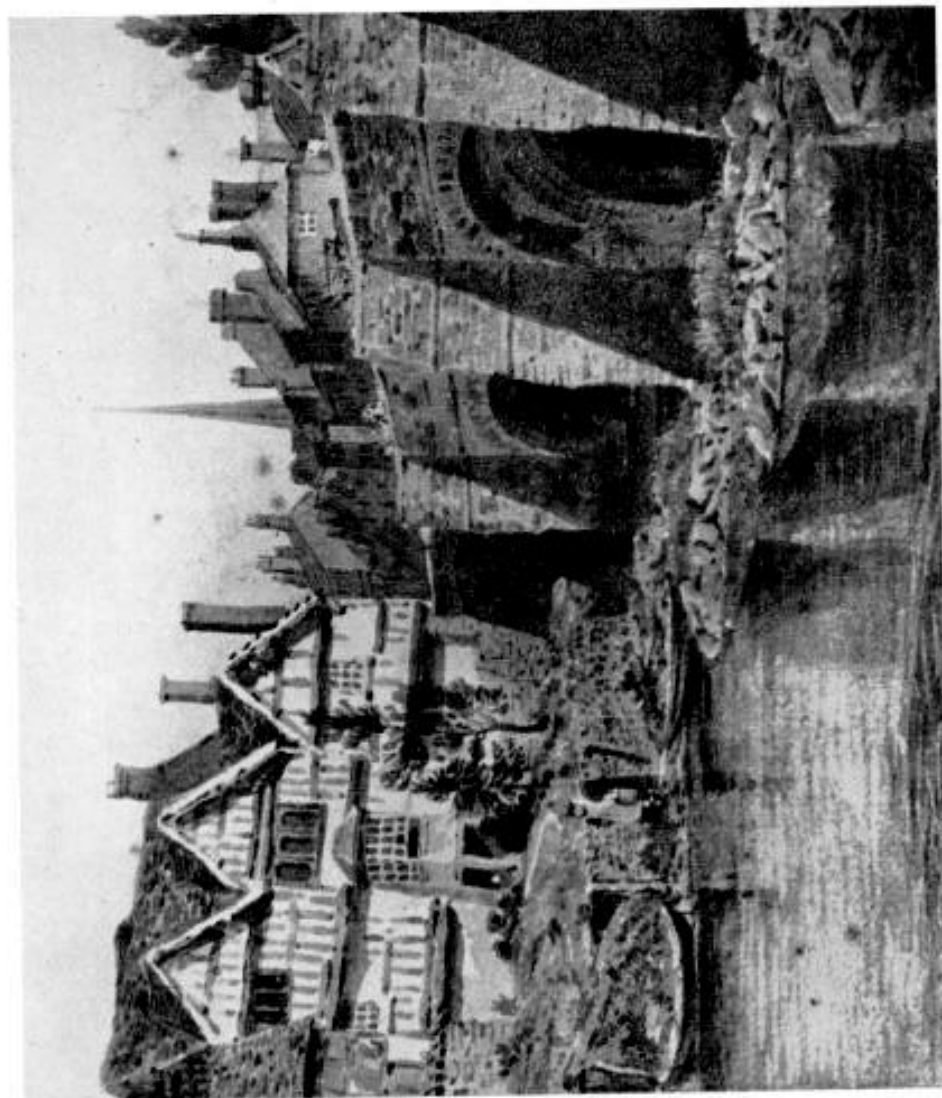
He stimulated the corporate life of the town by introducing Normans from his home town of Breteuil, whom he attracted by the offer of certain privileges. It was not long before these new inhabitants became absorbed into the population, and all—Normans and English alike—subscribed to a common code of laws and customs. These Hereford laws and customs became of signal importance, for, although a code embodying them, drawn up in 1154, was lost, they were written out afresh later (doubtless with some additions) and were taken as models by a number of Welsh towns, and adopted by Edward I for his new boroughs in North Wales<sup>1</sup>.

Returning to our history, Hereford soon found that its newly acquired prominence was a mixed blessing. It had to endure an attack by a force of Saxons and Welsh in 1067, which was repulsed by the Normans, and in 1088 the neighbouring Lords Marchers seized the town against William Rufus. This revolt was crushed, only to be followed by another in 1095, which also failed. Then the troubles of Stephen's reign gave Hereford its first taste of civil war on a larger scale. Its castle, already a royal castle—it had been held for Henry I by Walter, the Constable of England—was quickly seized for the Empress Maud. This brought Stephen with his army, and town and castle were taken after a siege, Stephen signaling his victory by attending service in the cathedral wearing his crown and robes on Whitsunday in the year 1138. Maud, however, recaptured the castle and made her supporter, Miles of Gloucester, earl of Hereford. In doing so she granted him the castle and town, but withdrew the palatinate powers given by William the Conqueror to Fitz Osbern.

Roger, the son of Miles, rebelled against Henry II in 1155, and fortified Hereford castle against the king. The rebellion was quickly put down by Henry, who retained in his own hands the castle, which thus again became a royal castle, and so remained until Charles I disposed of it. The earldom of Hereford fell into abeyance, and the town itself was again taken into the possession of the Crown, as it had been by William the Conqueror.

Here, after so much warfare, we may interpolate three items of peace, the last of which was of enduring importance to Hereford. In 1158 the town had another visit from Henry II, but this time only in the course of one of his Welsh campaigns. Next, in 1188, it saw Archbishop Baldwin and his faithful henchman and chronicler, Giraldus Cambrensis, set out on their crusade-preaching journey through Wales. Would that the arch-deacon had included Hereford in his wonderful description of that journey! Then, in 1189, it received that early Charter from Richard I which, in return for a payment of 40 marks and a fee-farm rent of £40, gave the townsmen the rights and interests of their town which had formerly

<sup>1</sup>They are set out at length on pp. 317-344 at Duncumb.



WYE BRIDGE, HEREFORD  
From water colour by I. Powell, c.1830, in the City Museum



belonged to the Crown. Remarkable to add, this rent is still paid to the Merchant Taylors company in London, to whom it was sold by Charles II.

The townsmen soon began to enlarge their boundaries, particularly those on the north side, which they moved from Harold's line, just north of East and West Streets, to nearly as far as the present Newmarket, Blue School, and Bath Streets. A condition of Richard's charter was that they should help in improving the defences of Hereford.

Richard's charter was confirmed in a further charter from John, and again in another from Henry III, who granted the city (as we will henceforth call it) a guild of merchants and traders and other corporate privileges.

This, however, is looking ahead. The peace of Hereford was again disturbed by civil war in the reign of Richard I, during which it underwent two further sieges, the second in 1197, when it fell to the Justiciar, Hubert Walter, on behalf of the Crown. King John, who was generally at war with the Lords Marchers or the Welsh, or both, visited Hereford on several occasions, the first in 1200, the last in 1216. He revived the earldom and gave it to the de Bohun family, who held it for over 250 years.

His successor Henry III made Hereford a base in his campaign against the Welsh in 1231, when one of his cares was to strengthen the castle. He again came to the city in 1233, to suppress a Lord Marcher revolt. Unfortunately for Hereford, he later appointed as bishop one of his wife's foreign dependants, Peter de Aquablanca, who brought in a host of foreign clergy. The pious Henry was righteously indignant when he visited Hereford in 1263 and found the cathedral services entirely suspended, and the bishop and his foreigners absent from their posts.

Soon came the rising of the barons under Simon de Montfort, and the defeat of the king at the battle of Lewes in 1264, where Henry and the young Prince Edward fell into de Montfort's hands. Following the capture of Hereford castle by de Montfort and his ally, the last Welsh Prince Llywelyn, the king and Prince Edward were lodged there. De Montfort quickly removed Bishop Peter from his post, but he lost Prince Edward, whose escape to Wigmore castle on a horse which he was pretending to exercise on Widemarsh common is one of the romances of Hereford. From Hereford de Montfort went to his last battle at Evesham, after which the king was released from Hereford castle, not however without fining the citizens for his imprisonment there, which seems somewhat hard on the citizens. (Actually they had to pay an annual sum up to 1279, before they were excused from further payments.)

In 1282 came the death of Llywelyn, which was quickly followed by the subjugation of Wales by Edward I. Up to then the castle of Hereford, which was one of the largest and strongest in England, had served primarily as a fortress against the Welsh. It now lost much of its old value, though Hereford itself remained of importance as a royal outpost from which a watch could be kept on the activities both of the Welsh and the powerful Lords Marchers. Edward visited Hereford in 1287 to witness the translation of the remains of Bishop Thomas Cantilupe (died 1283 and canonized 1320) to a new tomb in the cathedral. Shortly afterwards, about

1298, urged on by Edward, the citizens began the construction of the town wall, some of whose massive ruins are still to be seen.

The troubles of Edward II's reign closely concerned Hereford, because its bishop, Orleton, and the Lords Marchers were among the chief opponents of the king. The latter came to Hereford in 1322 and seized Orleton's property. Queen Isabella made Hereford her headquarters in her campaign against the king in 1326 (spending a month at the Bishop's Palace), and here was brought and hanged in High Town, from a gallows said to be 50 feet high, the king's favourite, Hugh Despenser. After the king's overthrow, a great council of the realm met at Hereford and declared the young prince Edward Protector. This was Edward III, who first came as king to Hereford to witness the consecration of the church of the Black Friars, bringing with him the Black Prince, three archbishops, and a great company of nobles.

Edward's successor, Richard II, gave Hereford a new charter, which conferred on its bailiffs the title of mayor. During Richard's reign we get news of the reduced condition of Hereford's castle, for it is recorded that John of Gaunt, having been appointed Governor of the castle, begged store of timber from the gentlemen of the neighbourhood for its repair, intending to make it his chief residence<sup>1</sup>. The king, however, took the governance from him, and "time-honour'd Lancaster" was frustrated in his wish. The followers of Wycliffe, of whom he had been a patron (Lollards, as they were known) fared no better at Hereford, and a leader of the movement, Walter Brut, was brought to trial before the bishop in 1393 and forced to recant.

Hereford had other matters to think of at the end of Richard's reign. It saw John of Gaunt's son, Henry of Lancaster (created Duke of Hereford by Richard) and his army on his triumphal march from Bristol to Chester in 1399—on which occasion Henry spent a night at the bishop's palace. After Richard's murder it was pillaged by a marauding army of Welshmen, anxious to avenge the king's death.

Richard's murder was the prelude to the more serious revolt of Owen Glyndwr, in which Hereford was also involved, for Lancaster (now Henry IV) and the young Prince Henry came to Hereford after the battle of Shrewsbury in 1403, and made it their base of operations against the Welsh until the revolt had been put down five years later, the prince (later Henry V) being given command of the castle.

The unhappy Henry VI was the next royal visitor to Hereford, brought there by the forceful Queen Margaret in a royal progress in 1452, to curb disaffection. Twice in the next five years, following the outbreak of the Wars of the Roses, she brought the Court to Hereford. A year or two later, in 1460, her opponent, the Duke of York, passed through Hereford shortly before meeting his death at the battle of Wakefield, and in the next year to Hereford came the Duke's son Edward, fresh from the battle of Mortimer's Cross, which gave him the crown as Edward IV. Edward brought with him Owen Tudor and other Lancastrian prisoners, whom he caused to be executed at Hereford.

<sup>1</sup>Dugdale, quoted by Duncumb, p. 243.

This brings us to the year 1461, and very nearly to the end of Hereford's share in the medieval pageantry of English history. Not quite, however, for Edward sent his queen and the boy prince Edward (afterwards Edward V, who was murdered in the Tower) to hold an Assize at Hereford in 1473, on account of the disturbed state of the border; and in 1486 the city received a visit from Henry VII.

From that time until the great Civil War, Hereford relapsed into obscurity as far as English history is concerned, and before resuming our story we may well break off for a moment to look at developments within the city itself since it became an appanage of the Crown.

This royal connection the citizens never forgot. It was at once their boast and a rallying cry in time of trouble. The bailiff (who later, as we have seen, was called the mayor), they said in their book of customs, "represents the king's person, and to him, next under the king, we must be obedient in all things touching the king and the state of the city." "The king's citizens of Hereford who have the custody of his city", they said again, were bound to deliver their laws and customs only to towns under the same tenure as themselves, *i.e.* "towns which hold of our lord the king of England and his heirs without any mesne lord."<sup>1</sup> In times of emergency, at the sound of the Common Bell from St. Peter's Church (the bell of the fourteenth century is still there), all citizens, armed with their weapons of war, had to place themselves under the direction of the mayor, as having the king's authority.

The present happy relations between cathedral and city did not always obtain. Far from it! The city was for centuries divided as between tenants of the bishop and canons, and others who were not their tenants—in other words, those living in the Bishop's or Canons' Fee and those in the King's Fee. This led to constant disputes, particularly when the clergy claimed that their tenants were outside the jurisdiction of the city bailiff. The same conditions applied in other cities, but Hereford was one of the very few where the free citizens successfully resisted the clerical claims. Not only were all citizens brought within the city's jurisdiction, but it was established that all questions concerning lands and tenements in the city were to be decided by the free citizens only (tenants outside the King's Fee not being admitted as freemen). If the clergy would not assent or agree, the bailiff was to announce that he must proceed himself to administer full justice, though "by his will or knowledge he would not hurt the liberties of their Mother the Church."<sup>2</sup> The distinction between the different Fees had ceased to be of practical account in the eighteenth century.

Under a charter of Henry I a nine-day fair was granted as a prerogative of the bishops, during which they were allowed to have the keys and government of the city, and all the tolls. The bishops enjoyed their chartered rights until these were removed by an Act of 1838, which provided that, in place of their former privileges, the bishops should receive from the city an annual payment of 12½ bushels of wheat or the equivalent in cash. The fair, which now lasts under three days, has been known since

<sup>1</sup> *Town Life in the Fifteenth Century* by A. Stopford Green, Vol. I, pp. 228-9.

<sup>2</sup> *Ibid.*, Vol. I, p. 320.

about 1870 as the May Fair. Before that it was for centuries called St. Ethelbert's Fair. The amicable ceremony in 1951, when the wheat was solemnly measured out and presented to the bishop, would have seemed strange indeed to many of his predecessors.

Although Hereford was proud of its royal connection and enjoyed the royal favour, and was moreover a cathedral city, it looked to commerce for its prosperity, like any other city. As evidence of its increasing wealth, large parts of its five parish churches were built in the fourteenth and fifteenth centuries, and in the fifteenth century these churches supported at least a dozen chantries, while the cathedral had 21. By the fifteenth century there were 14 trade guilds, which largely controlled the government of the city. The wall on which work was started in 1298 has already been mentioned. The Booth Hall was built towards the end of the fourteenth century, and the Tolsey (which stood opposite where is now the Odeon Theatre) in 1490. The present stone bridge over the Wye was also built at the end of the fifteenth century. Crowning all, was the magnificent Market Hall which was built in High Town in 1576, described by an officer of the Parliament army which entered the city in 1642 as "the stateliest Market Place in the kingdom." The city was granted two Members of Parliament in 1295, and continued to be represented by two Members until 1885, when it lost one (the other being lost in 1918).

Leland in 1535 found the city wall and gates "right well maintained". They had need to be, for the Wars of the Roses left the border in a lawless condition and Welsh marauders became a constant menace to Hereford. A law was already in force making it high treason for Welshmen to carry off Englishmen into Wales and hold them to ransom. To protect its aldermen from such unseemly (and expensive) exit, Hereford made an ordinance that no alderman was to ride above seven miles out of the city without a man attending him, under the penalty of ten shillings.

Matters improved after the Act of Union was passed in 1536 and Welshmen were given the full privileges of English citizens, but, perhaps on account of the influx of Welshmen which followed the Act, ordinances were introduced which ensured that there should be candlelight about the city at night, while strangers were required to leave their arms at their inns.

The city had its first set-back during the reign of Henry VIII, when, for some unexplained reason, its fulling mills were destroyed—it is said on the king's orders—and it thus lost its cloth trade. This caused much unemployment and distress, and the trade was never recovered. Viscount Scudamore, who did so much in the next century for the cattle raising and fruit growing industries of Herefordshire, left money for starting a woollen factory, but to no purpose, and in the end the large sum which had accumulated was, with Parliamentary sanction, used to found the Scudamore schools, which were opened in 1852.

Queen Elizabeth I gave the city a new charter, by which the mayor was entitled to wear a scarlet gown and tippet. This charter was confirmed by James I. Elizabeth also gave a silver chalice to All Saints' church. These were almost the last marks of favour which Hereford received from its



royal patrons. But its loyalty to the Crown was unabated, as was to be proved in the Civil War.

With the Civil War we again find ourselves in English history for a time. As a royalist stronghold, and situated as it was near the borders of Wales, whence the King derived a great part of his support, Hereford became a key town, and was quickly involved in the war. It was, however, totally unprepared when the Earl of Stamford's army appeared before its gates in September, 1642, and the Parliamentarians occupied the city without opposition, the Earl establishing himself in the Bishop's Palace. Stamford was soon called away to another field of action, and the city was again held for the king, only to surrender in April, 1643, to Sir William Waller and his army, who took a weak defence by surprise and entered the gates almost as easily as Stamford's army had done. Waller captured a number of distinguished Royalists, including Viscount Scudamore. He too left the city after a short stay and the Royalists regained possession.

This time the city was put into a proper state of defence and a stronger garrison was installed. When a large Scottish army under the Earl de Leven demanded the city's surrender in July, 1645, they found the Governor, Colonel Barnabas Scudamore (brother of the Viscount) well prepared for resistance. Over a thousand of the citizens took up arms to help him, and even women and children took a part. The heroic defence prevailed, and after a siege of nearly five weeks, on hearing of the approach of King Charles with a relieving force, the Scots were forced to retire. The city lost two of its churches during the siege—St. Martin's and St. Owen's—and the defenders were compelled to break down one of the arches of the Wye bridge, leaving a permanent memorial of the siege in the repaired arch which may still be seen.

There is a modern window in the cathedral which graphically depicts the triumphal entry of King Charles into Hereford. He had already spent several days in the city during June, after the battle of Naseby, and in this September, 1645, following his relief of the city, made Hereford his headquarters while trying to reorganize his army, leaving the city later in the month never to return. His gift to Hereford for its successful defence was the addition to its arms of a bordure of St. Andrew's crosses and its motto *Invictae fidelitatis praemium*.

Three months later, by stratagem and with the help of traitors within the gates, Colonel Birch entered Hereford almost without opposition, and Hereford was occupied thenceforth by a Parliamentary force until the Restoration of Charles II.

Space is lacking to tell of the many incidents and experiences in Hereford during the Civil War which are recounted in the city archives and elsewhere. A letter from one of Stamford's officers gives us a memorable little picture of the inhabitants, who later so bravely resisted the Scots. "The inhabitants", he wrote, "are totally ignorant in the ways of God, and much addicted to drunkenness and other vices, but principally to swearing, so that children who have scarce learned to walk do universally swear stoutly. Many here speak Welsh." This toughness (if we may call it that) in the children seems to be confirmed by the report that a Scottish

general who was killed during the siege died at the hands of a baker's boy, who shot him from the wall. It is also somewhat remarkable that, among the rules drawn up for the Grammar School in 1665, the last rule especially urged the master and usher to keep the scholars "from that most wicked vice of swearing, *the epidemical synne of this cytty*."

Another picture of the inhabitants under siege is given by one of themselves in the Account Book of Joyce Jefferies, which was published in 1857 by the Society of Antiquaries, and reproduced in part in the *Woolhope Transactions* of 1922. If the matter-of-fact way in which this old lady kept her accounts during those troublous times is typical, we cannot wonder that the Scots found Hereford a hard nut to crack. A few of the entries invite quotations because, apart from their own interest, they seem so obviously to bespeak a mind which nothing could surprise and nothing dismay.

These, in 1642, before the entry of Stamford's army:

- 9 September—Paid a lowne laid upon ye City of heryford towards ye biinge of Armor and weapons and artilery to streinthen the city against the parliament ... .. 20s.  
25 September—Gave a carpinder to pass over my standard powles in ye cole house, when the souldiers would have them to barricade Wide-marsh Gate ... .. 4d.

Another 1642 entry, when Parliament soldiers were quartered on her:

- 30 November—I sent Bes Newton by Thos. Harris to bye provision for 4 souldiers that dietted at my howse ... .. 10s.

These in 1643, when Waller occupied the city:

- Paid John Baddam for mending ye tiles over my new closet which Sir William Waller's sowlidiers brake down to shote at Widmarsh Gate ... .. 4d.  
Paid Maud Pritchett for a cheese for sowlidiers which I kept ... 18d.

After Waller's departure steps were taken to improve the city's defences; and Governor Scudamore pulled down houses outside the gates, including three belonging to Mistress Joyce, in preparation for the arrival of the Scottish army. So we get the following entries:

- Paid for work donn in making bullwarks to defend the City of heriford fro invasion ... .. 20d.  
Rece of Maud Pritchett half a yeere's rent for her howse in Widmarsh streete, due at Holirood day, 1645, being the last that ever she paid, for she removed, and my howses were pulled downe ... 30s.

There are references in the book to Royalist soldiers wearing blue feathers in their hats, and to volunteers from Hereford joining the King's army.

Hereford did not take kindly to its Parliamentary garrison, under Colonel Birch and his successors. The Council of State wrote in 1649 to Sir William Constable as follows:

"We have heard your letter to Mr. Frost, representing that few of the people of Hereford are well affected to the present government, and that the place is of concernment, and might prove very dangerous if it



should declare against the commonwealth, and give a beginning to new troubles. We desire you to have a watchful eye upon them, to keep that town and castle from being surprised or kept by any malignant party."<sup>1</sup>

The Council had little reason to fear the castle as a hostile stronghold. We have already seen that it was in need of repair in John of Gaunt's time. It was in a ruinous condition and had lost its military value in the sixteenth century. The royal interest in it ceased in 1629 when Charles I granted a lease of the castle for an annual rent of 20s. Colonel Birch acquired it in 1646 and repaired what remained sufficiently to house a garrison. Some Royalists were imprisoned in the castle as late as 1659. Its final demolition began the next year, and the only relic we have of this formidable fortress of kings is the house, Castle Cliffe, which once formed part of the governor's residence. Castle Green, which occupies the site of the Castle ward—the scene of some famous tournaments—was converted into a pleasure garden in 1746, after having been sold by Colonel Birch for £600 to the six Members of Parliament for Herefordshire for the benefit of the inhabitants of the county. (It was leased for 200 years by the magistrates to the town council in 1873 at a rent of £1 a year.)

After the Civil War Hereford declined to the condition of an unimportant provincial town, and its history conforms to that more sober pattern for 200 years. One event, however, of more than domestic significance was the hanging of John Kemble, a Roman Catholic priest, on Widemarsh Common in 1679—one of the innocent victims of Titus Oates and the Whigs. It is to be noted also that Hereford for a time achieved a certain notoriety for its Jacobite sympathies, but its enthusiasm did not go far beyond the drinking of toasts and the display of blue and white ribands and other emblems. Only once since the Civil War has it tasted actual warfare—on that early morning of 27th July, 1942, when German bombs fell on its munition factory, killing several people.

Three more charters which Hereford received might be mentioned here. In 1682, in common with many other towns, it was compelled to surrender its previous charter (given by James I) to Charles II, who in a new charter reserved to the Crown the right to confirm the appointments of chief steward, town clerk and aldermen. This encroachment on the city's liberties was removed by a charter which it received from James II. William III gave Hereford its last charter in 1698. This remains the city's *Magna Carta* to-day, except so far as amended by the Municipal Reform Act of 1835 and other legislation.

Glovesmaking became the city's main manufacturing industry in the seventeenth century, and remained so until the early nineteenth century, when the trade was lost to Worcester. As a writer of 1717 observed<sup>2</sup>, such a trade could not support a large population. Nor could sending corn and cider to Bristol by river barge, which a writer of 1764<sup>3</sup> said were the only other industries of consequence, help much in the employment problem.

<sup>1</sup>Calendar of State Papers (Domestic): Proceedings of Council of State, 1st May, 1649.

<sup>2</sup>In a book entitled *The Counties of England*.

<sup>3</sup>*Gentleman's Magazine*, 1764, p. 180.

Flax dressing was another minor industry which may be added to the list up to the early nineteenth century. It is small wonder that the city was described as thinly populated and that the writer of the Torrington Diaries in 1784 wrote that it was "melancholy and monastic, and would look better if enliven'd by soldiers".

Hereford became the home of poverty. Duncumb in 1804 referred to the "multiplicity of the poor". The authorities started a House of Industry for their relief in 1787—a forerunner of the later workhouses—but it met with the usual fate of such institutions. Bishop John Butler, himself a generous giver, made a stirring appeal in 1799 to the nobility, gentry and his fellow clergy to help the distressed people—a rare instance of episcopal solicitude for Hereford city.

In the meantime Commissioners appointed under the Paving and Lighting Act of 1774 set about putting the streets in order. The Commissioners were empowered not only to pitch, pave, light and repair the streets, but also to pull down projections and remove nuisances. Before this Hereford had changed little in outward appearance since the seventeenth century, or even earlier. Its six gates, with the narrow entrance to Broad Street, entered by the ancient North Gate, disappeared during the period 1782-1799; and a large part of its wall followed suit. It was said that a load of hay could not pass along parts of Widemarsh Street or High Street on account of the projecting upper storeys of the houses. They too disappeared. Butchers' Row, so called in the days of Edward III, endured until 1837, some strange fortune preserving what we now call the Old House. Spared too were many of the old interiors, for, in their anxiety to give the city a modern appearance, the busy destroyers often contented themselves with removing the old gabled half-timbered fronts and replacing them with brick, leaving the interiors practically untouched.

Justification could probably be claimed for a great deal of the ruthless destruction, but we cannot help lamenting the spoliation of the unique Elizabethan Market Hall by the removal in 1793 of its top floor and the reconstruction of what was left in the worst style of the period. Poor ancient city! It was only shortly before this, in 1786, that the Norman west front and nave of its cathedral collapsed, after repeated warnings to the Chapter. Yet we must certainly remember that the demolitions effected in the city permitted the construction of some new and useful buildings, such as the county gaol<sup>1</sup> on the site of St. Guthlac's Priory, opened in 1796; a Butter and Poultry Market in High Town in 1810; and the Shire Hall in 1817.

There were two achievements to the city's credit in 1826. The streets were first lit by gas in that year, in substitution for the 150 oil lamps installed by the Paving Commissioners; and the Wye Bridge was widened.

In 1829 the tramroad from Abergavenny reached Hereford (near Jordan's Boat House). The city had previously depended on river barges—continually impeded by floods or droughts—for its coal, which was brought from the Forest of Dean, and for the transport of its steadily increasing exports of wheat, cider, wool, hops, oak bark, and timber. The tramroad

<sup>1</sup>Pulled down in 1929; the omnibus station now occupies the site.

now brought coal from South Wales, and cheapened the price from about 30s. a ton to 22s. It was not, however, a financial success, and was eventually closed in 1851, when the Newport, Abergavenny, and Hereford Railway (which had bought it in 1845) was progressing with the new railroad to Hereford. Before the tramroad ceased, the Gloucester canal had been extended from Ledbury to Hereford (Monkmoor Street) in 1838, and had secured a large part of the goods traffic of Hereford. The canal was vested in the Great Western Railway Company in 1870 but ceased to function about 1880.

Hereford received its first police force in 1836; and in the same year its centuries-old Common Council disappeared. Under the Municipal Reform Act of 1835 the Council was reconstituted, and membership, hitherto the preserve of a privileged minority, was thrown open to all, as determined by the votes of the ratepayers. That was a great step forward in municipal progress. Not otherwise could Hereford have secured a Council ready and competent to carry out the important reforms which lay ahead.

The first of these reforms came with the Hereford Improvement Act of 1854, which may be said to mark the beginning of modern Hereford. It gave Hereford its first sewerage scheme and its first waterworks, in addition to other improvements, one of the most important of which was the opening of the municipal cattle market in 1856.

The Act came at a timely moment, for the railway had reached Hereford in 1853<sup>1</sup>. Only increased accessibility had been wanting to make it a town of commerce, and one of the most important marketing centres in the West Country, as it is to-day. Glovemaking had already ceased to be of any account, and it was too late to save it. A flannel factory started about 1830 had not been a success, and an iron and brass foundry started a little later had lasted only 10 years. After the railway arrived steam flour mills and saw mills were set up and prospered, and the markets grew apace. The price of coal, Hereford's principal import, fell to 10s. or 12s. a ton. The Corn Exchange in Broad Street was opened in 1858 and the old Butter Market of 1810 was reconstructed in 1863 (to be replaced, after it had been burnt down in 1922, by the present Hall in 1925).

Among other industries which have since added to Hereford's prosperity are cider-making, tile manufacture, constructional engineering, and fruit canning and preserving. We might add munition making to the list, but that, vastly important as it has been to Hereford during the two Great Wars, we may hope is not to be a recurrent item. On the markets side, it may be noted that the Herd Book Society, whose sales and shows attract buyers from all over the world, was started in 1878; the cattle market (through which it is claimed more livestock pass each year than through any other market in England and Wales) was considerably enlarged in 1888; the fruit market was opened in 1895; and the important horse and poultry sales were started in 1914.

The population figures tell their own story of the growth of Hereford since the mid eighteenth century, when the population was estimated at

<sup>1</sup>Hereford was connected by rail with Shrewsbury and Newport in 1853, with Gloucester in 1855, and with Worcester and Birmingham in 1861.

about 5,600. In 1796 it was estimated at 6,000, and it was under 7,000 at the Census of 1801. During the next 50 years the number rose slowly to 12,000 in 1851; but by 1861 it had increased to 15,600, and by 1871 to 18,300, more than 2½ times the population of 1801. From 1871 to 1931 the decennial increases were on a smaller scale, the 1931 population of rather over 24,000 exceeding that of 1871 by less than one-third. By contrast the population in 1951 had risen to 32,500, which is over one-third more than that of 1931, and nearly five times the Census number of 1801. A penny rate, which produced £415 in 1891, and £662 in 1931, in 1951 produced nearly £1,057.

This is not an ecclesiastical history, and I have not included in my survey the three ancient priories of Hereford—St. Guthlac's, the Black Friars, and Grey Friars—all dissolved at the Reformation—or the parish churches. Neither have I had space to write on such subjects as education, societies of various kinds, music, and the theatre. Such matters must be left to the social historian. They received some notice in my *Historic Hereford*<sup>1</sup>.

Before concluding this brief history of the city of Hereford, some mention must be made of some famous people who have impressed their memories on the city. Among natives, Miles Smith, who wrote the Preface to the Authorized Version of the Bible; Thomas Traherne, the poet; Nell Gwynne; and David Garrick. Among residents for a time, Sarah Siddons (Sally Kemble as she was affectionately known in Hereford); David Cox, the painter; and Sir Edward Elgar. Among those who have received the Freedom of the city, Charles James Fox, Lord Nelson, and John Masefield.

Two other names which belong to the history of Hereford are those of the Rev. John Venn, vicar of St. Peter's from 1832 to 1870, who gave his life to the relief and education of the multitudinous poor, and founded the Society for Aiding the Industrious; and Alderman Charles Anthony, founder of the Hereford Times in 1832 and its first editor, who led the way in municipal enterprise and devoted himself to the improvement of Hereford. He was six times mayor, and may be called the father of modern Hereford.

The city owed its Improvement Act of 1854 to Charles Anthony. He it was who, in the course of his reforms, secured the final demolition in 1861 of the Elizabethan Market Hall. Since, however, the hall had already been robbed of its former glory and was a serious obstacle to modern traffic, he perhaps had some sort of excuse. Fortunately his further idea of putting up a massive town clock in place of the hall fell through<sup>2</sup>.

An idea of others in the 1850's was to pull down the north sides of High Street and Eign Street, including All Saints' Church itself, and make a

<sup>1</sup>*Historic Hereford* (published by E. J. Thurston, 3rd edition, 1951).

<sup>2</sup>The measure of Hereford's deliverance may be gauged by anyone who takes the trouble to look at the picture of the proposed clock in the *Hereford Times* of 16 May, 1857. It was an age of deplorable taste. How else can we explain the enthusiasm of Joseph Jones for the new metal screen in the Cathedral, which he described in his Guide of 1863 as "the finest piece of architectural metal-work ever executed", and "the main feature of interest in the church"?

thoroughfare from High Town to Bewell Street which, it was claimed, might vie with Broadway, New York. But Hereford's Broadway did not materialize, and the enthusiasts turned to the less harmful pursuit of changing the names of some of the existing streets—Commercial Street, for instance, being thought a more impressive name for the former Bye Street. . . . And the old buildings continued to fall, to give way to that sorry mass of brickwork we see in the shopping quarter of Hereford to-day.

What the Woolhope Club thought of the work of destruction going on around it we do not know. Perhaps it left such matters in those days to the Philosophical and Antiquarian Institute, while it made more innocent use of the hammer which appears rather ominously in its coat of arms.

The Scottish army in their five weeks' siege in 1645 did less damage to Hereford than our zealous reformers. "Our buildings", boasted a contemporary, "have the same regular appearance as those in other parts of the kingdom." How unfortunately true! We have indeed to use our imagination to recall the not inglorious past of this ancient city. The pages of history may help, and in that hope the writer concludes his task.

## *The History and Architecture of Hereford Cathedral*

By THE VENERABLE A. J. WINNINGTON INGRAM, M.A.

### THE AGE OF CONSTRUCTION

“**U**BI episcopus, ibi ecclesia” was not intended to refer to temples made with hands. Nevertheless it is true to say that whenever the bishopric which we now call Hereford was established on the Wye in the western part of Mercia, there must have been a church in which the bishop could set up his cathedra, or episcopal seat. In the early days this was spoken of as his stool, and it is an indication of the growing importance of the bishop's office in Church and State, and perhaps of the imperious character of some of the Norman bishops, that the stool so soon became a chair of state, and ended up as a “throne”. The first cathedrals must have been simple buildings of timber, wattle, and daub, with thatched coverings. Legends recount how Offa, King of Mercia, erected a fair and goodly minster to enshrine the body of Ethelbert, whom he had murdered. But the earliest stone church of which there is any documentary evidence was built by Æthelstan early in the eleventh century. The Saxon Chronicle records how this cathedral was burned and pillaged by the Welsh in 1055, and how the old bishop, now blind, died at Bosbury in the following year, and was buried “in the church at Hereford which he himself had built from the foundation”.

No trace of Æthelstan's church remains today. It is possible that some few stones, or mouldings, from it may have been re-used in the building which succeeded it, but nothing can be identified with certainty. These were unsettled times at Hereford, as in the country at large. Æthelstan's successor was slain by the Welsh within the year, and no bishop was appointed until 1061. The next two bishops were men of Lorraine: Walter, appointed in the reign of Edward the Confessor, having been chaplain to his queen, and Robert, the first bishop after the Norman Conquest, who succeeded him in 1079. These foreign appointments were unpopular in England, but they did bring in their train a contact with the civilization of the continent, and especially with new ideas in architecture.

It is with Robert of Lorraine (or Losinga as he is sometimes called) that we find the first link with the Cathedral as it stands today. William of Malmesbury, who visited Hereford in 1135, records that Robert built there a church modelled on the basilica at Aix-la-chapelle. This has puzzled all historians of the Cathedral, and the most likely solution is that it refers to the late eleventh century building called the chapel of St. Katherine and St. Mary Magdalene, of which only the north wall remains today. This stands in the garden of the bishop's palace, and forms part of the south wall of the cloister. From this wall, and from the careful sketches and plans made by the Society of Antiquaries before the structure was pulled



down in 1737-8, we know that it comprised, like the church at Aix, a chapel on each of the two floors, and a chancel at the east end of each floor. The roof was supported on four columns, and in the centre was a cupola which admitted the light, as well as two windows on each side. The entrance at the west end was a deeply recessed doorway of Romanesque design.

Bishop Robert seems to have erected this building as a private chapel, and perhaps to provide a place for services while the cathedral was being built. For it is now generally accepted that we owe to him the plan of our present building, and the beginning of the work. The plan was for a cruciform church consisting of presbytery with aisles, central crossing surmounted by a tower, north and south transepts, and a nave with aisles. The presbytery and choir aisles terminated in three independent apses, and it was possible to trace the foundations of two of these when they were uncovered in 1841. So far the plan was fairly conventional, and much like any other large cruciform building of the Norman period, but recent investigation has suggested an unusual feature in the provision of a small tower over the eastern bay of each choir aisle. The indications of these are not very obvious to the layman, but on the exterior view attention may be drawn to the solid wall buttresses supporting the east face of the presbytery on either side. These are said to embody part of the east walls of the original towers. Also there are strong abutments, especially on the south side of this bay of the presbytery aisle, which seem to show that it was intended to support a heavy weight.

We may picture then two small eastern towers, as well as a low central tower. The plan took some fifty or sixty years to be completed, and was considerably modified as time went on. It is very doubtful whether the north transept ever was finished, though it was certainly begun, as signs of a similar design to that of the south transept are visible in the first bay of the triforium. Apparently the east wall of the south transept was the first part to be built (c.1080) with the treasury behind it. This would be necessary to provide safe custody for such treasures and relics as had escaped the Welsh pillage, or been acquired later.

Then followed the presbytery, with its massive piers, not circular, but solid blocks of masonry with attached shafts, which are of an early type, earlier than the circular columns of the nave. Gilbert Scott made a conjectural reconstruction of the Norman presbytery, showing these piers supporting a groined vault. A magnificent piece of work it would have been, but it may be doubted whether so large a space could have been successfully vaulted at this early date. Perhaps the building was roofed over at triforium level, or more likely with timber and slates on a low clerestory. Bishop Robert did not live to see this part of his plan completed. He died in 1096, and it does not seem likely that the presbytery was completed until the time of Bishop Reynelm (1101-1115). He is called in a *Kalendar of Obits* "fundator ecclesie", and there seems little justification for this, unless some part of the work can be attributed to his time.

There still remained the nave to be completed, and this dragged on for 30 years, including the troubled times which followed the death of Henry I. When King Stephen attended the cathedral in state wearing his

crown on Whitsunday, 1138, it would have been in the choir, for the nave was not completed. Milo, created Earl of Hereford by Matilda, and one of her most faithful adherents, the next year quartered his troops in the Cathedral, and trenches were dug in the burial ground outside. When peace was restored in 1140, Bishop Robert de Bethune cleansed the church and set about completing the nave, which was dedicated with much solemnity in 1148.

#### THE AGE OF ENLARGEMENT

The Norman church continued unchanged for about fifty years, during which time the family of Foliot were all powerful at Hereford. Gilbert Foliot was bishop from 1148-1163, when he was translated to London, and continued to exercise his influence over his successors at Hereford, one of whom was a kinsman, Robert Foliot, and another, William de Vere, had been his canon at St. Paul's. On the tomb of this William the antiquary Leland saw an inscription, now perished, which said "*Strenue rexit, et multa edificia egregia contruxit, et feliciter obiit.*" It was probably he who built the fine timber framed hall, part of which still stands concealed within the stone facing of the Bishop's Palace. This magnificent hall was built like a church with nave and aisles, the roof supported on an arcade of timber decorated with billet moulding. At the south end would lie the bishop's camera and private apartments, and at the north the screen and buttery. There Bishop William dispensed princely hospitality, surrounded by his distinguished chapter, which included one of the de Braose family as dean, and Walter Map and Giraldus Cambrensis among the canons.

During his time there began a great reconstruction of the east end of the Cathedral. The apses and towers were removed, the central arch behind the high altar blocked up, and the ambulatory and the ante-chapel built. Here is to be observed the interesting transitional work with the pointed arch and Norman decoration, which is such a feature of this part of the Cathedral. Probably the scheme was to provide for a square east end, and small transepts to the north and south. Giraldus at this time was busy writing a life of St. Ethelbert, and the Chapter were most anxious to popularize his cult, and to obtain suitable relics, of which apparently they had none up till now. These would be displayed on the altars in what is now the ante-chapel, and lighted by the charming transitional openings in the north and south walls, which were only rediscovered in the restoration of 1843.

It seems that before this scheme was completed it was decided to extend the building eastwards by the provision of a Lady Chapel with a crypt beneath it. Accordingly the east wall was sealed off by a wooden screen, the ends of the moulded beam being still visible in the columns at the east of the antechamber, and work began on the foundation of the new chapel. This took many years to complete, for the reign of King John was a time of strife in Church and State, but its progress may be traced in the corbel heads and bosses of the masonry, depicting as they do master masons, kings, and bishops of the period. These latter have been identified by Mr. George Marshall as Henry III, and Bishops Hugh de Mapenor and

Hugh Foliot; the last-named perhaps saw the completion of the work before his death in 1234.

This lovely Early-English chapel, with its lancet windows, clustered columns, and its vaulted crypt, had not long been finished, when Bishop Ralph de Maidstone, formerly Dean of Hereford, set about the rebuilding of the choir clerestory. We have seen that there is some doubt whether the Norman choir was vaulted, and even if it were, the groined vault would hardly now be safe, and would have to be replaced by more modern methods of vaulting. An opportunity would also be provided for letting more light into the choir now that the eastern towers were removed. It may be noted (in view of later criticisms about the nave) that they did not hesitate to build on Norman arcade and triforium a clerestory in completely different design. The windows were of two pointed lights with a quatrefoil above, faced on the inside by an arcade of three arches, the centre arch (sub-divided into two) being higher than the two side arches. The whole composition gives a most pleasing effect.

In 1239 Bishop Ralph resigned the see of Hereford, and was succeeded by Peter de Aquablanca, a Savoyard high in favour with King Henry III, who had recently married Eleanor of Provence. The Queen's uncle Boniface, also of Savoy, was made Archbishop of Canterbury, but during the vacancy of the primacy the buildings at Lambeth Palace were lent to the Bishop-elect of Hereford for his consecration feast. Three years later the Bishop of Hereford was ordered by the King to execute certain repairs to the chapel at Lambeth, and the official mentioned in connection with these transactions was Edward, son of Odo le Orfevre, who is known to have been employed from 1241 A.D. onwards in rebuilding the royal Abbey at Westminster. This connection is most interesting, and throws light on the erection of the north transept of Hereford Cathedral, which is usually attributed to the time of Peter de Aquablanca. It helps to explain the close resemblance between the architecture of this transept, especially on the east side and small eastern chapels, with that of Westminster Abbey, which has been so clearly brought out by the late Mr. George Marshall in his book<sup>1</sup>.

But first we must return to ask why this work was necessary. The Bishop and the Dean and Chapter had not the funds at this time deliberately to pull down one transept to substitute another. Either then the north transept had fallen into serious disrepair, or it had never been completed according to the Norman plan. We cannot really tell which was the case. We know that the Norman tower had settled considerably, crushing the piers, flattening the arches and pushing the pillars of the nave westward. This settlement continued even while the north transept was being built, but it is difficult to distinguish cause and effect. Did the absence of a proper transept cause the settlement of the tower, or did the settlement of the tower cause the transept to collapse? A further difficulty is occasioned by the prolonged absence of the Bishop from Hereford, and even from England. The King wrote in 1263, after a visit to Hereford, complaining that he found neither bishop nor dean in the church, and that the canons

<sup>1</sup>Hereford Cathedral: its evolution and growth, 1951.

led their lives in countries far hence. And yet we know that the body of Aquablanca, who died in 1268, lies buried in his lovely tomb in the north transept, which is obviously contemporary with the work around it.

We may judge then, that Bishop Peter, who was a man of energy and forceful personality, began the work on the north transept about 1240-1245. A papal bull obtained in 1246 called on the Chapter to require the reluctant prebendaries to contribute their share towards the "*magnum sumptus pro fabrica ecclesiae*". The east side, with aisle and treasury above, was built first, as there are signs of small changes in design when the north and west sides came to be erected. Perhaps the first stage, which included his own tomb, was inspired by Aquablanca, and the rest of the work dragged on over some years, hindered by the quarrels between the bishop and chapter. On the other hand, if George Marshall is right in attributing the inner north porch (within the Bothe porch) to the early date of 1240-1250, and the carving on it to one of the Westminster masons employed on the north transept, here is another work to be ascribed to the early days of Bishop Peter. Scott considered that this porch was contemporary with the rebuilding of the aisles, and from the historical point of view this is more probable.

We come now to the golden age of the Cathedral, when for the first time money began to be plentiful. After a short episcopate of six years by John de Breton, in 1274 Thomas Cantilupe was appointed Bishop of Hereford. He was the last Englishman to be canonized before the Reformation, and his fame brought thousands of pilgrims with their offerings to his shrine. We may find it rather hard today to see why he, of all the Bishops of Hereford, should have been acclaimed a saint. He was of noble birth, had great possessions, and much learning, both legal and theological, and his contemporaries were no doubt impressed by a man with such advantages living, as he did, a strictly temperate and ascetic life. His continual litigation, which tried both his purse and his temper, may be defended as upholding the rights of his see, whilst his brother bishops were probably sympathetic with his resistance to Archbishop Peckham, who had claimed jurisdiction in regard to some small law suit affecting an official of the vicar of Ross!! He was actually under sentence of excommunication by the Archbishop when he died in Rome, whither he had gone to appeal to the Pope in his quarrel. But his devoted chaplain and successor, Richard Swinfield, had no doubts in the matter, and he must have known Thomas Cantilupe better than most men. With all his power he contended for the canonization of his hero, and he was supported by a wave of enthusiasm throughout the country.

Cantilupe's bones were brought back to Hereford and placed in the Lady Chapel, while the Chapter set about preparing a fine tomb, which still remains. Probably the base was made first, surrounded by figures of knights depicting the bishop's ancestry, and on the top of the table tomb was placed a brass of the bishop in his vestments. This may have stood first in the Lady Chapel, but within a few years it was re-erected in the north transept aisle, and a stone canopy built over it, which would carry a reliquary in which his bones could be exposed to public view. Here the pilgrims came in their thousands, and great miracles of healing were



claimed. Sufferers were "measured to St. Thomas", which means that they presented tapers of wax of the same height as themselves, and the value of wax droppings became so great as to cause a dispute between the Chapter and the treasurer as to whose perquisite they were.

In 1307 the Papal Commissioners sat in the chapel of St. Katherine by the Bishop's Palace and for four weeks examined witnesses who testified to the miracles of healing. Their report went back to Rome, but still no decision was made, and Bishop Swinfield died before the canonization was proclaimed in 1320. But long before this, the money which had flowed in at the shrine was being spent on the fabric of the Cathedral. First was built (or re-built) the north-east transept, which was destined to contain Bishop Swinfield's own tomb, then the outer wall and windows of the north choir aisle, and north nave aisle. Probably also the inner north porch is of this date, though it may be earlier. The work continued up the south nave aisle and south choir aisle as far as the south-east transept.

This complete re-building of the aisles accounts for the lack of early tombs or monuments, and the curious series of memorials to the Norman bishops from Robert de Losinga onwards, which were all executed in the first years of the fourteenth century, and ornamented with ball flowers.

About 1295 work was begun on the central tower. The earlier tower had already caused some settlement in the building, but when the walls were taken down to roof level the existing foundations were considered sufficient. They were carefully levelled up, and the new tower built as we see it today, thickly encrusted with the ball flower ornament. But in 1319 it showed signs of movement, and a collapse was feared. An appeal was made to the Pope, and all England contributed to avert the disaster. A papal bull of 1320 appropriated the tithes of Swinfield to the fabric fund, and the whole scare probably helped to procure the long awaited canonization of Bishop Cantilupe. The emergency steps taken to save the tower kept it safe until all the main piers were rebuilt in 1842.

So ambitious were the builders of the early fourteenth century that they were not content with the central tower, but they proceeded to build another tower over the most western bay of the nave. This rested on the two most westerly piers, and on the Norman west front, which was never designed to carry such a superstructure. They also planned to build a new Chapter House, as some reference is made to it in correspondence between the Dean and Chapter and the executors of Bishop Swinfield, but this was not completed for many years. For as soon as St. Thomas was officially proclaimed a saint the interest in him began to fall off. Such is the contradictory fickleness of English public opinion. Pilgrims still came, and a magnificent shrine was erected in the Lady Chapel, to which the bones were translated, leaving the original monument in the north transept. But money was not so plentiful, and in the mid-fourteenth century the country was visited by the terrible scourge known as the Black Death. By degrees, notwithstanding, the work was proceeded with, the Chapter House completed, and the south-east transept rebuilt. This brings us to the episcopate of Lewis Charlton (1361-1369), whose tomb lies in this transept.

## THE AGE OF EMBELLISHMENT

The general ground plan of the Cathedral was by now more or less what we have today, and the work which followed was occasional rather than continuous, and consisted of additions and embellishments rather than rebuilding. Bishop Trefnant succeeded in 1389, and to him we owe the lovely perpendicular window which was inserted in the south wall of the south transept. At any rate it was erected in his time, and his tomb lies beneath it. His successor, Bishop Spofford, also placed a window in this transept on the west side, and erected the vaulted roof, which is of great beauty, but cuts across the Norman clerestory windows in a curious manner. These improvements gave a much better light to the interior, but they seriously weakened the fabric. Wyatt added two flying buttresses on the east and west faces to give stability (as he hoped), but even today there are occasional signs of movement which cause anxiety.

In this connection it may be noted that another large window, with perpendicular tracery, was inserted in the west wall of the west front of the Cathedral, in 1435. This was the gift of Precentor William Lochard, who filled the window with fine stained glass. It is to be feared, however, that this insertion created a weakness and helped to cause the ultimate collapse of the west tower.

A good deal of work was done in the nave during this period, the clerestory windows were altered and given mullions and tracery, and a stone vault was erected on flat columns rising from the capitals of the nave arcade. The central tower received a wooden spire covered with lead, and the space over the crossing was vaulted, but we have no evidence of the exact date of this work.

It was outside the Cathedral that most of the building took place in the fifteenth century. The cloisters lying between the Cathedral and the Bishop's Palace were rebuilt during this century, and apart from providing a passage way to the Chapter House and a Singing School for the choristers, were used to house the valuable library which had been acquired through the centuries, Bishop Trefnant being one of those who bequeathed books to the Cathedral. The College of Vicars Choral, with its cloister leading to the south-east transept, was erected towards the close of the century.

Only three more buildings remain to be noticed in this age of embellishment. These are three chantries. Bishop Stanbury, who died in 1474, left money to his executors with the request that he should be buried near the high altar of the Cathedral. His alabaster tomb was accordingly placed in the north-east bay of the presbytery aisle, and his executors also built a small chantry chapel close by, between the north-east transept and the circular tower containing the stairway to the treasury, built by Bishop Swinfield when he reconstructed the aisles. This little chapel contains some charming fan-vaulting. The second addition is the chantry chapel of two storeys erected by Bishop Audley in 1498 on the south side of the Lady Chapel. It is a remarkable piece of work and retains some of its original colouring. The third is the outer north porch of the Cathedral, which was begun by Bishop Mayhew, and completed by Bishop Bothe about 1519. It was provided with two staircases, and the chamber above



was fitted up as a chapel, all those who attended it on certain fixed feasts being promised an Indulgence of forty days.

#### THE AGE OF DECAY

Within fifteen years of Bishop Bothe's death all chantries were abolished, and their revenues taken by the Crown. We may believe that the shrine of St. Thomas was destroyed, and most of the rich treasures of the Cathedral which had not vanished previously were confiscated by the Commissioners of Edward VI.

Hereford did not take very kindly to these changes. The Papal absolution of the kingdom pronounced by Cardinal Pole was carefully copied into the Chapter Acts Book, and Bishop Scory, who was appointed in 1559, complains that the Chapter were all "dissemblers and rank papists"! Some allowance must be made for his language, as he found Hereford an uncomfortable see, and longed for preferment elsewhere. But as the reign of Elizabeth went on things became better, and the Statutes of 1583 were accepted and faithfully carried out by such canons as Edward Cooper and Thomas Thornton.

The chief structural change of this period in the Cathedral was the removal of the library to the Lady Chapel. A timber and plaster partition was erected between the ambulatory and ante-chapel, and the library arranged in new presses, which were copied from those which Bodley was then putting up in his rehousing of Duke Humphrey's library at Oxford. In this manner the valuable books and manuscripts, which had been increased by the bequest of Bishop Bothe, were for the most part safely preserved, chained to the presses in the Lady Chapel for 250 years.

Miles Smith, one of the canons, afterwards Bishop of Gloucester, was concerned in the work of preparing the authorised version of 1603, and wrote the preface. His Hebrew version of the Old Testament is still in the library. The Laudian Statutes of the Cathedral issued in 1636 show that the general spirit of capitular life continued unchanged, but clouds were beginning to gather for the coming storm. The Puritan party in Herefordshire sent to their patron, Sir Robert Harley, a long survey on the merits of the clergy of the county, in which they said of the Cathedral clergy: "Their labours being ridiculous, twice a day they chant the choir service with all instruments of music, when they will make it pompous with new devised anthems. . . . Their service (is) a fountain of superstition throughout the whole county, metamorphosing itself into strange gestulations, crouching, ducking, shifting from place to place, one blowing, another piping and fiddling, others bellowing, some praying, the congregation in confusion, few understanding what is said or sung. . . ."

Such diverse views lay behind the civil strife of the seventeenth century, and before long the war reached Hereford, and affected the Cathedral. The first victim was the Chapter House, which lost its leaden roof to aid the armies of both sides, and after the capture of the city damage was done by the soldiers to the windows and the monuments, though not as much as in some other places. Dean Croft preached in the Cathedral against the sin of sacrilege, and Colonel Birch had to restrain his soldiers, who pointed

their muskets at the preacher. On a medallion on the present west front Dean Croft is represented as standing in the pulpit which is now placed beneath one of the arcades on the north side of the nave. This is pure conjecture, as the pulpit is made up of timber of the fifteenth or sixteenth century, roughly put together at almost any date, perhaps much later. As the present principal pulpit in the nave is mainly of early seventeenth century date, it may quite as well have been the scene of Dean Croft's courageous protest.

During the Commonwealth Bishop, Dean and Chapter, and all Cathedral clergy were dispossessed, but the Cathedral itself was not greatly harmed. Services of a kind were continued, and "painful preachers" were appointed to expound the Word. When the King came into his own again the full services returned also, and the musical traditions of the Cathedral were restored. From this period dates the building of the great organ, which was constructed on the stone screen, or pulpitum, which still stood west of the crossing, and divided the choir from the nave.

A persistent tradition has grown up that the organ was presented by King Charles II, but the discovery a few years ago of the list of subscribers shows that the "merry monarch", though he may have been graciously pleased to allow Renatus Harris to undertake the work, was careful not to give a halfpenny towards the cost. Clergy and laity in the diocese were more generous to their mother church at this time, and the great Lord Scudamore, who rescued and restored the choir of Abbeydore, also gave money to the Cathedral, and gifts to the College of Vicars Choral. During the episcopate of Bishop Croft great efforts were made to build up again the Cathedral life, and to appoint as prebendaries only those who were beneficed in the diocese, and would properly perform their duties.

With the close of the seventeenth century a sense of calm and repose descended on the scene of cathedral life. The fine pair of altar candlesticks (still in use) which were presented by Dean Tyler (also Bishop of Llandaff) in 1719, shows that old customs still prevailed. Bishop Bisse, who was appointed in 1712, spent a great deal of his own money on both palace and Cathedral. He pulled down a large part of the roofless Chapter House, and built a stone facing to the palace, while still retaining some of the timbers of the Norman hall. Within the Cathedral he caused to be erected two masses of masonry beneath the north and south arches of the tower. These no doubt were intended to support the central tower, which was still showing signs of weakness, but with their curious design, and ox-eyed opening, were found later to have done more harm than good.

The bishop also destroyed a good deal of the east end of the presbytery in order to put up an altar piece, very costly but extremely hideous, which filled the whole space at the east end from roof to floor. He painted the woodwork of the throne and encouraged all the prebendaries to do the same with their stalls. He rebuilt the two canons' houses on the north side of the Close, and is said by Browne Willis, the eighteenth century antiquary, to have caused the whole fabric of the Cathedral to be repaired, and the parish churches of the city to be made "very beautiful and splendid". Whatever then we may think of his taste, or however much we may deplore what he destroyed, we must give him credit for much energy

and generosity, and realise that in his generation he did his best to arrest the age of decay. In his time began the music meetings between the three choirs of Hereford, Gloucester and Worcester, which owe much to his brother, Dr. Thomas Bisse, Chancellor of the Cathedral, a great lover of church music.

To Bishop Egerton, who succeeded in 1723, must be ascribed the shame of pulling down the Chapel of St. Katherine and St. Mary Magdalene, which, as we have seen, was the earliest building of the time of Robert de Losinga. It was found very difficult to do, and took some years to complete, amid protests from the Society of Antiquaries. The only excuse that can be made for him is that St. Mary Magdalene had become by this time a chapelry annexed to the parish of St. John the Baptist, with a burial ground lying between the wall of the cloister and the bishop's kitchen quarters, which cannot have been too pleasant for the residents at the palace.

After this some fifty years passed away with little to record in connection with the Cathedral. But it must not be thought that the Dean and Chapter were utterly neglectful of their responsibilities for the fabric. They faithfully administered the fabric fund, they constantly cut timber from their woods for repair of the roofs, and from time to time obtained advice on problems of repair and maintenance. It is clear that the west front was a cause of anxiety. In 1751 alterations and repairs are recorded in the Chapter Acts as being carried out at the west end, and again in 1763 the north-west end was supported by temporary props, and a new buttress built. The bells, the roof, the lead-work, all had money spent on them, and the interior of the church was stone-washed. Part of the Bishops' Cloister was repaired, and a new music room built on the site of the west wing of the cloister, where the library was previously housed. But the efforts made were insufficient. Contemporary prints show that ominous and dangerous cracks were appearing on the face of the west front, and the authorities seem to have awaited the end with helpless fatalism. On Easter Sunday, 1786, services were held as usual, and on the Monday the west tower fell, bringing with it half the nave of the Cathedral.

#### THE AGE OF RESTORATION

By the 13th June the Chapter had recovered sufficiently from the disaster to cause the church carpenter to erect a screen at the west end of the choir so that services might be renewed, and the parish of St. John the Baptist was given the use of the choir for their services, which up to then had been held in the nave. Opinions were obtained from a Mr. Keck about the rebuilding, but in the end the architect James Wyatt was called in to undertake the work. For 150 years he has received nothing but abuse and execration for what he then did, and perhaps the time has come for an unbiased examination of his achievements.

First of all, it must be noted that he is not to blame for reducing the length of the nave by omitting the most westerly bay of the arcade. It was the Dean and Chapter who insisted on this. They took legal advice as to

whether a faculty was necessary, and when advised that it was, they applied to the Bishop for a faculty to rebuild the Cathedral on a new frontage. Lord James Beauclerk, who had spent the 40 years of his episcopate in quarrelling with the Chapter, refused to grant it, and not till the Chapter had appealed to the Archbishop, and Bishop Beauclerk was dead, did they obtain permission to curtail the nave. This was done, of course, on the ground of reducing the expense, and there is little doubt that Wyatt's timber and plaster vaulting is also due to lack of money. When we realise the very considerable sum which had to be raised, and that the final bill was not paid until 1817, and then to Wyatt's executors, it seems a little hard to blame him for economies which were forced on him by the circumstances.

The chief complaint made against him, however, is that he destroyed what remained of the Norman triforium and clerestory, and substituted a design of his own. In regard to this, it is interesting to read some remarks of the Revd. Thomas Garbett, who wrote in 1829 and defended Wyatt on this very point. He says, "It was at first suggested that the upper walls of the nave might be repaired, the arches which had been destroyed rebuilt, and a front constructed either with or without a tower. But, upon closer examination, the state of the Saxon (*sic*) work was such as to render it impossible to keep up the arcades and the clerestory windows; the walls having sustained immense injury, not only from the lapse of time, but from the introduction of Gothic lights within the circular arches, which had been hewn and shaped to admit the mullions and transoms. It was, therefore, determined, and that judiciously, to take down the whole of the superstructure, as far as the tops of the arches; and the only question which has subsequently arisen related to the difference in style of the ancient and modern nave. Some persons have argued, that as the lower tier of arches and pillars were circular, therefore the arcades and clerestory windows should have been circular also; and that to erect Gothic arcades and Gothic windows over Saxon arches was glaringly to depart from the design and practice of their ancestors."

Now if it be true that rebuilding was structurally necessary, it may surely be argued that Wyatt had as much right to design a nave in accordance with the taste of his own time, as the builders of the fourteenth century had to put a Gothic clerestory on the Norman triforium of the choir. This, of course, is precisely what he did, and we must now turn to consider what sort of a job he made of it.

Taking first the exterior view of the Cathedral, it must be remembered that with the exception of the east and west walls of the south transept (which were out of sight from the point of view of the ordinary passer-by) no feature of the Norman Cathedral remained. What Wyatt did was to design a range of clerestory windows in the Gothic style, which, while not slavishly copying any other windows, harmonize remarkably well with the Aquablancá geometrical windows in the north transept, Swinfield's late decorated in the aisles, and Bothe's perpendicular in the outer porch. Can anyone say that the exterior view of the Cathedral today from the north side is not completely harmonious and pleasing?

When we pass inside to consider the nave we may indeed regret that



Wyatt did not rebuild the Norman triforium. His own design for the triforium is rather meagre and shallow, but it was to some extent forced on him by his design for the clerestory. These fine windows had been brought down to the level of the aisle roof, and within are provided with deep steeply pitched sills, which enable the full value of the light to pass down into the nave. The old triforium was not entirely destroyed, but refaced with the new design which is lower than the old, and fragments of the old carved masonry still exist hidden behind it. Internally the new design has resulted in a nave full of light and cheerfulness, whereas the Norman nave must have been rather dark and gloomy. Let us then give Wyatt his due, even if we regret some of the things he did.

There is a drawing in existence made by Dr. Carless (c. 1830) showing the nave looking east to the stone screen and organ. From this it is plain that Wyatt brought the clustered columns supporting the vault right down to the ground, which helped to make a unity of the whole design. It was probably Cottingham who cut them off below the triforium, and added a series of elongated corbels from a mistaken idea of dividing the old work from the new. The nave was white-washed in Wyatt's time, and he is not responsible for the stencilled decoration of the vaulting. Dr. Carless's picture gives a pleasant impression.

Wyatt's design for the west front was severely plain, but must be considered later when it was replaced in the early twentieth century. He took down the steeple from the central tower, no doubt to lessen the weight on the piers<sup>1</sup>, and lowered the pitch of all the roofs. He rebuilt many of the buttresses, and added flying buttresses to the sides of the choir and south transept. He restored part of the cloisters, and removed tons of earth from the Close, bringing the level down nearer to its original height. It is probable that not enough credit has been given to the great amount of preservative work accomplished at this time. Of course much remained to be done, and in the early Victorian era a great wave of church restoration was beginning all over the country. John Merewether, who was appointed Dean in 1832, found the central tower and the Lady Chapel in a very shaky state. A report made at the time by Professor Willis of Cambridge gives a striking description of the condition of the tower piers, and the way in which they had been bolstered up, both at the time of the first scare in 1320, and at later periods. The first arches on each side west of the crossing had been entirely reconstructed, and the arches in the choir aisle built up with walls of masonry leaving only a small doorway.

The architect employed by Dean Merewether was a Mr. L. N. Cottingham, and he rebuilt completely the four piers and arches of the central tower, an extraordinary feat of engineering considering the weight of the superstructure. He also rebuilt the eastern arches of the arcade and the arches into the aisles, copying as far as possible the original design. All the whitewash was scraped off the cathedral at this time, and the stone tooled down with vertical lines, so that it is impossible to distinguish old work from the new. Cottingham, and his son after him, were further employed in rebuilding the east wall of the Lady Chapel, though it is sad

<sup>1</sup>A report by Wyatt to the Dean and Chapter recommending this is in the cathedral library.

to find in the Chapter Acts disputes and threatenings of law suits between the Chapter and young Cottingham about the bill.

Dean Dawes succeeded in 1850, and still the work of restoration went on. Gilbert Scott was now the architect, and was a better antiquary than any who had gone before him. He restored the Lady Chapel and south transept, and did much for the exterior of the Cathedral in going over Wyatt's work, and restoring in small details some of the things that Wyatt had altered, such as the pitch of the roof of the Lady Chapel. He was responsible for the rearrangement of the interior of the choir, and the furnishing of the Lady Chapel for the parishioners of St. John the Baptist. He set up the stalls in the presbytery instead of the crossing and finally designed and erected the metal screen which now adorns the entrance to the choir.

Criticism of Wyatt fades into insignificance before the revilers of this screen. Even Scott himself seems to have had some doubts afterwards, for in his paper read before the Archaeological Association in 1877 he said, "I am not sure that I should do so were my time to come over again, but I do believe the uses of the Cathedral have gained by it." Probably we shall not dispute this last statement. For modern use Hereford Cathedral is too small to be divided into two separate parts by a stone screen. Unfortunately Scott's open screen coincided with a period when ironwork was all the rage. In this rather unhappy medium he produced a work of considerable merit. The figures are good and well grouped, but the brass columns and elaborate decoration do not appeal to our taste today. By that generation, however, it was regarded as a thing of beauty, and perhaps they have a right to their opinion as much as we have.

A word must be said about the Chained Library, which was ejected from the Lady Chapel when this was restored and fitted up for worship again. After some years of neglect, the books were brought back to the treasury chamber above the north transept aisle, where the Rev. F. T. Havergal did all in his power to preserve and care for them. The building of the lower library at the south-west corner of the Bishop's Cloister in 1897 helped to provide suitable accommodation for the overflow. The story of the restoration of the presses in which they had stood so long in the Lady Chapel must be read in Canon B. H. Streeter's "The Chained Library".

At the close of the nineteenth century it was decided to improve on Wyatt's west front. This was severely plain, with three unfilled niches and a window of perpendicular design above a pair of plain doors enclosed within a crenelated porch. Strangely enough, if it was their intention to rebuild the whole front, those responsible began by inserting a new window of decorated type. This was designed by Oldrid Scott, son of Gilbert, and given by the women of Herefordshire in memory of Queen Victoria. The window and wall containing it had then to be shored up while the new west front, also by Oldrid Scott, was built around it. Whether this front is an improvement on the old is a matter of opinion, but at any rate it shows that the twentieth century had as great a regard for the Cathedral and as generous an impulse towards it, as any other. That this feeling persists is shown by the splendid gifts of the late Mr.



Lennox Lee to the Cathedral, and the refurnishing of the Lady Chapel completed by Mrs. Lennox Lee.

Work on the fabric is constantly going on, and every effort is made to preserve the great heritage which has come down to us. A grant from the Pilgrim Trust has helped the Dean and Chapter to keep up with repairs which were delayed by the war, and the Friends of the Cathedral have done much to clean and beautify the interior.

The Cathedral is a history in stone of the faith and hope of successive generations of Christian people in this diocese. May it long continue to stand here, a thing of beauty in itself, and a witness to the power of God in the hearts of men.

## *The Church Architecture of Herefordshire*

By H. J. POWELL, F.R.I.B.A.

### INTRODUCTION

**C**HURCH architecture, particularly in mediaeval times, was influenced by the local building material available, as means of transport were primitive, and stone, except for the larger churches, was not transported any great distance.

The Old Red Sandstone of Herefordshire was not suitable for delicate carving when needed externally, and this is one reason why the same richness in ornament is not attained in the Herefordshire churches as in other counties such as Gloucestershire and Somerset. Another reason is that Herefordshire, being an agricultural county, never enjoyed anything but moderate prosperity. Timber, however, was plentiful and this gave Herefordshire the timber towers which are a remarkable feature of the county. I do not wish to infer by these remarks that the standard of work was definitely below the rest of the country, but rather that the churches generally were not built on so grand a scale. History also played its part in influencing architecture, and because of continued strife that went on in the county peculiarities in planning are found, such as towers detached or strategically placed for defensive purposes. Monasteries were plentiful and they were centres of church building.

There are many churches in the county, often the only building of antiquity in a village, and most of them are well kept and display variety and individuality. Norman work predominates, and it was during this period that the county produced a school of stone carvers whose work was not equalled in other parts of England.

The Gothic architecture of the churches is not noted for its richness or delicacy, but good specimens of Early English and Decorated work are found in all parts. Although complete rebuilding was not so usual as in richer counties, the churches were continually changing, sometimes by increasing the accommodation, sometimes by building porches for protection from the weather, or by adding chantry chapels. The improvement in the art of glass-making led to the insertion of large windows in which this skill could be displayed.

In a county where timber was plentiful, where good building stone was scarce, and where the folk were neither rich nor skilled, it is natural that timber roofs far outnumber stone vaulted ones.

In the fifteenth century the power of the Church declined and that of the middle classes increased. It was during this time that the guilds in the big trading centres built so many chantry chapels to their churches. The county not being a trading centre, Perpendicular work is not plentiful in it, being confined principally to clerestories and the upper stages of towers. The terms 'Early English', 'Decorated' and 'Perpendicular', though rather unscientific, are used here for the different periods as being

so well known that they are the simplest method of referring to the different phases of an ever-changing architecture.

Examples of Renaissance work are to be found, and there are also some examples of Victorian Gothic and later work which will be briefly mentioned. It is not possible to mention every church in the county, but the aim has been to cite the best examples and note local peculiarities.

#### PRE-CONQUEST STYLE (FIFTH TO ELEVENTH CENTURIES)

This style is perhaps better known as 'Saxon' and is the name given to the primitive building that was carried out in our country after the departure of the Romans, and before the era of church building had begun under the Normans. It should be realised that when S. Augustine visited England in 597 A.D. a Christian church already existed in Canterbury. This proves that Christians existed in England before his mission, having been converted by the Celtic missionaries from Iona, Lindisfarne and S. Davids.

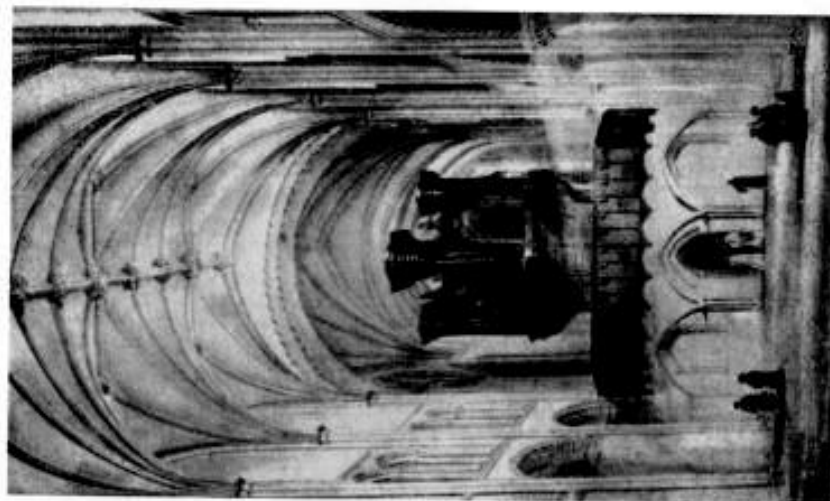
These early Celtic churches were small and rectangular in plan, sometimes with a rectangular chancel and sometimes without a chancel at all. There was no apse. This plan undoubtedly influenced the English parish church all through its history. The basilica plan, introduced by S. Augustine, was based on the Roman basilica or public hall and consisted of a nave with two aisles and an apse at one end in which stood the altar with the seats for the clergy behind and round the apse. This plan never found great favour with the English and most Saxon churches followed the Celtic plan. This was equally true of Herefordshire.

Saxon work in Herefordshire is scarce and it is even doubtful whether some of the supposed pre-Conquest work actually belongs to that period. Kilpeck church appears to be all twelfth century work with the exception of the north-east angle of the nave, which consists of a sloping buttress made up with large quoins. On plan, this buttress is out of alignment with the remainder of the church, and it is held by some authorities to be the remains of a pre-Conquest or Saxon church. Similar work, of a later date, may be seen at the neighbouring church of S. Devereux, and it is therefore extremely doubtful whether it is pre-Conquest work.

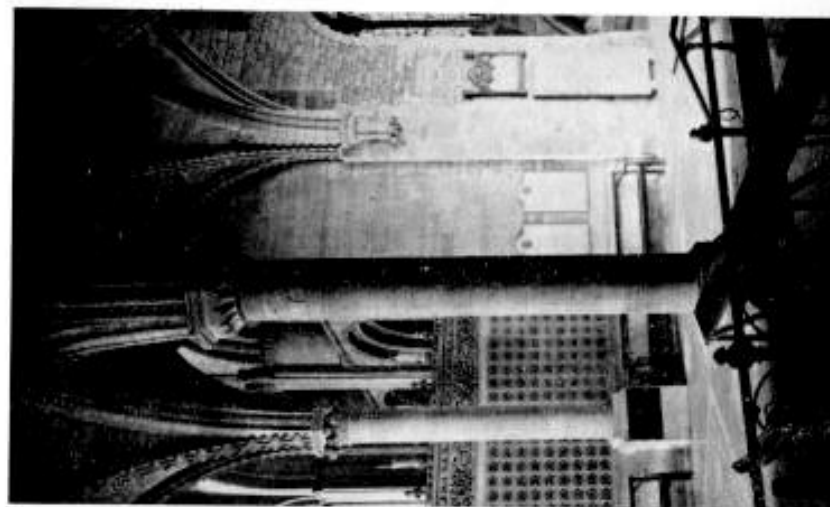
At Peterstow church, the eastern two-thirds of the north wall of the nave is built on a base of megalithic blocks with quoins at the west end, which suggests that it was the wall base of a shorter church. As the remainder of the walls of the nave are of early twelfth century construction, it is feasible to suppose that this base is pre-Conquest work.

The church at Tedstone Delamere probably incorporates more pre-Conquest work in its structure than any other church in the county. The whole of the eastern part of the nave is probably pre-Conquest, although the only evidence to support this statement is the thickness of the walls (two and three-quarter feet) and the triangular strip label of the early north door. The nave was lengthened in the twelfth century and this accounts for the doorways on the north and south walls being central in the nave instead of nearer the west end.

It has been suggested that the tower at Pudleston might be pre-Conquest work. It has pre-Conquest features such as a pronounced batter inwards,



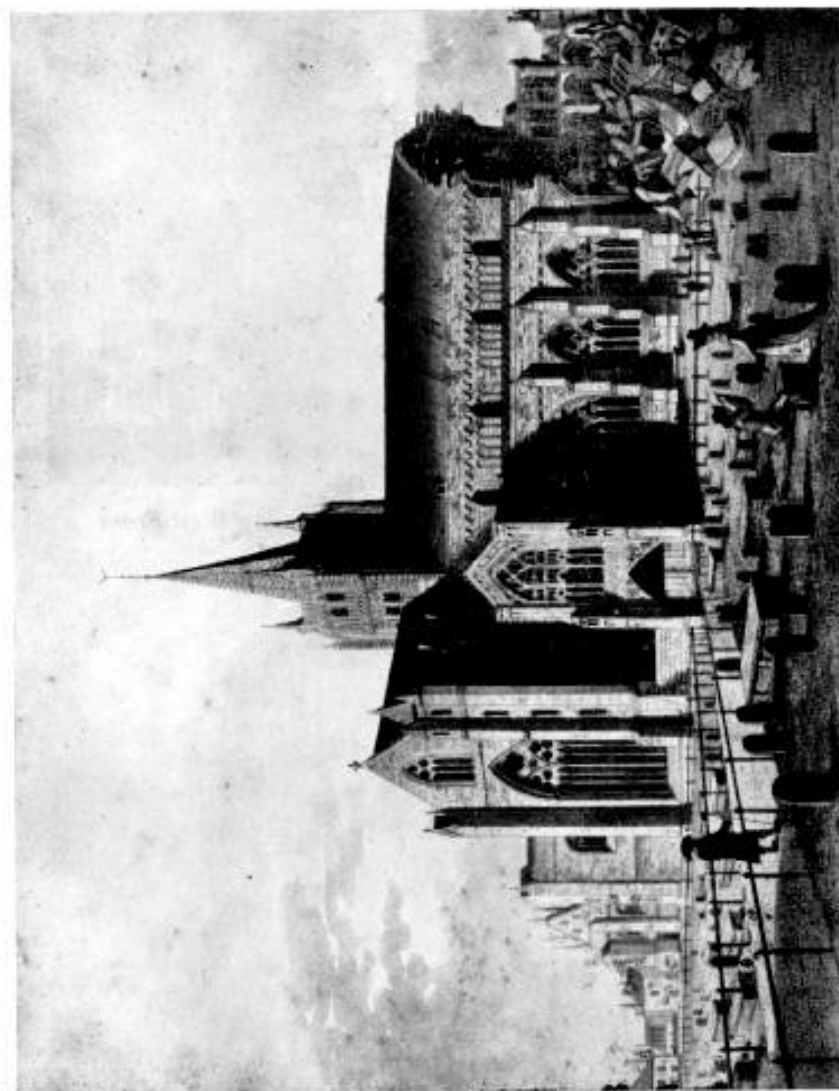
*Hereford Cathedral:  
The Nave and Stone Screen before 1842  
(From drawing by J. Carless)*



*Hereford Cathedral:  
Ambulatory*



*Hereford Cathedral: North Transept*

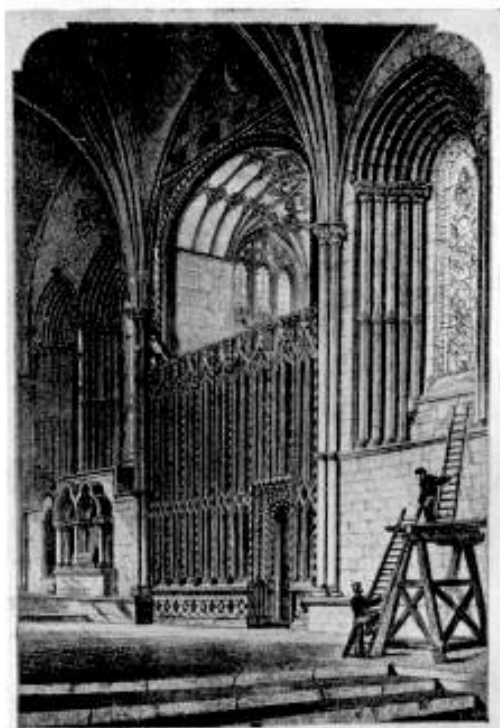


*Hereford Cathedral: After fall of West Front in 1786  
(From engraving after J. Watkin)*

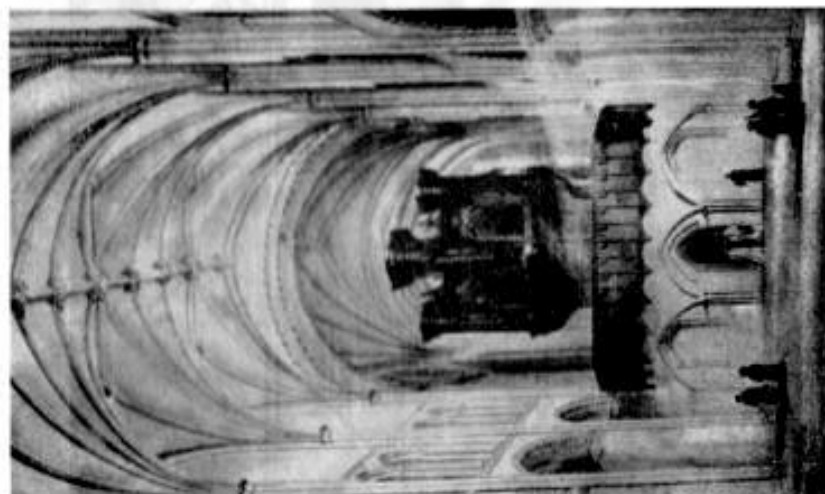




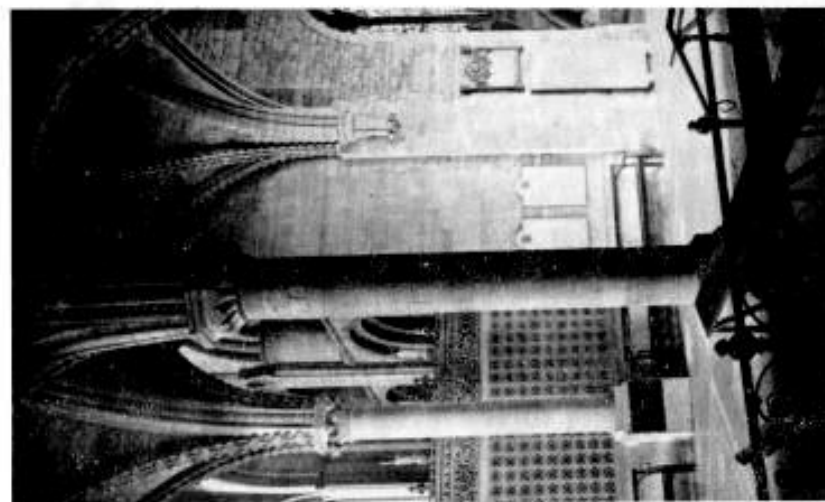
*Hereford Cathedral from the South-East, showing West Front  
by James Wyatt*



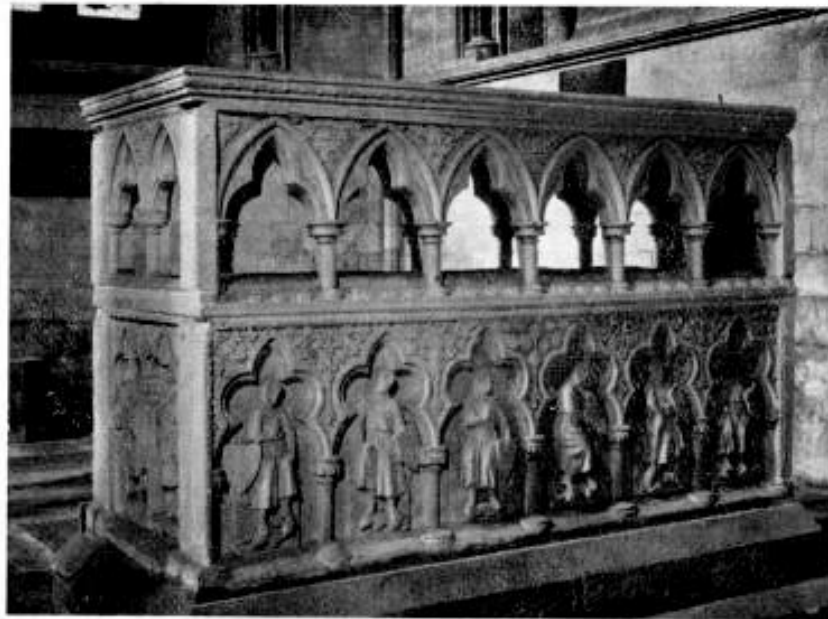
*Hereford Cathedral: Audley Chapel Screen  
(From an engraving)*



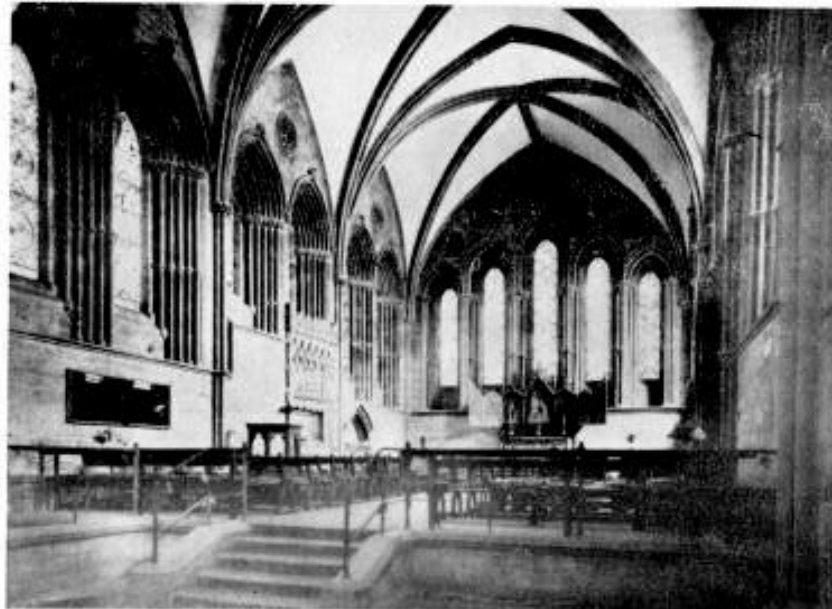
*Hereford Cathedral:  
The Nave and Stone Screen before 1842  
(From drawing by J. Carless)*



*Hereford Cathedral:  
Ambulatory*



*Hereford Cathedral: Cantelupe Shrine*



*Hereford Cathedral: Lady Chapel*

large quoins set partly on end, rubble plinth and oversailing courses and rubble arches, not set radially. As, however, there is no sign that the later lancet windows were inserted, there is some doubt whether the tower is any earlier than the twelfth century.

It is reasonable to suppose that in the wooded parts of the county some early churches would have been built of timber and these would have long since perished. That pre-Conquest stone churches nevertheless existed in Herefordshire is proved by the re-used ornaments and stones found in the following churches. At Acton Beauchamp a ninth century cross shaft is reset as a lintel in the tower. At Cradley a decorated stone is used in the walling, and at Bromyard the figure of S. Peter, over the south doorway, may have belonged to the pre-Conquest minster which is known to have existed there.

#### ANGLO-NORMAN STYLE (TWELFTH CENTURY)

Owing to Norman influence the Romanesque style never developed in England as it did in Germany. Norman ideas were brought to this country before and after the Conquest. Nevertheless the style grew and was developed here in England. It is for this reason that the name 'Anglo-Norman' is much more applicable to the style than 'Norman'.

The Norman conquest was the beginning of the first great era in church building and we find that nearly all our parish churches have remains of Norman work incorporated in their structure, however small it may be. The plans of the early Norman churches of Herefordshire do not depart from those in other parts of the country, but the number of churches still possessing, or formerly possessing, an apsidal termination is considerably above the average.

Three-division churches with apses are found at Kilpeck (Fig. 1) and Moccas. At Peterchurch (Fig. 2) the chancel is sub-divided into two, thus making what appears to be a four-division church. The first division nearest the nave was probably meant to carry a tower, and if the plan is examined it will be seen that the walls have been thickened for this purpose. Apses also formerly existed at Fownhope, Mathon, Pencombe, Tarrington, Leominster, and in the Cathedral.

Two Norman churches with naves and square-ended chancels in the Celtic manner are found at Middleton-on-the-Hill and Castle Frome.

The third type of Norman plan which was utilised for the larger churches and cathedrals, but which influenced parish churches throughout the succeeding styles, was the cruciform plan with aisles. This had a central tower, a feature which the Normans used even on their aisle-less churches. It was intended at Peterchurch and exists at Fownhope (Fig. 3).

It is interesting to note that 'herringbone' masonry which, at one time, was always considered to be Saxon work is now definitely known to be Norman. Examples of this form of construction are found in the church walls at Bredwardine, Hatfield, Munsley, Mathon, Wigmore, and in the ruined church at Edwin Loach.

It is not by the method of wall construction that Norman work is best known, however, but by the use of the round arch. Aisled churches were

rare in this style, arcades being found only in the greater churches like the Cathedral and Leominster Priory church.

The most usual example of the round arch found in the local churches is the chancel arch, as at Fownhope, Peterchurch, and elsewhere. These arches are sometimes simply moulded as at Peterchurch, or they may be ornamented as at Garway: the latter has a very unusual decoration. The jambs are usually constructed with plain columns with carved capitals and moulded bases, as at Garway; but at Kilpeck they are enriched with figures of saints, carved in the same manner as the work in the south entrance doorway at the same church.

Similar work is also to be seen at the Cathedral where the three easternmost bays of the nave have their capitals enriched with interlacing ornaments similar to those at Kilpeck and elsewhere in the county, and are examples of what is probably the richest Norman work in the country.

Another peculiarity in this county is the use of the scalloped capital with concave outline to the component cones, as may be seen at Ledbury. It is said that this was practised by a west country school of masons.

The Norman builder knew where to apply his ornament, and the doorways, with round arches and sculptured tympana, were often the only decoration in the church, as at Aston, and the tympana at Brinsop and Fownhope. Many fine doorways are found in the county such as Yatton chapel and Rowlestone, but the finest is at Kilpeck (Fig. 4). This doorway is a notable example, and for grotesque work is a wonderful specimen. The jamb shafts have elaborate scroll work containing human figures and the tympanum shows the tree of life.

This form of decoration, which is peculiar to Herefordshire, perhaps reached its culmination in this little apsidal church. It has been, and still is, suggested by many writers that it was due to Celtic influence, but if this is true it would be found in the neighbouring Welsh counties, and this is not so. Other writers suggest Scandinavian influence, but the Royal Commission on Historical Monuments thought it much more probable that it was the work of some highly trained and individual stone carver and his pupils. There is no doubt that for sheer beauty and excellence these Herefordshire carvers were not surpassed. Other examples of this carving are found at Leominster, Rowlestone, Brinsop, Fownhope, in the tympanum at Stretton Sugwas, the rebuilt arches at Shobdon, and the fonts at Castle Frome and Eardisley.

Windows in the smaller churches are small in the Anglo-Norman style, with the jambs widely splayed within, and were usually unglazed. Owing to its high cost, glass was only used for the larger and richer churches. The possibility of defence, also, had to be considered. Large windows, intended for glass, were treated like miniature doorways, with columns, caps and bases; examples are to be seen at Kilpeck and Leominster. The former is enriched with the interlaced ornament peculiar to Herefordshire.

Aisled Norman chancels are extremely rare, and, when they do occur, are mostly late in the period. There is, however, a fairly early instance of this type at Ledbury. When the Normans built aisles they always had clerestories and at Ledbury the clerestory windows are circular. This style was not uncommon. A clerestory also exists at Leominster, where the

thirteenth century nave is built against the Norman nave: the windows are now inside the church.

Complete Norman towers are scarce in the district, although not a few later towers are built on Norman bases as at Bromyard and Much Marcle. These two towers are central, and Bromyard has circular tower stairs, a rare feature in Herefordshire. The tower of Wellington church, which is at the west end, is a curious example with pilaster buttresses (Fig. 5). In the angles of these buttresses columns are inserted, whilst a central buttress on the west face is pierced with round-headed lights. A tower at Eaton Bishop belonging to this period bears traces of Saxon influence and has been likened to the tower of Bosham church in Sussex, although the latter has true Saxon long and short work. The Eaton Bishop tower is longer from east to west than from north to south and has two-light windows, divided by round shafts with plain capitals. The walling, however, is free from long and short work, and the great thickness of the walls indicates that it is post-Conquest. Complete Norman towers exist at Kington and Fownhope (Fig. 6). The latter is the best example in the county and is a central tower with true Norman windows on each face. Both these towers are capped with broad timber spires of later date.

#### TRANSITIONAL NORMAN STYLE (LATE TWELFTH CENTURY)

Mediaeval architecture, unlike classical architecture, was constantly changing, and because of this gradual evolution it is sometimes very difficult, especially upon a superficial examination, to date accurately a feature in a church such as an arch or a window. The transition period from the Norman style to the Early English style was, however, more clearly indicated than other transitions by the fact that it was a change from the round to the pointed arch.

Peculiarities and mixing of the styles are common during this period. The late twelfth century west doorway at Leominster is an excellent example of the use of the pointed arch in an otherwise typically Norman door. The late twelfth century re-set archway at Hampton Bishop is semi-circular and springs from semi-cylindrical responds, one having a scalloped capital without an abacus.

The arcade at Bosbury (Fig. 7) has two-centred arches with moulded bases and scalloped capitals. At Eye the south arcade (dating from 1190) and the easternmost pier and respond have scalloped capitals. The remaining capitals were intended for this treatment but were not completed. At Kingstone, also, there are arches on scalloped capitals with square moulded bases.

At Hampton Bishop a transitional Norman window occurs in the north wall of the nave, and there are two interesting doorways of this date at Dore Abbey and Kings Pyon Church, the mouldings of which make an interesting and instructive study.

In addition to an arcade of this period, at Bridge Sollers there is also a transitional Norman tower with a fifteenth century parapet.

The finest example of transitional Norman work, however, occurs not in a parish church, but in the retro-choir of the Cathedral. It consists of



two excellent columns with bases and capitals and two arched openings. The two columns support two bays of transitional Norman vaulting<sup>1</sup>.

#### EARLY ENGLISH STYLE (THIRTEENTH CENTURY)

The English builders, having acquired a mastery of the fine arts, showed initiative in the thirteenth century and succeeded in evolving a style of their own, thoroughly English and free from foreign influences. This style also marked a reversion to traditional ways and a breaking away from the ideas introduced into the country at the Norman invasion. For these reasons it is popularly known as the Early English style.

The apsidal plan never found great favour in this country, and the Early English style, noted for its typically English character, reverted to the Celtic plan of nave and chancel with west tower and square east end. In the smaller churches the whole building was under one roof and the division between the nave and the chancel was defined by a screen as at Holmer. The Early English tower was built at the west end of the Norman church at Peterchurch and not centrally as originally provided for.

The reversion to the square east end was also partly due to the influence of the Cistercian Order, who believed in building simple churches devoid of superfluous decoration. An example can be seen at Abbey Dore, the east end and the transepts of which are now used as the parish church. Excellent Early English chancels with square terminations are to be seen at Dilwyn and Kington.

The architecture of this period was nearly as substantial, in appearance, as the Norman, but it was more refined in design and detail. It was chiefly distinguished from former styles by the use of the acutely pointed or 'lancet' arch over door and window openings and in arcades, and by the use of stiff-leaf foliage and the round abacus of the capitals. No more delightful example of this style exists in Herefordshire than Abbey Dore (Fig. 8), where the aisles are still vaulted with Early English quadripartite vaulting, the only example in the county with the exception of the Cathedral.

The walling of this abbey and Holmer church are good illustrations of the early use of buttresses for constructional purposes. As seen at Dore, at the angles of the transepts and between the aisle windows, the Norman pilaster has now developed into a broad shallow buttress, with plain weatherings at the top. The aisle buttresses terminate at the springing of the windows. The chancel walls, though originally vaulted, are not buttressed in any way, but the walls, still in the Norman manner, were built thick enough to withstand the thrust. Similar buttresses appear at Holmer church, as well as the usual drip mould below the windows.

Excellent arcades with 'lancet' arches are to be seen at Abbey Dore and Madley. The latter church has a fine nave of the same period. Canon Pyon and Much Marcle are also typical examples in this respect. An interesting arcade is found at Kingstone, where the meeting of the chancel and the north chapel arches with the main arcade is most un-

<sup>1</sup>Further details will be found in Archdeacon Winnington-Ingram's paper on the Cathedral.

usual. There is another unusual arcade between the north transept of the cathedral and its east aisle; the arches are struck from below the springing which gives them a straight sided appearance. This form of arch was copied at Colwall.

The columns of an Early English arcade are generally cylindrical in plan as at Canon Pyon, but some have attached or detached shafts as at Abbey Dore, Much Cowarne, and Lyonshall. At the latter churches may also be seen a peculiar treatment of the capitals above the shafts.

The mouldings generally maintain a high standard as is shown in the examples at Madley and Walford. The tall lancet windows, peculiar to this style, are found at Abbey Dore both singly and grouped.

The plan of the chancel at Kington church also affords a good example of the typical arrangement of windows in the Early English Church. When two lancets were grouped together and an opening was cut between the heads an early example of tracery known as 'plate tracery' was formed. Perhaps an early attempt at this might be suggested in the south transept at Dore, where the two lancets have a vesica-shaped aperture between them. At Ewyas Harold this arrangement is carried a step further, and the two lancets in the tower are placed under a hood mould, the space between the heads being pierced. In the west wall of Aconbury church is a still more advanced example, consisting of three trefoiled lights each with a moulded label and all enclosed in a moulded outer arch with an outer label (Fig. 9). The Early English nave at Madley has a clerestory of the same date, a rare feature in this period.

Doorways of this period are not so plentiful as those in Norman style, for if the latter were in a good state of preservation they were often retained when the rest of the church was rebuilt. Many examples of this practice exist, Colwall and Kingstone being two. When such doors do occur they are quite plain, as the north door of the presbytery at Dore, the west door at Madley, and the main doors at Leominster and Ledbury. The thirteenth century chancel doorway at Dilwyn has cusps in the head and one at Kings Pyon has moulded jambs and a cinquefoiled head.

Porches are still rarer, but one at Leominster, rebuilt in the following century, retains some thirteenth century work in the outer arch. At Ledbury is a porch that still bears the consecration cross on one of its jambs. It has two rooms above it: one, it is thought, was intended for the priest and the other for the sacristan.

Carving, as usual, was sparingly used, but when it occurs it is good. Excellent examples are to be found in the cathedral and in the capitals and vaulting bosses at Abbey Dore.

As has been noted before, the central tower was now abandoned for the western tower, although Mordiford church, which once possessed a central tower, has Early English chancel arches. The western tower was usual, however, examples being the little one at Rowlestone with its pyramidal roof and the large one at Madley, one of the finest in the county. Edwin Ralph has a squat tower with a shingled broach spirelet, and at Kinnersley is an unusual tower with a saddleback roof. The detached towers at Bosbury, Ledbury and Richards Castle are all of this date.

Birley and Holmer churches have stone towers of the same period sup-

porting timber belfries, the latter dating from the sixteenth century. The tower at Holmer is detached (Fig. 10).

#### DECORATED STYLE (FOURTEENTH CENTURY)

This style, the second period of Gothic architecture, is thought by some to be the culminating period of mediaeval building. It was notable for the building of large aisleless chancels and in some cases by the reversion to the apsidal end. Two instances of this should be noted in the chancels at Marden and Madley. The former church is said to be the first resting place of Saint Ethelbert, the patron saint of the Cathedral who was believed to have been murdered at Sutton, close by. At the west end of the church is a well, where, according to tradition, he was buried. When miracles were worked at his grave, his remains, however, were transferred to the Cathedral. There is no doubt that Marden benefited by this connection, which probably accounts for the rebuilding of the chancel. Madley, a village on the other side of the river, has one of the most impressive churches in the county. It was said to have possessed a figure of the Virgin which attracted pilgrims who provided the funds for the extensions. The fine apsidal-ended fourteenth century chancel stands over a groined and vaulted crypt, the vaulting supported on a single octagonal column. This crypt, which is said to be the last built in this country, was probably constructed because of the rapid fall in the ground at the east end. It is believed that this chancel was inspired by that at Marden.

The theory of buttresses was now understood, and we find that the churches generally had thinner walls with larger buttresses, and bigger windows to light the interior and display the painted glass. The increased prosperity throughout the county of this time was responsible for the rebuilding of many churches, as at Pembridge. In order to improve the lighting many low aisles were rebuilt, or new and larger windows were inserted in earlier aisles, as at Leominster. Porches now became more common and were added to protect the doorways. There is much good work of this period in Herefordshire and some notable local features about which more will be written later. Pembridge is the finest complete church of this style in the county, a cruciform church with nave, aisles and a detached belfry, though perhaps the best work is found in the churches at Ledbury, Leominster, and Madley.

Arches now departed from the 'lancet' form as seen in the arcades at Bodenham, Pembridge, and Weobley, and are simply moulded. The ball flower ornament is used around the easternmost arch on the north nave arcade at Weobley. Columns, generally, appear to be octagonal, as at Bodenham and Pembridge. The mouldings, like those of the former period, maintain a high standard as at Bodenham and Pembridge, but it is interesting to note the different contours in the same period. They are sometimes slight, as at Weobley, or marked, as at Colwall.

Window tracery in the county is not outstanding, but, on the other hand, there are a number of local peculiarities introduced into the design in certain churches. The south aisle at Leominster Priory church has excellent geometrical windows (Fig. 11), the mullions and tracery of which are

covered with ball flower ornament. The north chapel at Ledbury, known as S. Katherine's, has windows treated in the same way. It is more than likely that these two churches, together with work at Weobley and elsewhere, were influenced by the central tower at the Cathedral which was entirely covered with ball-flower ornament.

The north and south aisles at Ledbury are also of this period, but not of quite the same date, and it is interesting to contrast the earlier geometrical west window of the north aisle with the more flamboyant corresponding window of the later south aisle. Excellent flamboyant tracery is also to be seen in the apsidal chancels at Madley and Marden, and reticulated work at All Saints', Hereford, Madley, and Pembridge. All the windows except the clerestory at Pembridge are of this type.

One local peculiarity is the placing of small windows above the chancel arch. At Pembridge they are cinquefoils within circles, at Kinnersley and Dilwyn they are octofoils, and at Ross quatrefoils. The quasi-transepts found in some churches are also peculiar to this county. These have nothing to do with window tracery but rather with the arrangement of the windows. At the east end of the nave aisles, where altars were placed, the easternmost aisle window was made taller than the rest, and to allow for the increased height a gable was formed over the window head with a ridge running back to the arcade wall. This arrangement is to be seen at Almeley, Eaton Bishop, Kingsland, and Weobley (Fig. 12). A similar gabled window is placed at Allensmore church east of the south door. The tracery consists of a very large spreading cusped trefoil across the three lights, a fashion set by the windows in the aisles of the Cathedral. Similar windows are to be seen at Canon Pyon, Weobley, and elsewhere. At Burghill and Credenhill the clerestories are lighted by small square windows.

The last of the local types of window, and perhaps the best known, is the early fourteenth century window found at All Saints, Hereford, Much Marcle church (Fig. 13), and elsewhere. It will be seen that the window, usually of three lights, is formed by carrying the mullions straight up to the main arch, the side lights each having an arch of their own. The main arch forms the head to the centre light. This feature, though only occasionally found in other parts, is common in Herefordshire.

Doorways generally are not so ornate as the windows, but are often sheltered by porches, as at Leominster and Pembridge; the latter porch has an excellent fourteenth century stone vault. Timber porches constructed on stone bases are to be found at Bishopstone, Humber, and Sarnesfield. The porch at Bishopstone (Fig. 14), a typical example, has a two centred archway with tie beam over and struts to the rafters. The barge boards are cusped.

At Ledbury and Weobley are two typical doorways with shafts to the jambs. The general section of these jambs and arches is a splay and not a series of recesses. These doorways are lavishly decorated with ball-flower ornament.

There are a number of handsome and well proportioned towers in the county of the fourteenth century, and a number of stone spires. Angle and diagonal buttresses also are found in this style. The tower at Canon



Pyon church is a good example of the local type; the ground floor stage forms the porch to the church. Another excellent tower is to be found at Weston-under-Penyard and these two are among the best of their period. Another handsome and unusual tower, with an unfinished spire, is to be found at Bodenham. It was built about 1330 and it is probable that the spire, which finishes with a lead roof just above the lower windows, was never completed. It presents an unusual feature. The excellent tower and spire at Weobley (Fig. 15) has diagonal buttresses and curvilinear tracery in the blind windows of the tower. The pinnacles are richly decorated and joined to the spire by flying buttresses. This spire, like the one at Goodrich, perhaps suffers from having no belfry lights, but has been pronounced by experts as being perfect in proportion. The fine spires at St. Peter's and All Saints', Hereford, the latter the tallest spire in the county, are also of the fourteenth century. The spire at Peterchurch, now taken down, was of similar date.

The most remarkable towers are undoubtedly the unusual structures found at Pembridge and Yarpole. They are two of the detached towers for which the county is noted, and there are no others quite like them. Pembridge belfry stands about 48 feet north of the chancel and has an irregular octagonal stone base with a long roof sloping up to a second stage. This stage is square and of timber construction and has a second roof reaching up to a smaller stage crowned with a pyramidal roof and a weather cock. The upper roofs are shingled and the lower ones tiled (Fig. 16). It has been suggested that this belfry was originally merely a timber framework for the bells. If so, this would support the theory that it was built detached owing to its timber construction, the stone base being added when this side of the county was in an unsettled condition owing to the raids of the Welsh, or during the Wars of the Roses. That it was used for defence is proved by the narrow loop holes in every wall, except that facing the church, and from the shot holes which have been found in the doors. The belfry at Yarpole is built on somewhat the same plan, but has only two storeys, and the base is rectangular in plan. That this was added later is evidenced by the weathered condition of the main upright and ties. It was during this period that many fine timber roofs were constructed. Many have been drastically restored but original examples of all types still exist, particularly roofs of the 'trussed rafter' and 'collar braced' types.

#### PERPENDICULAR STYLE

(FIFTEENTH AND FIRST HALF SIXTEENTH CENTURIES)

Perpendicular architecture is poorly represented in Herefordshire for a number of reasons. There is no doubt that the power of the church and the monasteries had, at this time, begun to diminish while, on the other hand, the power of the middle classes had increased. The aristocracy was impoverished by the long Wars of the Roses, but the wool trade, the basis of England's prosperity, enriched the merchants, who were principally responsible for the contemporary church building. It is for this reason that the finest work of the style, amounting very often to complete rebuilding, is found in the counties where the wool trade and weaving were most

prosperous. Herefordshire, an agricultural county, was comparatively poor, and most of the work of the fifteenth and early sixteenth centuries is confined to clerestories, the upper stages of towers, and some chantry chapels.

The addition of clerestory windows and the insertion of new and larger windows elsewhere were the result of a desire to improve the lighting of the churches and to create windows where stained glass could be displayed. Dilwyn and Eardisley are two churches where clerestories were inserted. How much clerestories improved the lighting is shown by the darkness of many churches which did not have these windows inserted. An interesting example of this, though not in Herefordshire, is the church of Grosmont in Monmouthshire.

Another practice (already mentioned) was to put a window over the chancel arch as if the clerestory was returned around the east end of the nave. Such a window is found at Eaton Bishop church.

In the cathedral is a large window in the south wall of the south transept which is remarkable for having no transoms. A window of the same date in the west wall, however, and the large west window at Leominster are of orthodox design, with transoms.

There are two perpendicular chantry chapels in the cathedral. The Stanbury chapel, built towards the close of the fifteenth century, is an excellent example of perpendicular work with walls panelled in the usual manner and a beautiful fan-vault of two bays probably inspired by the cloisters at Gloucester Cathedral. The Audley chantry, probably of a little later date, is a pentagonal chapel of two storeys projecting from the south side of the Lady Chapel, has a lierne vault and is divided from the Lady Chapel by a stone screen which retains some of its original colours. Another chantry chapel exists on the north side of Kings Capse church and another at Bosbury on the south side dates from the sixteenth century. This latter chapel, which was formed at the end of the aisle, has perpendicular windows and two bays of fan vaulting. The detail is very rich.

Spires now went out of fashion, but handsome towers are found at Leominster, St. Weonards, Much Marcle (Fig. 17), and Aymestrey, the last example having a vaulted ceiling to the lower stage. The tower at Much Marcle is central which indicates the existence of a Norman plan. The upper parts of the tower at Cradley and Mathon are also perpendicular. All these towers are handsome structures with fine proportions, but, of course, do not compete with the Somerset towers.

This period was responsible for a large number of porches, some built partly in timber, as at Aconbury (Fig. 9), Dewesall, and elsewhere. Stone porches with vaults are found at Ballingham and Kings Capse. At Dilwyn is a stone porch of early sixteenth century date. It is of two bays with buttresses in between the windows and at the corners. The handsome windows are of two trefoiled ogee lights with a quatrefoil in a two-centred head. The window reveals are moulded both externally and internally.

#### THE RENAISSANCE (SIXTEENTH TO EIGHTEENTH CENTURIES)

The Renaissance affected Herefordshire church building very slightly. The churches that had been constructed during the mediaeval period were



found to be ample, most of the building being confined to the reconstruction of certain churches that were probably in a dilapidated condition and to the rebuilding of some towers. Many monuments and tombs were erected during this time.

Three entirely new churches were also built by rich landowners at Tyberton, Stoke Edith, and Shobdon; the last two retain their original towers. The rebuilt church of Norton Canon is remarkable for re-using many thirteenth century doors and windows.

The Gothic style, however, died hard in the countryside of Herefordshire, as can be seen in the rebuilt church of Whitney-on-Wye, the tower of Abbey Dore, and the spire of Ledbury church, rebuilt in the eighteenth century.

Even the brick church of Tyberton, built in 1720, incorporates the Norman south doorway and other features (Fig. 18). Note also the pointed heads to the windows. It was left to the monuments and smaller ornaments, many of which were imported into the district and not made locally, to reflect more of the spirit of the Renaissance.

#### VICTORIAN AND MODERN (NINETEENTH AND TWENTIETH CENTURIES)

The Victorian period, as was the case all over the country, was remarkable for many restorations, and, although these were usually carried out in what today would be thought of as bad taste, there is no doubt that many churches were saved from ruin by the work that was put in hand.

The architects of the Victorian era had persuaded themselves that they had revived the mediaeval architecture which had been swept aside by the Renaissance and that they could design in the mediaeval manner. I suppose it is for this reason that churches and parts of churches were condemned wholesale and rebuilt instead of being reconstructed. A number of mediaeval churches were discarded and new churches built in their places, as at Bullingham, Llanwarne, Yazor, and Little Marcle. The last is a typical example of Victorian Gothic embodying features (such as the bell turret) which are certainly not to be found in true mediaeval architecture.

New parishes were also formed, and the churches were built in the style of the Gothic Revival.

As time passed, it was realised that dead styles cannot be effectively revived, and certain progressive architects turned their attention to the designing of churches in their own style, but nevertheless with a mediaeval feeling, which fits so well into our countryside. Such a church is to be found at Brockhampton, built in 1902 to the designs of the late Professor W. R. Lethaby (Fig. 19). A more recent example is the new church at Wellington Heath, Ledbury (Fig. 20), designed by the present writer and his colleagues, in which the over-large Victorian structure has been reduced to a size more suitable to the needs of the village community by re-using only certain walls of the original building.

#### CHAPTER XVII

### *The Domestic Architecture of Herefordshire*

By THOMAS OVERBURY, F.R.I.B.A., F.S.A.

**I**N this brief survey of the Domestic Architecture of Herefordshire an attempt will be made to relate the various angles from which the subject may be studied. Geographical conditions, historical and economical development all influenced domestic building to a greater or lesser extent with the passage of centuries.

Physically the county is wholly within the drainage basin of the river Severn, and is mainly within that of the Wye, which river divides the county from west to east between Hay and Hampton Bishop, and thence from north to south. The northern half of the county is largely drained by the Arrow, the Frome and the Lugg, the last uniting with the Wye near Mordiford. Outward facing marginal areas of the county in the north and east drain to the Teme, while the extreme south-west and south drain to the Monnow.

Without attempting any detailed study it may be stated that structurally the greater part of the county forms a great basin of Old Red Sandstone of Devonian age, with marginal outcrops of more ancient series in the north-west, and in the Malvern area. Within the basin there are older rocks exposed at some places, as for example in the Woolhope area. The higher land dividing the various river valleys consists mainly of the younger and higher beds of the Old Red Sandstone series.

Where the sandstones are exposed and readily quarried they have provided the local building stone. The relation between stone built houses and relief will receive further attention.

Within the Old Red Sandstone basin extensive areas are covered with more recent deposits, both glacial and alluvial. Districts where this is especially noticeable lie in the middle valleys of the Arrow and Lugg, and in the main Wye valley near Eardisley and Kinnersley. These regions provided, in early times, swamps little suited to settlement, but subsequently, after drainage, fertile areas developed round the margins of which villages tended to cluster. The domestic architecture of such villages has been directly influenced by the nature of the region. It is predominantly of timber framed buildings with wattle and daub filling.

The border situation of the county must be borne in mind. Readily open to invasion by Welsh tribes, its early history is of constant raiding, warfare and destruction, with persistent lack of security. Records make clear how frequently areas were laid waste and ownership of land and property changed. Under Owen Glyndwr it was the intention of the rebels to destroy "all pertaining to the English".

Down to the fifteenth century there was need for fortified buildings, and the manor houses west of the Wye had of necessity to be fortified if they were to survive.

"Castella" with wooden defences were probably early replaced by stone buildings. Ruins of some of the large castles remain as at Goodrich,

Clifford's Castle, and Snodhill (Peterchurch). Many lesser sites have disappeared, or fragments of the earlier buildings have been incorporated in those of later date.

Maps shewing the distribution of fourteenth century castles, and of fourteenth century fortified manors and other lesser fortified sites make very clear the concentration of defence in the western part of the county.

It will be noted that the county boundaries do not correspond with those of to-day. Ewyas Lacy was still Welsh land; part of Radnorshire formed the "Englishry of Radnor", while the extreme south-west of the county, formerly known as Archenfeld, was Welsh territory. The natural outlet for this region was, and still is, towards Abergavenny, and evidence of Welsh influence on the architecture of the region is to be expected, and is found. Again, the early history of north Monmouthshire and south and south-east Herefordshire is very closely linked, by family ties, by forms of land tenure and types of building, as well as by rock structure and soil formation. North Monmouthshire received much of its culture from Herefordshire and in the matter of buildings it is difficult to differentiate between the two districts.

The county had no main routes of trade and commerce, though ancient trackways can be traced. A notable example is that which led from the Mynydd Epynt, crossing the Wye near Erwood, and leading *via* Painscastle and the Arrow valley to the central Herefordshire plain.

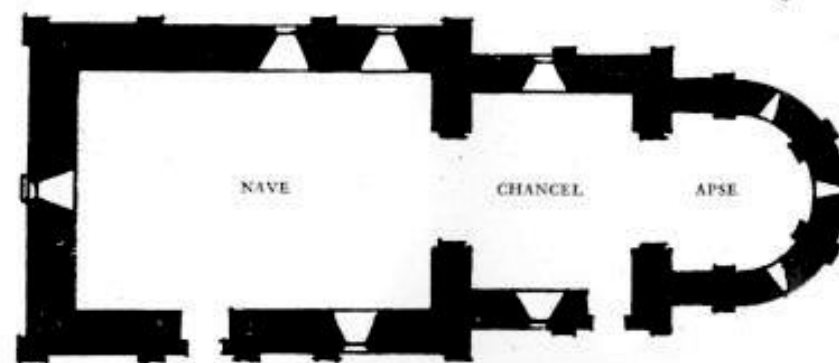
It is clear that the ancient Roman roads became diverted to serve the growing centres of trade and settlement. Nevertheless the roads of the county as a whole were few and poor. As late as 1808 we are told that "the state of the turnpike roads leading to Leominster is to the traveller an object of execration" and by the same writer that "the great improvements that have of late been made in the roads . . . contribute to raise this too long insulated district into an object of attention". Yet Leominster was one of the most prosperous centres in the county, and we may safely infer that the isolation of the less accessible regions was even greater.

The county was, moreover, poor. In the fourteenth century, assessed in terms of the wool tax, only three counties in England stood lower than Herefordshire. By the fifteenth century there had been some improvement and the wool of "Leyminster" ranked high, though that of the rest of the county fetched but a poor price.

The system of land tenure was extravagant. The common field system was for long universal, and as late as the middle of the eighteenth century was still very general. In the seventeenth century it was estimated that half the county was waste land, and at the end of the eighteenth century large areas adjoining Brecon and Radnor were still unused. The influence of this economic poverty is to be traced in the domestic architecture, to which there will be further reference, while periods of steady trade are seen to have had a direct effect.

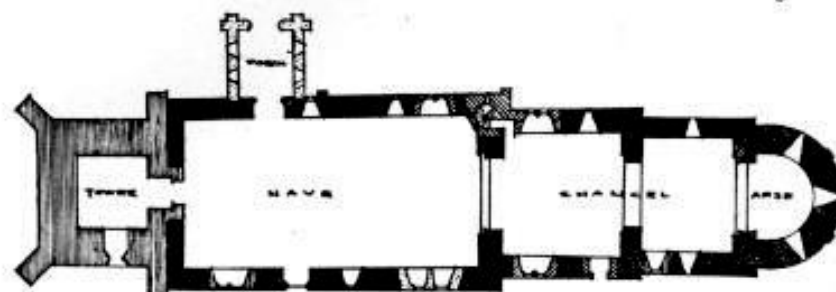
The principal materials used in the construction of the houses were, as would be expected, sandstone and timber. As in many other parts of the country, considerable areas were heavily forested. Oaks were called "the weeds of Herefordshire". Records indicate that grants to cut timber suitable for building were specifically made by landowners in the Middle Ages.

Fig. 1



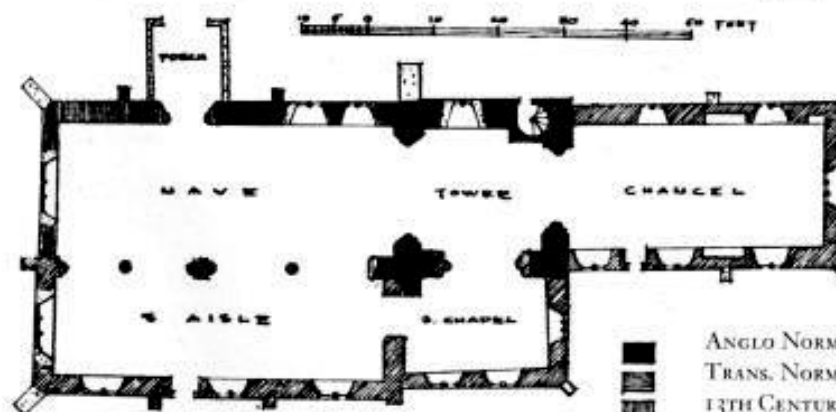
KILPECK CHURCH

Fig. 2



PETERCHURCH CHURCH

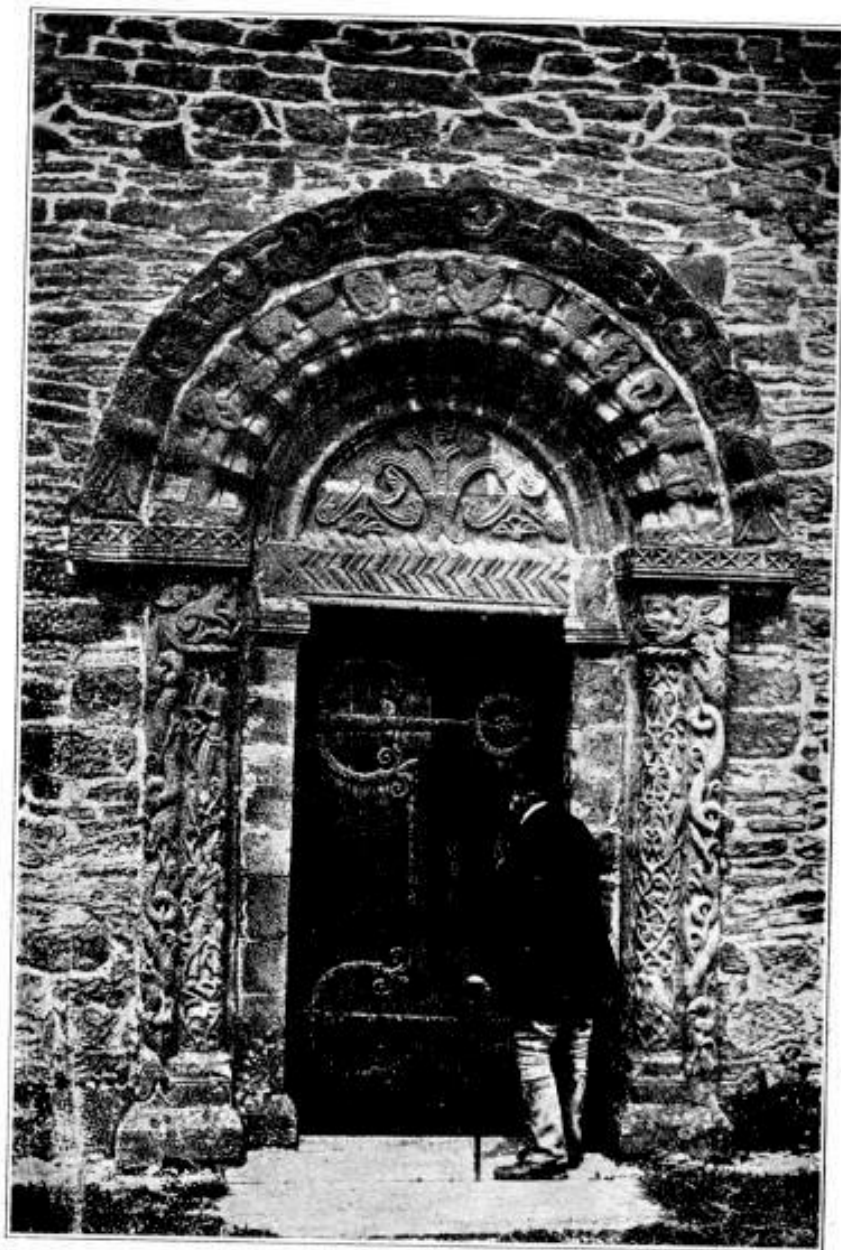
Fig. 3



FOWNHOPE CHURCH

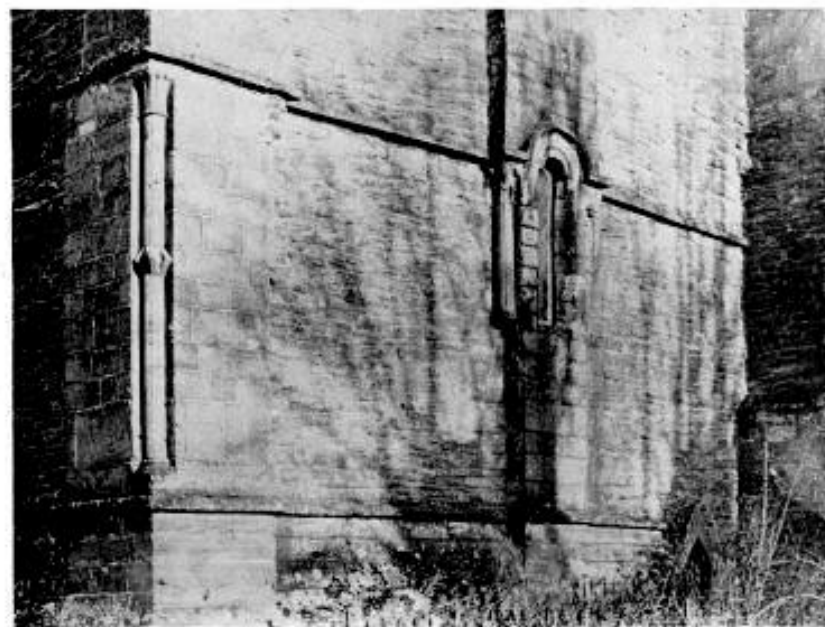
- ANGLO NORMAN
- ▨ TRANS. NORMAN
- ▩ 13TH CENTURY
- ▧ EARLY 14TH CENTURY
- ▦ LATE 14TH OR EARLY 15TH
- ▥ LATE 15TH CENTURY
- MODERN

Fig. 4



*Kilpeck Church: South Doorway*

Fig. 5



*Wellington Church: Base of Tower*

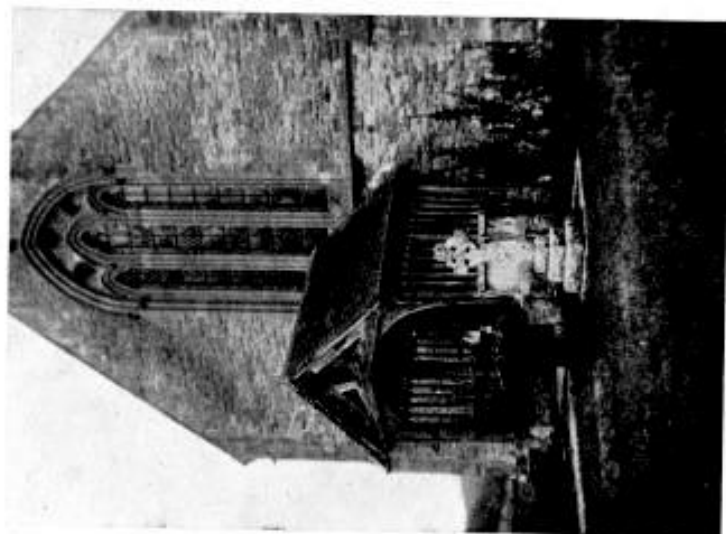
Fig. 7



*Bosbury Church: Nave Arcade*

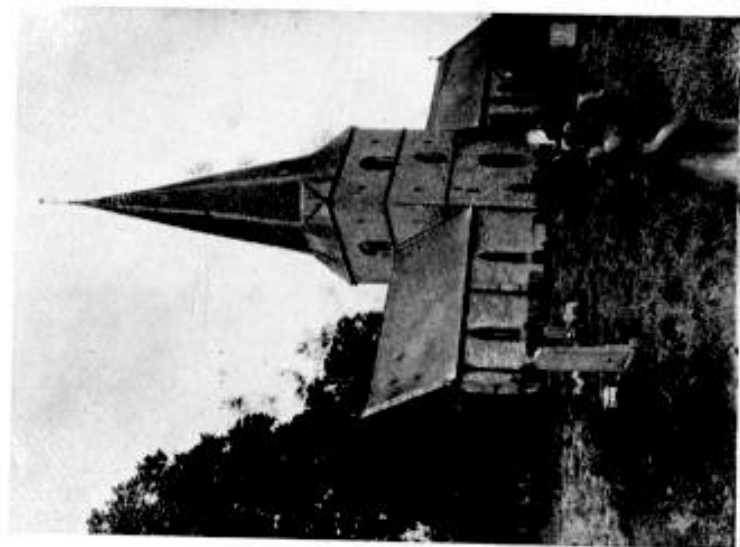


Fig. 9



*Aconbury Church; West End*

Fig. 6



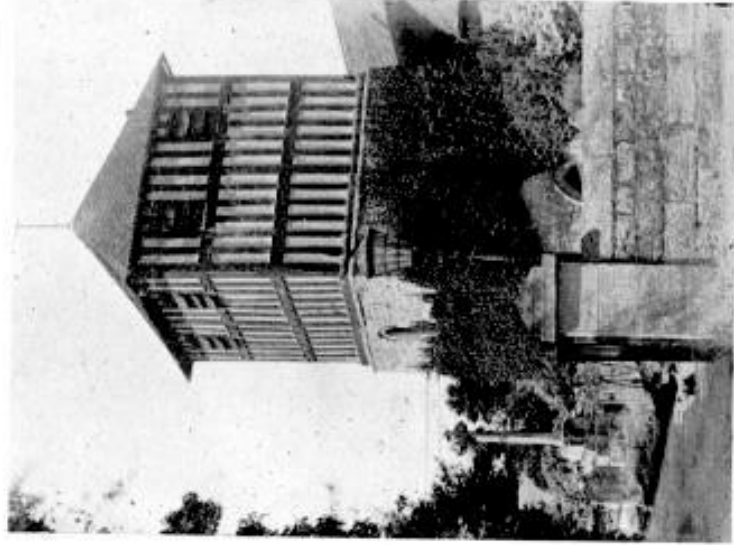
*Fownhope Church*

Fig. 8



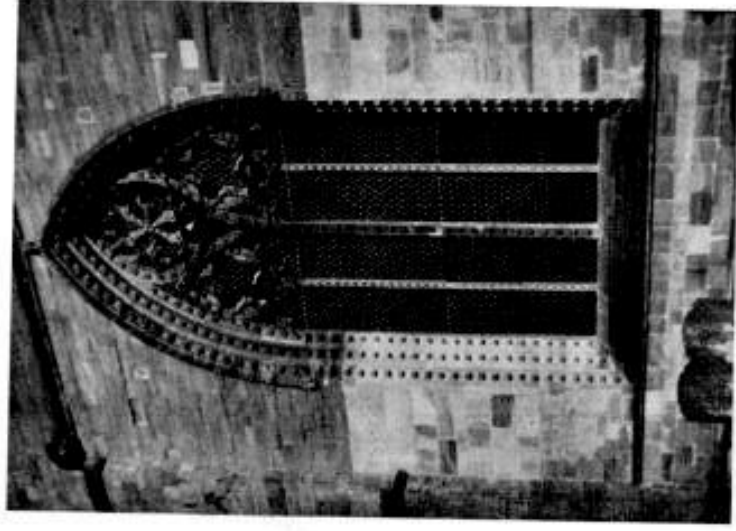
*Abbey Dore*

Fig. 10



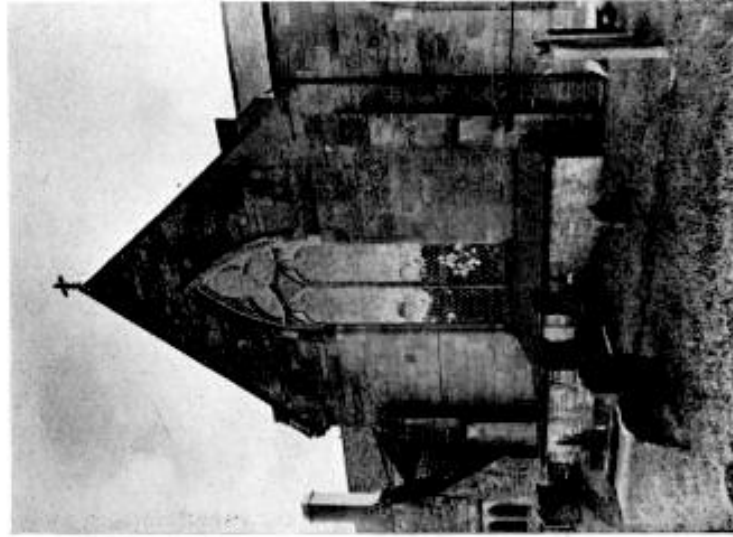
*Holmer Church Tower*

Fig. 11



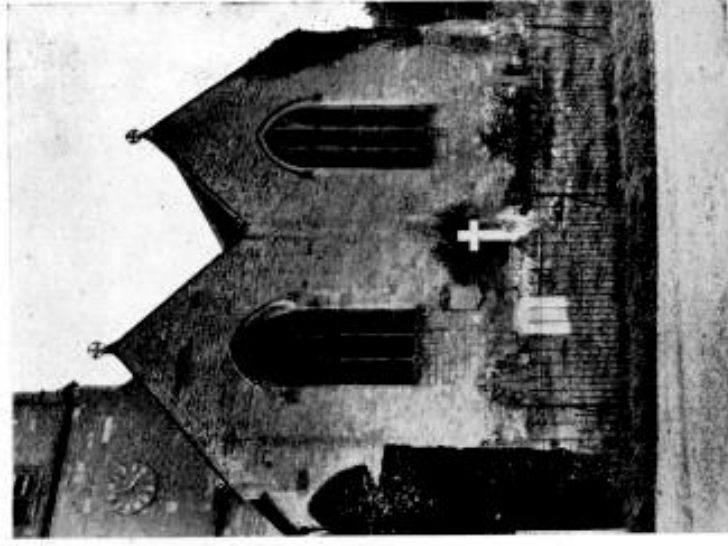
*Leominster Priory Church:  
South Aisle Window*

Fig. 12



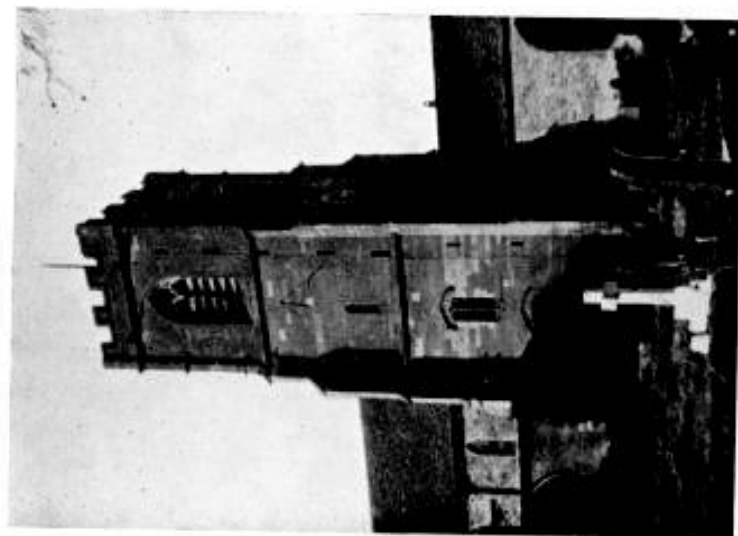
*Weobley Church: Quasi-Transept*

Fig. 13



*Much Marcle Church: East End*

Fig. 17



*Much Marcle Church Tower*

Fig. 15



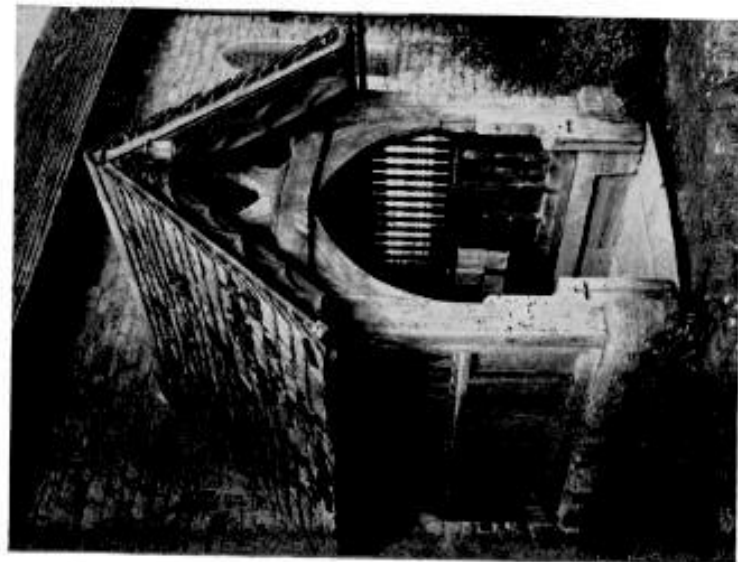
*Weobley Church*

Fig. 16



*Pembridge Church Tower*

Fig. 14



*Bishopstone Church Porch*



Fig. 19



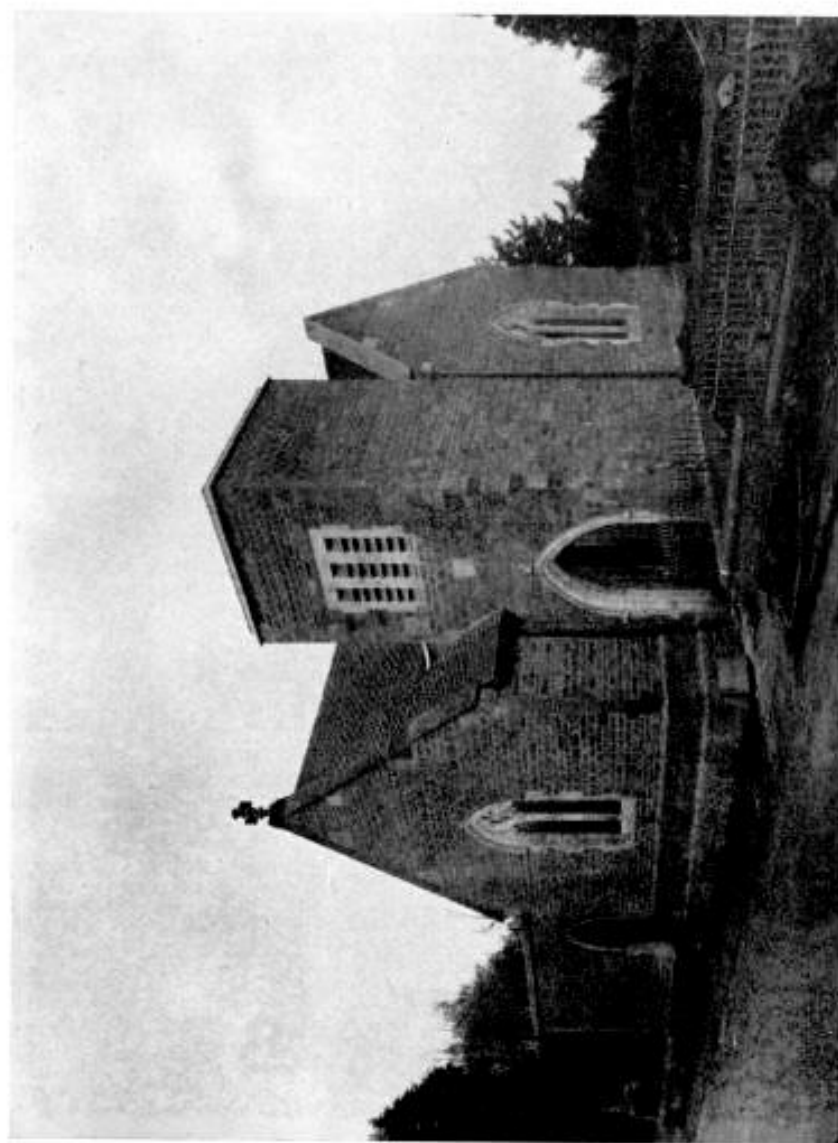
*Brockhampton Church*

Fig. 18



*Tyberton Church*

Fig. 20



*Wellington Heath Church*

The use of timber as an important building material declined here, as elsewhere, from the seventeenth century onwards, in part due to its extravagant use in earlier years; in part to the heavy demands for timber, especially oak, for shipbuilding; in part to the need for timber in iron-smelting and mining. Herefordshire was remote from those districts which could import Baltic timber.

Throughout the county Old Red Sandstone, varying in colour from grey to red and dark brown, has been extensively used for domestic building, particularly on the upland areas. Limited use has been made of some of the flaggy limestone beds, as near Aymestrey, and much more rarely of calcareous tufa. By the seventeenth century it had become in many areas as cheap to build a house of stone as of timber, and its use for domestic building became more general.

Some of the earliest use of bricks was in the construction of chimneys. In 1467 it was decreed that "No chimneys of tre be suffered but that the owners make hem of bryke or stone". In 1621 the law required that "No man shall erect and build up any chimney but only of bricke and to be builded above the roof of the house fower feete and a half".

Brick does not appear to have been used extensively until the seventeenth century when it gradually superseded timber and stone, becoming the fashionable building material of the eighteenth and nineteenth centuries. This is made evident by its general use in the large mansions of those days, while many timber-framed houses were re-fronted and modernized with brickwork, especially in the towns.

From 1784 to 1850 bricks were used as a basis of tax assessment—the number of bricks determining the amount of tax payable. This led to the making of larger-sized bricks found in nineteenth century buildings.

Brick filling is found in panels in some timber-framed houses of an earlier date, but it may generally be taken to have been a replacement of the original "wattle and daub" panels. This latter was the common filling for the timber-framed house, though in some outbuildings a survival of the interwoven lattice filling or "laths interwoven in a basket-like manner" may still be found without daub or plaster.

Roofing materials most generally found are stone, slate, or clay burnt tiles, with a limited amount of thatch. There is again close relationship to the local stone available. It is reasonable to believe that thatch was formerly much more common than at the present time, as for example in Eyton, where in the early nineteenth century it was stated that "all the cottages of the district had a covering of thatch" but where to-day only six of the older cottages are so roofed.

It is well to note that even as early as the thirteenth century thatch was discouraged in towns because of the damage by fire, and it was required by law (in 1212) that thatch should be white-washed as a precaution. By the eighteenth or nineteenth century thatching became outmoded. It was thought to be inferior because old, and so, wherever possible, it was replaced. At the present time straw thatching is found more frequently in the valleys of the Leadon and the Lugg, in the east of the county, than elsewhere.

Broom and rushes, commonly used for thatching in the twelfth century,

and all the other cruder types of thatch, have largely disappeared and have been replaced by tiles, slates, and more recently by corrugated iron. The changes have often been associated with raising the height of the building, and the addition of a second storey to cottage property. By the thirteenth and fourteenth centuries in the Border counties stone tiles were becoming fashionable. Middlebrook stone slates, used for roofing, are found where laminated rocks occur, and where thatch was difficult to obtain. When such stone slates were used walls, whether of timber framing or stone, had to have additional strength to carry the weight. In the timber-framed houses it led to heavier and usually more closely set timbers.

It will be best to consider the domestic architecture in regions, based on the principal river basins.

Because it is an area distinct from the rest of the county, there is justification for considering first the drainage of the northern bank of the Monnow. Here the parallel valleys of the Olchon, Monnow, Escley, Dulas, and Dore, together with the Worm brook drain to the Monnow itself, while the Garren brook joins the Wye between Goodrich and Whitchurch. In the south-west high ridges of Old Red Sandstone divide the river valleys and, as is to be expected, stone, or part stone, buildings predominate. In the records of the Historical Monuments there are no brick buildings prior to 1714 listed in this area. Roughly 63% of the listed buildings are of stone, and another 23% of stone rubble associated with timber framing. In the main, timber-framed houses are found in the open valleys, as in the Golden Valley at Dorstone, Peterchurch, Vowchurch and Bacton, and at Kilpeck, St. Devereux, Much Dewchurch and Little Birch.

Timber framing is infrequent and is rare in the Olchon valley, though a few examples occur at Craswall, Longtown, and Llanveynoe. In these cases the inter-timber spaces are more often than not filled with stone rubble.

The most usual roofing materials are stone tiles or slate, accounting for 85% to 90% of the buildings listed. Only four examples of thatch are noted, two in Abbey Dore and one each in Dewsall and Kilpeck.

Tile roofing occurs mainly in the Worm brook valley, in Much Dewchurch, and in the Golden Valley at Peterchurch and Abbeydore.

In the valley of the Garren brook, stone or part stone buildings predominate, being some 65% and 26% respectively of the existing buildings. There are no examples of wholly brick buildings prior to 1714. Timber-framed houses are for the most part found in the villages to the east of the basin nearest to the Wye valley, as in Hentland, St. Weonards, and Llangarren. There are no examples of thatched buildings, and the most usual roofing materials now to be found are slate, tile, or tilestone, though it must be borne in mind that these materials may have replaced earlier thatch.

There is every indication that these regions of the south-west of the county are less heavily populated now than they were some 150 to 200 years ago. The investigations of Mr. L. McCaw, M.A., reported in his paper in the *Woolhope Transactions* of 1937 on the Black Mountains, draw attention to the fact that this area has of late been one of progressive

de-population. There are many traces of ruined farms and farm buildings, most of which were stone built.

It is in this area that a certain degree of similarity to Welsh architecture may be noted. The isolated farmsteads and cottages have features in common with those of Monmouthshire, Brecon, and north Glamorgan. At Llanveynoe, Llangarren, and Craswall, for example, there are single storey farms reminiscent of the Welsh "long house", having central chimney stacks and a long straggle of cowbyres adjoining the house.

Further comparison can be made of some of the larger and more important stone houses with those of Monmouthshire, as, for example, Treowen, Killwch, The Waen, Ty Mawr, and other houses reviewed in the publications of the Monmouthshire and Caerleon Antiquarian Association in 1860 and 1861.

The central basin of the Wye valley from Hay to Hampton Bishop covers an area of the county in which timber framing is very general. Stone and brick buildings prior to 1714 were rare, being only some 10% of those recorded. A very large number of the houses are of timber framing and plaster. More rarely there is stone or brick nogging. Stone buildings are found in the higher parts of the basin to the north and south of the Wye. Most characteristic of the area, however, are the concentrated timber-framed villages of which Weobley, Eardisley, Brilley, Almeley and Kinnersley are well-known examples. In these villages there is only one stone building to about 14 or 15 timber-framed. Tile, slate, and tilestone are the most common roofing materials. Thatch is relatively rare, only some 5% to 6% of listed buildings being so roofed.

The city of Hereford lies within this area, but later mention will be made of some of the city's buildings.

In the north to south section of the Wye valley the proportion of stone-built houses is considerably higher, being about one house in every four. Brick-building before the early eighteenth century was very rare, as also was thatch as a roofing material, being only 2.6% of the houses listed.

In the Ross area stone was the predominant building material, though in Ross itself there are survivals of interesting timber work, with some elaboration of detail.

The valley of the Arrow, draining from the west to the Lugg and thence to the Wye, ranges from a hilly region near the border of the county to an extensive central alluvial basin. The western districts are characterised by stone buildings, but the area is mainly notable for the concentration of timber-framed villages flanking the alluvial basin. Over 90% of the listed buildings are timber-framed. Possibly Eardisland, Pembridge, and Dilwyn exhibit half-timber domestic work at its best in Herefordshire.

Thatch is found near to the alluvial basin and was probably more commonly used. Slate, tile and tilestone are now the most usual roofing materials, and have probably been characteristic of the marginal areas of the basin from early times.

The valley of the Lugg reveals very similar conditions. Timber-framing was general in domestic architecture prior to 1714, accounting for 94% of the listed buildings. The region includes Leominster and the fertile area around it. From relatively early times Leominster was a centre



of trade and prosperity, producing very favourable influence upon its domestic architecture. In this area of relatively more prosperous farming thatch has remained a more frequent form of roofing, approximately one house in every eight of those built prior to the eighteenth century being so roofed.

The valley of the Frome, in the eastern part of the county, is again an area where timber-framing predominates (being 95% of the listed buildings). There is very little use of brick prior to the eighteenth century. The distribution of the timber-framed buildings is general, but there are considerable concentrations of such buildings in some villages, of which Ashperton, Bishop's Frome, Tarrington, Much Cowarne, and the township of Bromyard may be taken as examples.

The sections of the county which drain to the valley of the Teme fall into five main districts. First, that in the extreme north-west, where timber-framed buildings predominate, being some 80%, except in Leintwardine, where there are many stone buildings dating from before the eighteenth century.

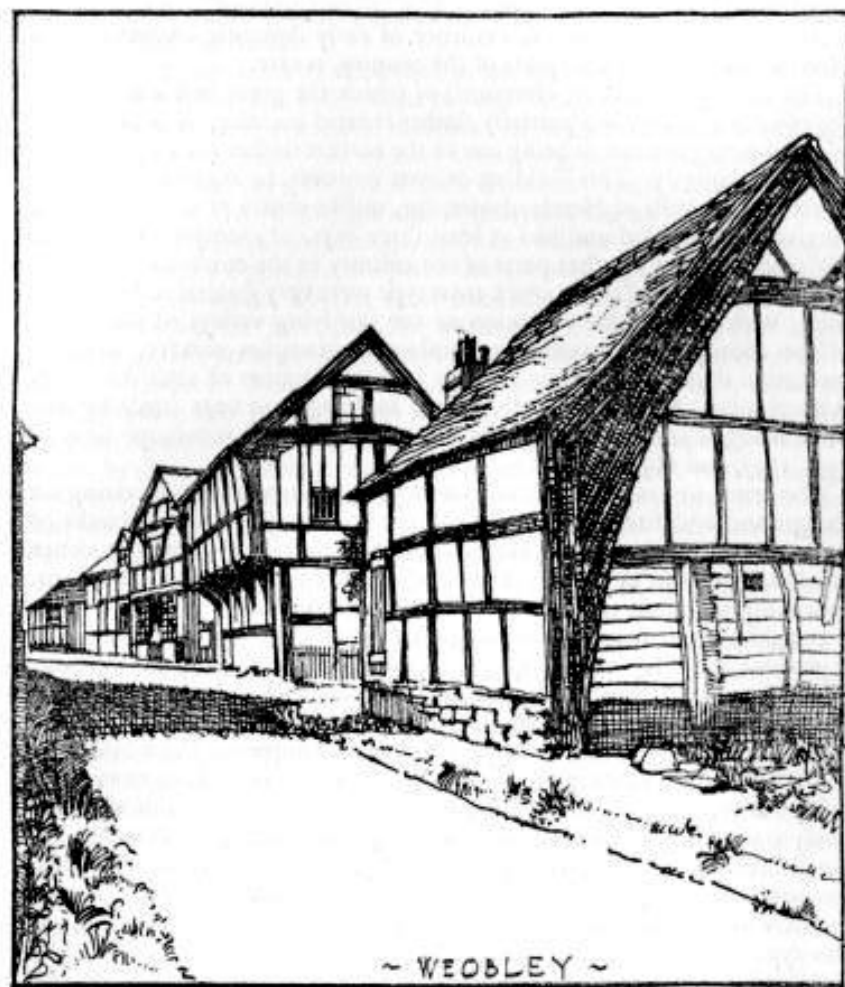
The remaining four marginal areas are all marked by a high proportion of timber-framed buildings, particularly around Brimfield (96%), Brockhampton (94%), and Colwall (98%). In all these districts prior to the eighteenth century brick buildings were rare. Thatch is only found as frequent roofing material in the Colwall area, where some 25% of the houses are thatched. Elsewhere tiles and slate, with more rarely tilestone, are the usual materials.

The valley of the Leadon in the east of the county was characterised by a marked predominance of timber-framed buildings, being over 90%, of which about one-fifth had brick nogging. While some 86% of the listed buildings had tile or slate roofing, thatch was recorded in about 14% of the buildings, being mainly in the districts of Bosbury and Eastnor. There are no recorded examples of tilestones.

No attempt is here being made to consider the early castles of the county, though from one point of view they could be regarded as falling within the category of domestic architecture.

The border situation of Herefordshire meant that these fortified sites were numerous and of them many remains can be studied, in fact there is almost better opportunity here than elsewhere for tracing the evolution of the early Norman castle. Strongly fortified sites lie mainly in the western half of the county or in centres of considerable importance dominating the major valleys, such as Dilwyn, Weobley, and "Pennebrugge" or Pembridge.

In natural sequence the fortified manor house followed, position and the unquiet times necessitating this degree of protection. Many were moated sites, as for example Brinsop Court. Treago Castle in St. Weonards may be taken as an example. The present building largely dates from the fifteenth and sixteenth centuries, but its general lay-out is typical of an earlier date, squarely built, with corner towers and an inner central courtyard. Buildings of somewhat similar type, now ruined, existed at Bronsil Castle near Eastnor, and at Penyard Castle near Ross, transitional in form



WEOBLEY

*Broad Street from North-East: 14th century and later buildings with a "cruck" in foreground*

between the true castle and the unfortified manor. So also were Croft Castle and Hampton Court near Leominster.

It is not possible to make more than passing reference to a limited number of particular buildings.

As has already been noted, evidence of early domestic architecture in Herefordshire, as in other parts of the country, is rare.

The Bishop's Palace in Hereford, of which the great hall was built in the twelfth century, is a partially timber-framed building on a stone base of outstanding interest as being one of the earliest timber halls now surviving in the country. This building cannot, however, be regarded as typical of the timber halls of Herefordshire, for, unlike others of which portions survive, it was aisled and had at least three bays. It exemplifies a type of building common in other parts of the country in the twelfth century.

Timber structures of the cruck-truss type were very general in Herefordshire, with the possible exception of the low-lying valleys of the centre of the county. A considerable number of examples survive, some of mediaeval date, others later. Year by year the number of such dwellings is decreasing. A detailed study of such buildings has been made by Mr. F. C. Morgan and recorded in the *Transactions* of the Woolhope Club in 1936, 1937, and 1938.

The cruck or crutch truss consists of pairs of curved beams resting on the ground and fixed together at the apex. Naturally curved trunks of trees were normally used. In some buildings in the county there is evidence of as many as four or five crucks in the same building, as at Pound Farm near Kington, while two or three were quite common.

It is difficult to date such buildings exactly, but this type of construction is ancient and very widely spread throughout the country as a whole. There is evidence that in Herefordshire it continued to be used as late as the seventeenth century, much later than was usual, but accounted for by the relative isolation of the county. Very good examples of cruck buildings of the fourteenth century are to be found at Old Court, Longtown, and at Ty Mawr, Longton; of the fifteenth century at Great Treaddow, Hentland; while there are examples of this type of building at Peterchurch, Bredwardine, Weobley, Dilwyn, Eardisley, and in many other places, sometimes in cottages and farms, sometimes in barns.

There would seem to be a considerable concentration of buildings of this type towards the north-west of the county, and in the areas round Pembridge, Kington, and Weobley. This may be due in part to the fact that the region is more remote, and less influenced by changes of construction and of fashion, and the buildings may be of relatively late date.

In Wales taxation was by the "cruck", and was known as pillar tax.

Later developments of the cruck buildings led to more elaborate treatment of the roof timber, and to the development of the aisled hall, already referred to in the Bishop's Palace in Hereford.

Timber-framed building developed from these relatively simple beginnings. It is relevant to note that a considerable number of centres in Herefordshire by the fourteenth century had charters granting the right to hold markets or fairs. Such centres, for example, were Wigmore, Lyonshall, Kingsland, Kington, Hereford itself, Bromyard, Ledbury and

Leominster, to name but a few. Outstanding was Ross, with the right to hold four such fairs annually. It is not surprising, therefore, that such places became important centres of population where examples of domestic architecture from the fourteenth and succeeding centuries can be found more or less abundantly.

Ross, more than most of these places, has suffered at the hands of the renovators. The house of the "Man of Ross" is a reminder of the type of building formerly much more in evidence. In fact we are told in a writing of 1826 that Ross was not "like country towns in general", but more closely resembled the "trading streets of Bristol, the houses being various and the shops frequently showy", which relief "enlivened the narrow streets".

In Weobley, Dilwyn, Pembridge, and other villages, as well as in many isolated farmsteads, portions of timber-framed buildings of the fourteenth and fifteenth centuries survive, some but little altered. The timbers are heavy, while for the most part the wattle and daub filling forms large irregular spaces. In some cases more recent brick nogging has been substituted. There are numerous examples of this type in Weobley itself, as in Bell Square and the Red Lion Hotel. In the late fifteenth and early sixteenth centuries the timber-framed buildings are more generally characterised by close-set framing. Generally speaking, however, wide spacing was more characteristic of Herefordshire and Worcestershire, while the close-set timbers are general in Cheshire, Shropshire and Lancashire. Herefordshire is somewhat unusual in having so many examples of early buildings with wide, irregular spaces. Timbers came to be more carefully dressed and for a time more extravagantly used. It is true that in remote and less heavily wooded areas there was a tendency to re-use old timbers, re-trimming them, thus making them less heavy in each subsequent using. Preservation of the timber was attempted by tarring, emphasizing the contrasting effect of black and white. Where left untreated, a practice more usual in East Anglia, the silvery grey of the timber gives a very pleasing appearance, as may be well seen in "The Ley" near Weobley.

There are many instances of close-set framing in Herefordshire, frequently used in extensions of old and more open-spaced work. Examples are near the centres of prosperity, Ross, Ledbury, Leominster, Hereford, Pembridge and Bromyard, where new fashions in buildings were more quickly followed, and where re-building was more readily undertaken. The distribution of close-set framing is, however, very wide, and good examples can be found at places as far apart as Abbey Dore, Llangarren, Bredenbury, and Bosbury.

Timber framing continued to be characteristic of building in Herefordshire well into the seventeenth century, later than was usual in more accessible regions, and especially those more readily open to influence from the continent.

More attention came to be given to convenience and comfort as the need for defence diminished. In the larger buildings the central or great hall was retained with living rooms and kitchen quarters opening from it, more convenient than the planning of the eighteenth and nineteenth century mansions with their long passages and remote domestic quarters.

A glance at the maps illustrating the distribution of buildings of the



16th and 17th centuries in Herefordshire shews that there was something of a boom in building. Many of these buildings were timber-framed, frequently of open spacing either square or rectangular. Many were of a size we should class as cottages and show few features of special interest. Here and there, as in a small house at Mansell Lacy, there is introduced a little decorative work in the arrangement of diagonal timbers and in detail included in a gable. Generally speaking, the impression made by these buildings is that they advanced little beyond the level of utilitarian requirements.

Timber-framed barns and outbuildings were common, sometimes associated with weather boarding; while at Withington Farm, Kilpeck, there is a good example of the use of loosely woven lattice-basket filling without daub or plaster, probably a type of filling formerly much more common.

Flooring of the smaller houses and cottages improved, and ceased, for the most part, to be of hard beaten earth covered with rushes.

In the latter part of the sixteenth century and during the seventeenth century there were, however, examples of more elaborate timber work, and of buildings on a larger scale. This can largely be attributed to the period of security and prosperity associated with the Tudors. A new, wealthy merchant class was emerging able to undertake extensive building. Labour was cheap and the materials used were largely local. The carpenter continued to be the chief house builder. Timber was preferred to stone, even when the latter was plentiful, because it was found to be more manageable in construction, and allowed development of larger windows, another feature of buildings beginning to receive attention at this time.

Buildings of this more elaborate type are to be found in and near Hereford, Leominster, Ledbury, and Ross. Some very fine examples have been lost, as for example the Market Hall of Hereford, built in 1576 and demolished in 1862 regrettably on the sole ground that it was old-fashioned. It has been described as one of the "choicest and noblest buildings of half-timber work in England". Records of it, with measurements, were preserved in the drawings and writings of John Clayton in 1840<sup>1</sup>. The Town Halls of Ledbury and Leominster, much smaller and less elaborate, are good examples of the period; the latter was the work of the famous John Abel, whose influence spread from Herefordshire to Monmouthshire and Brecon. He died in 1674, aged 97. A similar market hall in Weobley was destroyed in the nineteenth century.

In Hereford the Old House, with its moulded bressummers, carved barge boards, pendants and scrolled brackets provides an illustration of the more elaborate seventeenth century work. Originally the last house but one of Butcher's Row, it alone has survived, though in the late eighteenth century there was urgent pressure that it should be demolished as it "detracted from the appearance of the fine open market square". It was restored in 1882 and certain modern additions were made, but its general aspect is little changed.

"The Ley", about 1½ miles from Weobley, is a very good example of a Tudor house dated 1589, and is one of the most frequently photographed

<sup>1</sup>Plans and drawings are reproduced in *Woolhope Transactions* for 1949.



EARDISLAND: STAICK HOUSE 14th century with 16th and 17th century additions



DILWYN: LUNTLEY COURT 17th century



LUCTON SCHOOL

Early 18th century



and quoted of the Herefordshire houses. The timber framing is in large squares, the timbers weathered to a silver grey. It has a central hall, with slightly projecting wings. The gables have enriched barge-boards, and some of the plaster panels over the central projecting bay window are decorated with pomegranates and other details. Like many houses of this period, it faces north. A southerly aspect was considered to be unhealthy and enervating.

Fenhampton nearby is a similar though rather less elaborate building, gabled with a central porch. It has possibly been stripped of its barge boards.

The "Chapel Farm" at Wigmore is an unusually complete example of early fifteenth and sixteenth century work. The original central hall was converted into two storeys in the sixteenth century, a change very frequently made in buildings at this date.

Luntley Court, near Dilwyn, is probably of early seventeenth century date, though greatly altered and enlarged when the porch was added in 1674. There is some ornamentation of timber work in one of the gables, but the richest decorative details are in the balusters and arches of the porch.

Staick House in Eardisland may be noted as a building shewing growth and development from the fourteenth century wing and great hall to the later wings of the sixteenth and seventeenth centuries. The timber framing is exposed, and is in large squares throughout.

This list of individual houses could, of course, be greatly lengthened; nevertheless it remains true, in spite of specific exceptions, that the vast majority of the timber-framed buildings in the county are simple in design, and relatively unadorned.

The general plan of many of the larger houses was that of an H, the central hall, typical of a mediaeval building, forming the central link. A second storey was frequently introduced into the central hall, as at Staick House, at a later date. Other frequent plans followed roughly that of the "half H", T or L. The H plan in particular lent itself to the development of gables, together with dormer windows, each in turn with its gable. The frontage of "The Ley" at Weobley is a good example. Consequent upon this was the development of barge boards for weather protection. These later became an important and enriched decorative feature of houses, for example at Rudhall, near Ross, and in the gatehouse at King's Pyon.

Writing of Rudhall in 1587, Fuller remarks that "much timber was needlessly lavished" upon it, but that "now regular pieces of architecture" were being erected.

Two features of the timber-framed houses should be noted: first, that the overhanging storey in the western counties was made to project much further than in the east of England.

Secondly, the development of gables. The rectangular house had necessarily two gabled ends. The development of the H plan of house greatly increased the possible development of gables to at least four or five. Dormer windows became popular, and "The Ley" is a good example of the increase in the number of gables.

Gate houses were typical of many of the manor houses and large farms in the transitional period, when defence was becoming less essential but some degree of precaution was desirable. Two outstanding examples in Herefordshire are to be found at Lower Brockhampton and at King's Pyon.

The gatehouse at Lower Brockhampton by Bromyard is dated as mid-fifteenth century. It is a square timber-framed building of two storeys, standing in line with the moat, also a defensive device. The timber frame is exposed both outside and internally. The roof is interesting, with its central tie beam and queen posts, diagonally set. There is a staircase of which the detail dates from the seventeenth century. At King's Pyon the gatehouse at the Butthouse embodying a pigeon house is dated 1632. It is a square, timber-framed building, with a second storey, projecting on all sides. There are enriched, arcaded panels and barge boards, providing a rather more elaborate example for a gatehouse, not dissimilar to that at Stokesay. These gatehouses are now all too rare, and worthy of preservation. Formerly they were in all probability a usual feature of the semi-fortified manor site.

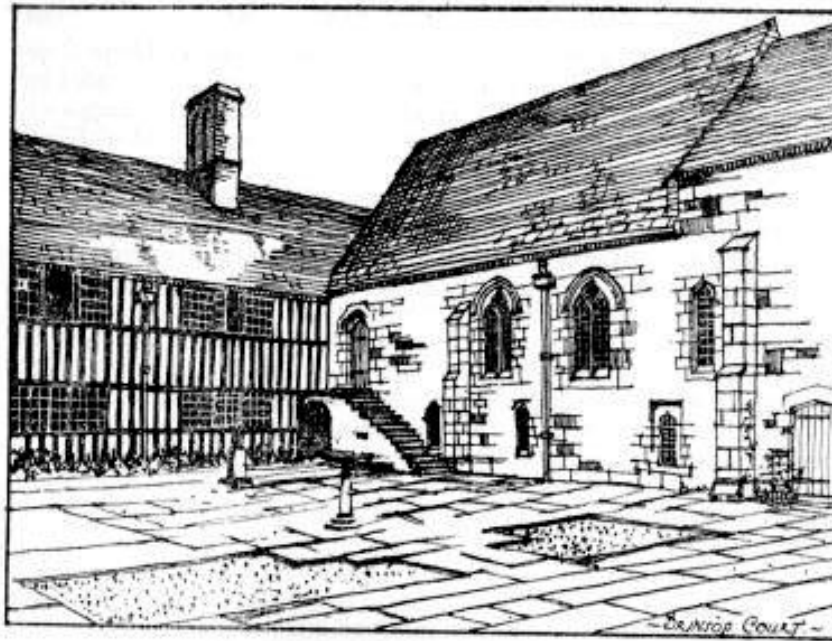
A more peaceful aspect of domestic architecture was the pigeon house and dovecote. Reference will be made to these under stone buildings, but some of later date were timber-framed and were an integral part of the domestic establishment. The pigeon houses of timber-framing are usually square in plan, frequently roofed with wood shingles. Examples may be found at Much Cowarne, Much Marcle, Luntley, and Kentchurch.

An exceptionally large chimney is a marked feature of most of the early buildings, being very noticeable in the smaller houses, whether timber-framed or stone. Usually placed at an end of the building, it has almost invariably a stone rubble base. The upper portion is often clearly a later addition, and is frequently of brick. In fact brick makes early general appearance in chimney construction, being required by law as a measure of protection against fire. In some cases chimneys are found at each end of the building and more rarely in the centre, though that is characteristic of Welsh farms of similar date.

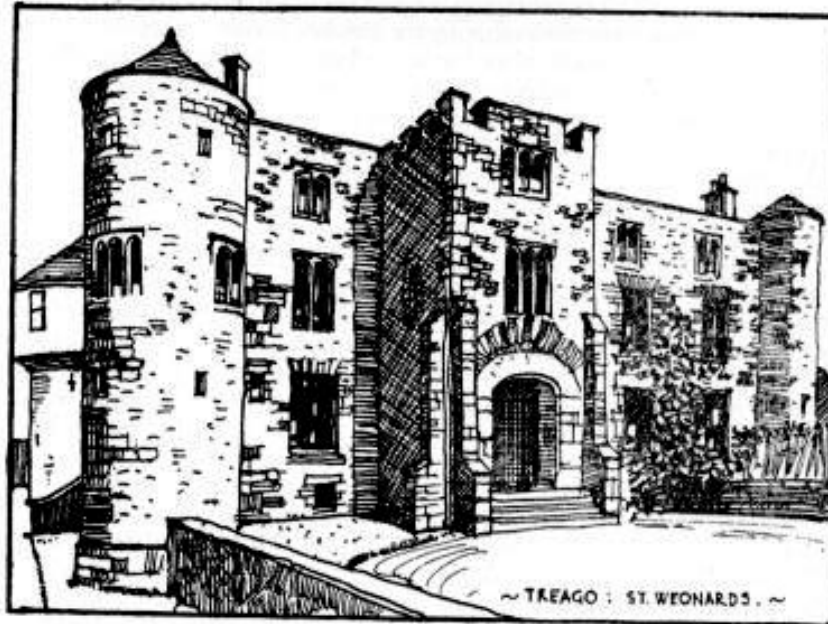
It has been noted that the stone buildings of the county are closely associated with the upland areas, and it is not surprising, therefore, that many of them are of simple construction. The isolated farmsteads of the west and north-west in particular provide examples of somewhat crude rubble structures, usually roofed with stone slates, and usually, at least in part, of only one storey. Examples may be found in Craswall, Llanvynoe, and Bredwardine. In the first two instances, the central chimney is to be found.

Many stone buildings in the west and north-west, and also in the extreme south-east of the county, give abundant examples of the incorporation of early work in later buildings. At times this is ecclesiastical, as at Flanesford Priory, near Goodrich, where a small house of the Canon's Regular of St. Augustine, founded in 1346, now forms part of the barns of a farmstead. (This fate had befallen it as early as 1826.) The building is of local sandstone, while the roof is tiled.

At other times parts of an earlier fortified manor house have been



BRINSOP COURT  
Early 14th century with later additions



TREAGO, ST. WEONARDS  
A 13th century site. Present buildings 15th and 16th centuries

adapted or extended at a later date, as for example at Gillow Manor, Hentland, where parts of the building date from the fourteenth century. Similarly at Kentchurch Court there is evidence of the adaptation of a fourteenth century fortified site to the more peaceful purposes of the sixteenth and seventeenth centuries.

Brinsop Court may be taken as an interesting example of a fourteenth century manor house, largely stone built, though with a little later timber framing of the sixteenth century. Windows of the fourteenth century, as well as doorways, remain, and though there has been some refronting, and the addition of some brickwork, the house, externally, retains many of its early features. The former banqueting hall, now a granary, adjoins the barns. The line of the former moat may be traced in the present water gardens, while its extensive outbuildings and barns give a clear idea of the self-sufficiency of such an establishment in bygone centuries.

Other fourteenth and fifteenth century stone buildings are to be found at Longtown, Old Court, Ty Mawr, Olchon Court, Rowstone, Walterstone, and elsewhere.

Of stone buildings of later date, Pontrilas Court at Kentchurch may be taken as an example. The south-west and north-west wings were built between 1630 and the end of the century. The gables, lofty chimneys, and mullioned windows make it worthy of notice.

At Weston-under-Penyard, Lower Weston House, though incorporating a little of an earlier timber-framed building, is largely of sandstone ashlar, with tiled roofs. The west front has a symmetrical arrangement, with a central, three-storeyed porch.

In general plan there is some similarity between these symmetrically planned, stone-built houses and the brick-built mansions of comparable size.

Circular stone pigeon houses are a common feature of the older domestic sites, often associated with timber-framed houses. Good examples are preserved at Garway<sup>2</sup>, Kimbolton, and Richard's Castle, and many of these circular pigeon houses would seem to be of mediaeval origin.

By the end of the seventeenth century timber-framing was becoming less usual, and in many districts it was superseded either by stone or brick, according to the locality and the material most conveniently available. Partly this was a change of fashion, the timber-framed house being regarded as old-fashioned, but another factor was the heavy drain upon home supplies of suitable timber. The opening up of the turnpikes and, later, of the canals and waterways decreased dependence on purely local building materials and encouraged the use of brick and tile, in place of timber-framing, stone, and roofing materials such as thatch and stone tiles.

In the eighteenth century and early nineteenth century a new type of domestic architecture was emerging in part due to the more settled days following the turmoil of the Civil Wars. Trade, prosperity, and security were increasing, and, in spite of the alarms of the Napoleonic wars, it was on the whole a period of extensive building. The emergence of a new

<sup>2</sup>Garway, dated 1326, has been thoroughly restored through the offices of the Ministry of Works.



wealthy class led to the building of large mansions and the planning and development of large estates. There was a boom in agriculture, favouring the emergence of a landed gentry, who encouraged the building of gracious well-planned houses, and gave attention to interior decoration and furnishings. It was a phase common to the country as a whole, and may be noted in Herefordshire, especially in the richer parts of the county, and the sections most readily in contact with, and open to, influences from other English counties.

The wealthy Whig families became great land owners. In many cases they rebuilt or greatly altered the estates they inherited or purchased, as at Stoke Edith, Holme Lacy, Sutton, and Foxley, to give but a few examples. In the Leominster Guide of 1808 Eyton Hall is described as an agreeable seat. Originally the dwelling house was nothing better than a cottage, and, like all the other cottages of this district, had a covering of thatch and a timber framework, the vacancies in which were filled up by laths interwoven in a basketlike manner and plastered. Dr. Cranke, the owner, turned the old building into his kitchen and "erected a plain fabric of brick, which has recently been enlarged, beautified and improved by its present owner".

Ideas were on the grand scale in architecture, and continental influence was considerable, resulting in the spread of classical design. These trends reached the west slowly and in modified form, nevertheless the large, substantial house, more often than not of brick, was characteristic of the eighteenth century Herefordshire.

Nunupton, near Brimfield, may be regarded as an example of a transitional stage and of the early use of brick in a remote part of the county. It shows little influence of the changing fashions beginning to affect some parts of the county. Sixteenth century portions of the house are of close-set timber framing. The seventeenth century rebuilding and additions are of brick, and there is a very pleasing combination of form and material. The gables have a curvilinear outline, while the chimney stacks are an important and interesting feature.

As the seventeenth century progressed the prevalence of brick building, especially in important establishments, increased. A relatively simple example may be studied in the vicarage of Much Marcle, built in 1703. It is a symmetrically designed building of brick with stone dressing and a stone plinth. The doorway is central, and shows some elaboration of detail.

As well as the great houses, the smaller domestic work must also have continued. Many of these mansions were substantial, square brick buildings. At Foxley the new house was a "square plain mansion of brick"; at Meend Park "a large plain structure of brick". A similar building may be seen at Bredenbury Court—a large rectangular house, with buildings in the rear. Of three storeys, it is built of mellow brick, with a stone parapet with balusters. The central doorway is flanked by bay windows.

At Brockhampton near Bromyard, a large rectangular red brick house with stone facings, the product of prosperity and ambition, lies not far from the older timber-framed house of Lower Brockhampton, which it was built to replace. Frequently the new mansion was erected on a site near to the ancient manor house. In other cases the old house was either

demolished, as at Burghope House and at Eaton near Leominster, or modernised and refronted, as Eywood and Croft Castle.

Many of these mansions are worthy of detailed description. Shobdon Court, described somewhat cursorily in the Leominster Guide of 1808 as a "square plain mansion of brick", is a large building of red brick with stone and cement dressings. It was built in the early eighteenth century but there were considerable alterations and some additions in the nineteenth century. In general plan it was symmetrical and rectangular. Judged by modern standards, it would scarcely be dismissed as "square and plain", but one may bear in mind the criticism made by Miss Florence Nightingale of a house used by members of her family in the nineteenth century—"It was quite small, it only had 15 bedrooms".

Luton School, built in 1708 by John Pierrepont for "educating, apprenticing and portioning a certain number of poor children of the neighbouring parishes", is a dignified rectangular building. There have been later additions, but the original building has been but little altered.

No account of the great brick-built mansions of Herefordshire would be complete without reference to Stoke Edith and Holme Lacy.

Stoke Edith, built in 1702 by Paul Foley, was on a half H plan. A double stairway approached the central doorway about which the building was symmetrically arranged, with four windows either side. The building was of brick with stone dressings. The fire of 1927, which gutted the main building, did not destroy the outhouses, which retain many interesting features. The building has since been partly restored. The "man of quality" rebuilt his house, but in this case, as in many other cases, it crippled the resources of the family. The library and many of the furniture treasures of Stoke Edith have been bought and are now housed at Montacute House, Somerset. They are now taken over by the National Trust and can be seen by those who visit Montacute.

Holme (or Home) Lacy incorporates an earlier house. It is built of sandstone ashlar with Bath stone dressing and is of late seventeenth century date. We are told the mansion was extensively altered in the nineteenth century, and a "classical portico" was added on the north side. The seventeenth century panelling and staircase have been removed, but the plaster ceilings remain and should be noted.

Elaborate plaster work, copied from the Italian and often executed by Italian craftsmen, was characteristic of the period; Holme Lacy and Eye Manor provide the finest examples in the county. Dingwood, Ledbury and Walford-on-Wye offer further examples, while various buildings in Hereford itself preserve good specimens of decorative plaster work.

Wormbridge provides a good specimen of a small Queen Anne manor house. The fashion for modernising was not confined to the large houses, and in the towns, particularly in Hereford, Ross, Ledbury, and Leominster, many buildings were refronted in brick. Frequently comparatively uninteresting brick fronts have replaced or covered earlier timber-framing of which traces may be found at the rear of buildings or within them.

The Gothic mode is mentioned in a reference to Garnstone, near Weobley. On the order of Samuel Peploe, high sheriff of the county, there was in 1827 "lately erected a splendid mansion house in form of a castle,



ornamented with what are called Gothic Towers and battlements". It was said to be "a magnificent fabric" and "when completed will be the pride and triumph of the county; its roof is slated and covered with a newly invented composition". Downton Castle, a mansion of stone, was ornamented externally with Gothic towers and battlements, while internally there were "Grecian ceilings, columns, and entablatures".

Eastnor Castle, the work of the early nineteenth century architect, Robert Smirke, has been described as a "Gothic design developed from a classic plan", and also as a great house whose exterior and interior did not harmonise.

Time and space do not permit of more than passing reference to interior detail. As a whole the county is not rich in panelling, but there are many instances where panelling of an earlier date has been re-used, as for example at Wcoble, where fifteenth century panelling is found in a later house.

The Rodd, near Presteigne, with its panelled rooms and elaborate overmantels of the early seventeenth century, is one of the best examples in the county. Rudhall, near Ross, Brockhampton-by-Ross, Much Marcle, Grendon Bishop, Ledbury, and Bosbury, are other places where richly developed carved overmantels and considerable panelling are to be found.

Staircases provide an interesting study in interior development, mainly in the use of timber. Some of the most interesting examples date from the sixteenth to the eighteenth centuries. In earlier examples a solid beam of timber is used to form the tread of the stairway. The elaboration of balusters and newels is of later date, and interesting examples may be found at Much Marcle vicarage, at Dingwood and at Holme Lacy. Earlier sixteenth century examples remain at The Rodd, Hergest and Croft Castle.

Doors, doorways, windows and porches in their gradual development and elaboration are other details worthy of fuller treatment. The development of door furniture from wooden latches to the elaborate iron latches and hinges in themselves warrant attention.

Glazing was not regarded as essential until the sixteenth century, and it is doubtful if it was used at all in domestic work before the thirteenth century. That it was regarded as a luxury may be deduced from the orders of Henry II who specifically ordered for his own apartments and for those of the Queen "that they may be not as windy as it used to be".

By the nineteenth century domestic architecture was declining, though more attention was given to the housing of employees than had been the case before.

Regency work appears to be rare in Herefordshire and village architecture may be regarded as dead. As a national force and as an expression of local art, it ceased many years ago.

A recent letter in *The Times* observed that "If Local Authorities enforce demolition orders at the present rate, then in a comparatively short time few of the old cottages, which are such a beautiful feature of the countryside, will remain".

In conclusion I wish to acknowledge the great assistance I received from Miss E. W. Jones, M.A., in the preparation of the material for this paper.

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*Distribution of 14th century fortified manors and other lesser sites*





*Distribution of 16th century buildings*



*Distribution of 17th century buildings*





*Distribution of early 18th century buildings*