

STUDENT I.D. 9829283

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THE UNIVERSITY OF WARWICK LAND

CHASING SHADOWS:

AN ASSESSMENT OF AERIAL PHOTOGRAPHIC ANOMALIES
AND THEIR ARCHAEOLOGICAL SIGNIFICANCE

DISSERTATION: SANDRA BARNES
TUTOR: Dr. Stephen Hill
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AERIAL PHOTOGRAPHS

Number	Year	Principal Area
0019	1953	Banjo shaped enclosure.
5096, 7 & 8	1946	Enclosure boundary, Westwood to Westwood Heath.
5255	1946	Westwood Mounds.
0183	1962	Westwood Mounds and the main university campus.
5103	1947	Westwood circular anomaly.
4328	1948	Cryfield House and Toashill Close.
5109 & 10	1947	Cryfield Grange.

INTRODUCTION

Is it possible to discern early settlement activity on the landscape from aerial photographic evidence? The answer to that question is a very positive yes. Approximately 6000 years after the construction of the first long barrows, many still exist for our wonder and conjecture, as do numerous round barrows, megaliths, stone circles, sunken ways, hill forts, field systems and other relics of past times that have survived for thousands of years all over the country. The existence of these wonders can be clearly viewed on aerial photographs right up to the present day.

The question here is to ascertain whether it is possible to make any convincing statements about early settlement, on places such as the University of Warwick land, by studying aerial photographic evidence. The initial supposition is that it would be difficult to ascertain anything conclusive from a landscape that has been continuously utilised and altered by settlement and agriculture for millennia, in particular over the last sixty years. The purpose here is to challenge that supposition by relating the known archaeology to aerial photographic anomalies and look for further signs of early settlement that, although unproven, we do reasonably expect to exist. It is hoped that archaeological finds already discovered will slot effortlessly into the discussion. Although it has been the intention of this project to concentrate on evidence for prehistoric settlement, the Roman and Medieval influence on University land is of prime importance and must therefore be taken into consideration.

We already have a wealth of detailed historical and archaeological information covering many areas of the university land. Much of the historical evaluation has been driven by the existence of the medieval Stoneleigh Ledger Book, written in the fourteenth century by a retired Abbott of Stoneleigh Abbey. The archaeological evaluations¹ have primarily taken place in response to phases of development on the university campus or have become the focus for research projects² and further education courses.

THE LANDSCAPE

The University of Warwick land covers approximately 290 hectares south-west of Coventry city and north of Kenilworth town. (fig 1) It lies mainly in the valleys of the Canley and Kirby brooks, which flow north/south to join Finham brook at Millburn Grange and on down to Stoneleigh, the Sowe mouth and eventually to the Avon which flows past Stoneleigh Abbey. A third brook also runs in from Bockendon Grange, through Whitefield Coppice and on to join Canley brook at Cryfield Grange and the fourth major brook on the university land brings water from the west, through Crackley Wood, direct to Cryfield Grange. There are also two smaller streams that join the flow, one entering university land at the southern margin of Whitefield Coppice and another, which makes a brief appearance on the Ordnance Survey map, passes down through the Science Park and on to, what is now, the university Claycroft residences to join the Kirby brook. The monks of Stoneleigh Abbey controlled the flow of all these brooks at Cryfield Grange to drive water mills between Cryfield and Stoneleigh. The existing mill dam at Cryfield Grange is the finest example of medieval dam building to exist on the Warwickshire landscape. At the time of the Stoneleigh Estate Map, 1766 (fig. 2) there were also at least twenty individual field ponds on the university land. Clearly there was no lack of two of the primary requisites for early settlement; water being one and areas of alluvial soils for scratch plough cultivation the other.

The highest points on the university land are the Gibbet Hill campus at 95 meters above sea level³ and the triangulation point north of Cryfield House at 98 meters above sea level. The northern boundary of the Westwood campus also rises to 95 meters above sea level and a small section of Roughknowles wood, just on the edge of university land is at 100 meters above sea level. These points on the landscape and their relative height in relation to the valleys and the brooks that run through the university land are important when considering early settlement.

The predominant soil type throughout is Tile Hill mudstone with some impersistant sandstone. The distinctive red, course grained, Kenilworth Sandstone appears in quarried pockets at Cryfield House and Gibbet Hill⁴ There is evidence for pottery industry at Tocil Wood and also off site at

Kirby Corner and Canley. Pottery fragments have been found throughout the university land from the lightweight, friable and thin structure of Iron Age pottery (**fig 3**) to Roman ware and also Medieval. Many of these finds display the characteristics of local clays.



Figure 3. Iron Age pottery fragments collected from the Cryfield House ridge in 2003

The aerial photographic search for indications of early settlement on the University of Warwick land necessitated the viewing of three hundred and thirty five aerial photographs at the National Monuments Record in Swindon. A number of the clearest and most relevant were then ordered as laser copies for further intensive study and comparison. Aerial photographs inevitably vary in clarity and usefulness to the archaeologist. They depend on the time of day taken, the season, the climate, land usage at the time, altitude (low is not necessarily the best,) the quality of the photographic equipment used, the expertise of the operator and the direction of the flight sortie. The images chosen for study were photographed in 1946 to 1948, 1953, 1962 and 1989 and they span periods of considerable development activity on the campus area. A series of Ordnance Survey map overlays were compiled to plot the position and direction of each of the sixty-nine sorties before viewing the collection. Photographic frames for each sortie varied in number from one to nine. With such a huge number of aerial references spanning forty-three years of development on the landscape it has been possible to discern both subtle and major changes. Aerial photographic evidence was compared with maps from the present day and also the nineteenth and eighteenth centuries. Areas of known archaeology were also taken into consideration and some interesting statements can now be made regarding the possible outcome of further archaeological

investigation. The maps used throughout this study are the Ordnance Survey Explorer series Number 221⁵, sections of the six inch 1887 O.S. sheets 21sw,21se,26nw and 26ne together with a tracing from a section of one sheet, XXV1. 3, of the detailed 25 inch Ordnance Survey of 1905. Also used was Brian Best's brilliant interpretation of the 1766 Stoneleigh Estate Map.

For ease of identification an enlarged section of the Ordnance Survey map (**fig. 4**) together with an overlay tracing, depicting the size and positions of aerial photographic anomalies (**fig. 5**), will be used and the land divided into four main areas for debate. Area 1 will cover the Westwood Campus. Area 2 the Main Campus and its immediate environs. Area 3 will cover Cryfield House Farm, now the residence of the Vice Chancellor and Area 4 will attempt to unravel the secrets of Cryfield Grange. It was at Cryfield Grange that the farming of the vast majority of the university land was controlled between the twelfth to the mid sixteenth centuries, by the monks of Stoneleigh Abbey.

THE MISSING MOUNDS: BARROWS IN CONTEXT

In 2002, during the construction of an all-weather games pitch, it was at last possible to state unequivocally that part of the Westwood Campus of the University of Warwick once housed an Iron Age settlement of considerable size. It has been known for some years that a 'banjo' shaped enclosure was situated on Rough Close, appearing very clearly on aerial photograph No. 0019 taken in July 1953.⁶ A very limited investigation of the enclosure produced fragments of 'Wappenbury' ware and an iron axe-head, attributed to the late Iron Age or possibly Roman era. During the summer of 2002 the turf was stripped from a further area of Rough Close for the construction of an all-weather games pitch. A rich palimpsest of round house foundation circles were revealed in varying sizes (**fig. 6**) leading to an assumption of continuous occupation on the site for some considerable time.



Figure 6. Roundhouse platforms uncovered at the Westwood site in 2002.

Aerial photographs Nos. 5096, 7 and 8, taken in 1946 provide the only firm evidence of this study for a settlement boundary contiguous with the roundhouse platforms at Westwood. Earthworks appear to have continued from the corner of the Westwood 'triangle', approximately following the line of the present road, to Kirby Corner and beyond towards Westwood Heath. The opposite direction, towards Canley, is less clear but it appears to follow the line of the modern road and from the photographic evidence used here there is no indication that the boundary extends south into the main campus area. The extended occupation span, coupled with aerial photographic anomalies indicating further settlement on neighbouring fields (**fig. 7**), leads us to one of the most important questions yet to be answered on the University of Warwick land: where are the prehistoric graves?

The possibility for the existence of prehistoric burial sites on the university land has long been a cause for conjecture and the apparent absence of visible barrow structures or cremation cemeteries does not relate to the wealth of known archaeology on university land. The most plausible explanation is that agricultural practice, development or woodland cover may have destroyed or disguised the evidence for their existence.

In 1951, the archaeologist, Jacquetta Hawkes wrote that 'The territory bounded by the Severn, the Trent and the Avon, is indeed quite without any prehistoric monuments that any traveller would want to step out of his way to see.' She continued to say that the Iron Age fort at Wychbury near Stourbridge, now in the West Midlands since county boundary changes, was the 'only notable site in such an archaeological desert.'⁷ Bertram Windle, on the other hand, who was published fifty years earlier in 1904 and centred much of his research on Ordnance Survey records, quoted six known round barrows in Warwickshire at Brinklow, Tachbrook, Coombe Abbey, Hartshill,

Seckington and Wolstone⁸. An enormous amount of research has taken place since then and in 1974 Nicholas Thomas, also basing his work on Ordnance Survey records,⁹ listed twenty-eight possible round barrows, some of which he admitted had already disappeared from the landscape. The Sites and Monuments Record for 2003 listed six round barrows for Warwickshire at Bishops Tachbrook, Wasperton, Radford Semele, Barford, Kenilworth and Stoneleigh. From this discrepancy in records it would appear that the numbers and positions of round barrows in Warwickshire is still open to debate. There is now an ever-increasing incidence of prehistoric finds in Warwickshire and this has established the existence of a considerable settlement of the Avon valley from at least the time of the Middle Neolithic (c 3800 to 3000 BC.) It necessarily follows that there must therefore have been a number of both long and round Barrows on the Avon valley landscape including the University of Warwick land.

Before making the assumption that barrow mounds may have existed on the University Campus a broad understanding of their construction, usage and typical placement on the landscape, elsewhere in the country, is needed for comparison and to strengthen the argument. The most obvious difference in barrow building is between the rectangular, wedge shape of the Neolithic long barrow and the circular round barrow, which belongs mostly to the Bronze Age but can drift either way on the time line into the Neolithic and the Iron Age. Although long barrows can vary in size and shape they follow a general construction style, being usually slightly wider and higher at one end where there can appear an obvious entrance portal described by archaeologists as 'horns.' The construction method varies according to available materials but often involves the mounding up of material from two ditches dug either side of the barrow site or of stacking up the initial turf, soil and rubble from an adjacent quarry site. Many in fact appear close to natural outcrops of rock on the landscape.

Existing long barrows, almost without exception, appear in prominent positions on the landscape rather than sited close to known settlement areas. The most unusual long barrow shape is that of the bank barrow, almost exclusively found in South Dorset, which can extend to as much as

half a kilometre but more usually is between two and three hundred meters in length and can be either straight or curved. Long barrows are usually referred to as either earthen, having inner chambers of timber construction, or megalithic, with chambers constructed of large stones. The contents of long barrows tend to be a cultural mixture of flint, pottery, animal bone, geological matter and disarticulated bone belonging to more than one human skeleton. A complete skeleton would be very rare and the barrows appear to have been the combination of prehistoric family or community crypt and celebration or ceremonial site.

Round barrows nearly always started as a single whole interment or cremation with signs of celebration or ceremony at ground level in the form of domestic debris. They have been classified into six self-explanatory shapes: bell, disc, bowl, saucer, pond and cone. The bulk of Barrow excavations took place prior to the twentieth century when in many cases they were poorly recorded or not recorded at all and artefacts, particularly the human remains, were damaged, discarded or have been lost since their discovery. Over the years archaeologists have discovered both inhumations and cremated remains within round barrows. An individual barrow may have contained either form of interment, both forms or even none at all. In her book on British Barrows Ann Woodward relates in detail the 1991 excavation of a round barrow at Deeping St.Nicholas in Lincolnshire.¹⁰ It is cited here as an exemplary example of recent rescue archaeology undertaken; in this case before gravel quarrying destroyed a barrow. It also highlights the complexity of barrow structures and how much information can be gleaned, with the use of modern technology, from barrow excavation. The barrow had at the time been ploughed almost flat, almost certainly the fate of any round barrow on the University of Warwick land. The first burial within the Deeping St.Nicholas barrow was that of a three to five year old infant within a coffin and was dated to the Early Bronze Age beaker period. Before the infant burial the ground had supported a timber trapezoid structure followed by intermittent concentric circles of wooden posts, up to nine deep in places and also a shallow ditch. The site was subsequently mounded with earth about fifty years later, after the timber posts had decayed. After this a series of interments were made within the

mounded structure together with periods of replenishing the mound and even inserting a wooden palisade to shore up the sides. Radiocarbon dating of artefacts found at the barrow indicates an activity sequence of wooden structure, burial, posts, mound, ditches and wooden palisade, together with further burials and cremation pits that lasted for approximately five hundred years. The most telling feature of the barrow was the fact that no single burial had been disturbed in any way by subsequent interments which in turn raises the question of how the burials remained in received memory within the family or community for that length of time. It presupposes a memory span equivalent to a burial that was made in 1504 being remembered by a family or community to the present day.

Not all barrow mounds are adjacent to major earthworks or obviously constructed solely from the excavation material of contemporary ditches or pits. An assessment, in the 1990s of the mound material of an early Bronze Age round barrow sited on the King Barrow Ridge near Stonehenge¹¹ revealed that a major component of the structure was stacked turf. The minimum estimated area of stripped turf contained in this barrow was the equivalent of 1.2 hectares (3 acres) of adjacent grassland. This somewhat surprising discovery gives rise to the possibility that earth barrows were constructed over previous ceremonial/burial sites only when the land was stripped and cleared for agriculture it also gives a clear indication that the area was grassland and not wooded¹² in the Early Bronze Age. Turf mounding may even have been a form of symbolic act and one that was repeated over time as more land was cleared for extra fields. We do know that many barrow structures were added to or re-modelled after their initial construction.

Round barrows have been dated from the late Neolithic, c.2000 BC to the Middle Bronze Age, c.1500 BC by which time almost all burials were cremations, either contained in urns or simply buried in pits. From the Middle Bronze Age remains were either dug into existing barrows, set in the ground around existing barrows or became a part of the smaller simpler bowl barrows that have been attributed to the era. Most of the securely dated bowl barrows are located in Southern England where the presence of Deverel-Rimbury pottery within their structure has facilitated the

dating process. The archaeological sites from which the pottery takes its name are the Deverel Barrow and the Rimbury flat cremation cemetery, both in Dorset. Evidence that Iron Age man used barrows to inter their dead is quite rare but some still exist in East Yorkshire with the odd example further south. Those that have been securely dated to the Iron Age are square ditched barrows and radiocarbon dates for artefacts found in them range from c400BC to c100BC. Later Iron Age burials appear to have taken place close together in sizeable, flat cemeteries either on flat ground between earlier mounds or in separate cemeteries sited along the floor of a shallow valley or on a gentle slope. They often appear close to trackways or linear earthworks.

There are clearly insufficient known barrow structures or cemeteries to account for all prehistoric burials in fact it would appear that only a very small percentage of the probable population were interred in, under or near to a barrow. Added to which there are the many barrow structures that contain no human remains whatsoever. With modern scientific techniques, such as radiocarbon dating at our disposal, it is now possible to evaluate archaeological finds with more certainty than ever before. The analysis of soils, pollens, insects and charcoal sealed within previously undisturbed mounds can now tell us that even the barrows that contain no human remains do have deliberate deposits of domestic debris. These deposits have been identified as the possible result of feasting or seasonal celebrations that took place prior to barrow construction, their analysis may even help us to understand local agricultural practice contemporary with the barrow structures.

THE PREHISTORIC EVIDENCE

Artefact evidence in the form of worked flint is continually being discovered within Areas 1,3 and 4 on the university land, either as the result of controlled and systematic field walking or simply chance finds, as illustrated by (**fig. 8**) a fine flint blade discovered in a flower bed on the Westwood Campus by Dr. Stephen Hill.



Figure 13. Selection of flint finds from the Cryfield House ridge 2003.



Figure 14. Selection of Roman finds from the Cryfield House ridge 2003.

The ridge has obviously been a prime settlement site but apart from possible Prehistoric/Iron Age settlement, indicated by a structural post-hole feature uncovered during trial trenching prior to the erection of a new sports pavilion on the southern slope below Cryfield House, we have uncovered no further evidence for prehistoric or Roman settlement so far. Aerial photograph 4328 shows a patchwork of small early field alignments on The Rose Close and The Treehill Slang both of which are on a gentle slope to the north-west of the mound.

The area of the mound will continue to generate intense interest as the search for the source of the Roman mosaic tiles goes on. By making comparisons between aerial photographic evidence from photograph No. 4328, 1948 and No.022, 1989, it is now possible to state that the Roman tessera we are finding, appears to be coming from an in-filled pond site, however the material is unlikely to have travelled far. A significant number of farm buildings were levelled between 1948

and 1989, the most promising of which was situated midway between the in-filled pond site and the mound, a distance of less than a hundred metres.

THE MAIN UNIVERSITY CAMPUS: AREA 2

The clarity of the anomalies in Area 2 of the Main Campus and their appearance on a number of the photographic records lends weight to the verity of their existence. The stream leading in from the Science Park direction is probably an offshoot of the Canley Brook that rejoins its flow at Tocil Wood. Much of the activity to be seen on the main campus photographic frames appears to be changes to the flow of this stream and also the Kirby brook around the three meadows. The interpretation maps used in this study have all depicted the flow of these brooks as they appear on the present Ordnance Survey. The presence of flowing water and ponds in this area would explain much of the settlement activity. There is a banjo shaped enclosure on the northern edge of Kirby Brook and a second, head to tail with the first, with only the top half now discernible. They both butt up against the Kirby brook just the same as the enclosure at Westwood and are sited south of the Claycroft residences. One other distinctive enclosure shape appears on the same side of the Kirby brook. The 'head' of the enclosure is partially beneath the new Mathematics and Statistics building however the bulk of the anomaly occupies green space towards the Claycroft residences.

The opposite side of Kirby brook, in Area 2, is now the hub of the main university campus. There are three main enclosure anomalies identifiable here, the first starts under the Engineering building, crosses under Library road and finishes beneath Humanities. Parts of its boundary lines extend under the Modern Records Centre and the Library building. The second is a linear anomaly of two almost parallel lines, enclosed at both ends, it starts between Humanities and car park 7, crosses the main university road on the bend and ends beside one of the Tocil residences. The Third enclosure area appears to be focussed on two previous ponds and is largely beneath the Arts Centre, The Students Union and Whitefields residences. It has an associated linear feature that runs down through Rootes residences, past the edge of the tennis courts almost as far as the new lakes. In the

same area of university land there is an extensive anomaly of differing appearance on Rough Close, adjacent to the farm buildings of Tocil Farm House. It would now be partially beneath the most southerly of the Arthur Vick residences and appears on aerial photograph No. 0183 taken in March 1962, which is also the clearest reference for the other anomalies in Area 2.

The Canley and Kirby brooks meet at the north-west corner of Tocil wood, flowing down its edge and on to Cryfield Grange. It is the woodland floor that gives us the closest insight into the complexity of the university landscape and its uses from prehistoric times. The wood is one of the oldest pieces of documented woodland in the country and is protected and managed today by the Woodland Trust. Within Tocil wood is an upstanding sub-rectilinear enclosure that underwent a small exploratory excavation in 1985/86, in response to a road-widening scheme that threatened its survival. Fragments of imported Roman pottery ware were found at the base of the rampart wall indicating a late Iron Age date for occupation.²¹ Pollen samples taken from beneath the rampart wall indicated a woodland setting of predominately oak with hazel undergrowth; there was no holly or cultivated cereal pollens. Techniques in the dating of soil structures have been perfected over the last twenty years, such as Optical Stimulated Luminescence dating, which provides the date of the last exposure to sunlight of buried soils. Optical Dating was used in 1994 to date the chalk figure on White Horse Hill, Oxfordshire²², which has been a feature on the landscape since the late Bronze Age. The same technique could be used in the future to date the soils beneath the rampart of the enclosure in Tocil wood. Amongst the collapsed material of the rampart was a quantity of clay daub, ash and pottery fragments including kiln wasters.²³ Much of the pottery retrieved during the 1985/86 excavation was attributed to the medieval era but on subsequent re-evaluation of the material it would appear that a substantial amount could be more accurately assessed as Iron Age.

The Stoneleigh Estate Map indicates that Tocil Wood was, at that time, called Potters Field Coppice. Clay puddling pits and water channels leading from the Canley brook can be clearly seen today and the quantity of twelfth and thirteenth century pottery shards, together with clay daub, ash and kiln wasters all indicate an extensive pottery industry in the area. Burnt daub from the eastern

margins of the wood may indicate the presence of kiln sites in the neighbouring field although none have been located to date. The presence of sandy clay near the surface was ideal for both pottery and brick production on the university land and also close by at Canley and Kirby corner. Local place names relate to the utilisation of the clay soils and the Stoneleigh Estate map also shows a Potters Field Meadow, next to Potters Field Coppice and two areas called Brickyard Close one at Cryfield Grange and the second west of Whitefield Coppice.

Field names can provide clues to ancient landscapes and many remain in use over centuries. They most commonly derive from the topographical features either of, or close to the field, its common usage or its ownership. As language use changes, together with pronunciation, words can either take on a different meaning or be changed to something phonetically similar. For example, 'Hay' is the derivative of the Anglo Saxon word 'Häg' meaning 'a net set around the haunt of an animal, especially of a rabbit.'²⁴ Both Great Monks Hays and Little Monks Hays are shown on the Stoneleigh Estate Map close to Cryfield Grange and the monastic Grange at Cryfield would have relied on a regular source of meat from rabbit. The area is now Birches Wood Farm and part of Crackley Wood nature reserve. A further example of an Anglo Saxon word that may well have continued, in a modified form, to the present day is Touse. The word meant 'to pull or to haul' and the 1766 map shows Toashill Close straddling the Canley Brook on the lower slopes of Gibbett Hill just as the land starts to climb steeply to the Gibbet Hill ridge.

Toashill Close contains an aerial photographic anomaly of considerable clarity and interest. Out of all the photographs viewed, it appears on only one, taken in 1948, Number 4328. The anomaly lies along the western edge of the Canley brook and temptingly fulfils all the main criteria for a linear Iron Age cemetery, being on a gentle slope close to a valley floor and adjacent to a known prehistoric sunken way. It is also close to the rectilinear Iron Age enclosure within Tocil Wood and the running water of the Canley Brook. Oldings meadow is only a short distance away and the suggestion of a place of great antiquity being close by is intriguing, was Oldings Meadow perhaps a site of earlier round barrows or other earthworks on the landscape? We have no absolute

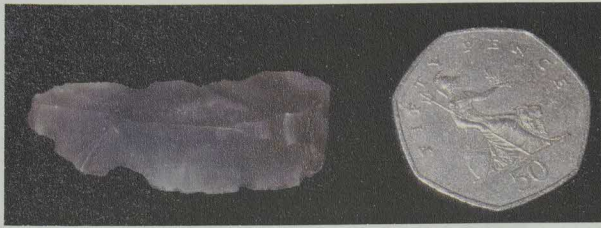


Figure 8. Flint blade from the Westwood Campus

The Lithic material scatter appears to concentrate on a North/South axis through the university land although in fairness the central campus area is now heavily developed, landscaped, or grassed all of which significantly reduces the possibility of surface finds. In further support of prehistoric activity there are two stretches of sunken or hollow way, one appears at the bottom of Gibbet Hill and the other runs down the western edge of the main residential area of the Westwood campus. Aerial photographs pick up a track again behind Cryfield House, which appears to pass down through the centre of the land to Cryfield Grange. The trace is faint and in places disappears altogether but, with the exception of the Westwood stretch that runs beside a known medieval field boundary, most traces would have been ploughed out due to the enlargement of field areas over the centuries.

The discovery of numerous flint artefacts, from microliths to sizeable hand axe fragments and beautifully worked blades and scrapers, has all added to the argument that prehistoric man was most definitely present on the University of Warwick land. In the 1930s Professor Shotton began postulating the accessibility of the Warwickshire landscape for trade routes during prehistory. His article relating prehistoric finds around Coventry to dry soils began to alter the previous impression of Warwickshire as a region of heavy forest or marshy land,¹³ and therefore inaccessible to both peaceful trade and warlike invasion. Professor Shotton's search for dry soils which would have supported lighter vegetation and which often occur together with outcrops of pervious rock, led him to the Gibbet Hill ridge and the discovery of a re-trimmed stone celt (**fig. 9**).

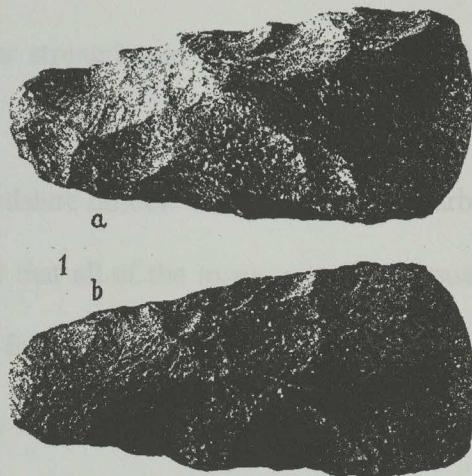


Figure 9. Re-trimmed Celt of Craig Lwyd rock from Gibbet Hill as recorded by F.W. Shotton in *'Stone Implements of Warwickshire'* (Trans. B'ham. Arch. Soc. 1943-44) P. 44. Image is not reproduced to scale.

The axe was found in 1933 and subsequent testing by the British Museum proved it to have originated in Craig Lwyd, Carnarvon. The rough stone or finished axe had travelled some 185-Km (115 miles) from Wales to Warwickshire. The discovery of the Gibbet Hill celt led strength to Professor Shotton's argument that Warwickshire was in fact accessible to Prehistoric man and the Midlands were not barren of early archaeology as once thought. In 1949 he wrote a further article¹⁴ describing the discovery of another Graig Lwyd axe on the grounds of the Training College at Canley. (fig. 10)

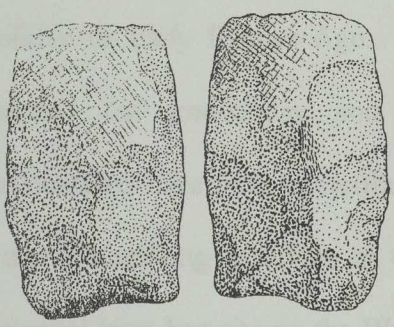


Figure 10. Broken, chipped and ground axe from Canley. As recorded by F.W. Shotton in *'Graig Lwyd axes from the Coventry neighbourhood'* (Proc. Cov. Nat. Hist. & Sci. Soc. 1949) P. 76. This axe was found on the Westwood site of the university. Image is not reproduced to scale.

This is particularly relevant here as the College previously occupied the Westwood campus of the present university. A third Graig Lwyd axe was found at Baginton in 1939 which, together with other stone axes from diverse sources and also flint axes, numbered nineteen known axe finds in Warwickshire at the time of Professor Shotton's article.

Prior to his study of stone axes Professor Shotton published a journal article detailing the discovery of flint implements from twenty-three different sites in the area around Coventry.¹⁵ It is almost impossible to date stone and flint artefacts unless they are found with other contemporary dateable material. The samples from Professor Shotton's survey were all collected during field walking and had no established provenance but he clearly felt at the time that much of the so-called

Neolithic stone-working found in Warwickshire was actually done in the Bronze or Iron Ages. He further strengthened his argument by pointing out that no long barrows or megalithic monuments were known in the County, other than the King Stone, part of the Rollright Stones, on the Oxfordshire border. He attributes the barbed and tanged arrow heads found to the Bronze Age and stated that all of the many microliths, usually attributed to the Mesolithic age, c 6000 to 3500 BC, came from sites on high ground with sandy dry soils and none near valley bottoms. To further his theory of trade routes across Warwickshire he concluded that the flint axes found were almost beyond question from imported flint cores as local gravels would not yield flint either large enough or of high enough quality to produce the tools. The chalk with flint outcrops to the south, the east and the north-east were considered the most likely source of the flint with the closest being 96 Km. (60 miles) away.

Professor Shotton's detailed research on the presence of Warwickshire trade routes has paved the way for a more recent article. In 1974 in Nicholas Thomas's Gazetteer, as mentioned earlier regarding barrow structures,¹⁶ he also details fifty one known flint or stone axes attributed to the Neolithic or Early Bronze Age. Our own research on the University of Warwick land has also expanded our knowledge and understanding of Prehistoric movement and settlement in Warwickshire. We now know that microliths are just as likely to be discovered in valley bottoms by our fieldwalking exercises at Cryfield House and Cryfield Grange. Also the discovery of a substantial Iron Age site on the Westwood campus, together with a smaller sub-rectilinear Iron Age enclosure within Tocil wood, is broadening the evidence for occupation on valley sites with heavier wetter soils.

The pinnacle of Professor Shotton's career was the discovery in September 1984 of four hand axes at Waverley Wood Farm Pit¹⁷ during quarry work. The quarry is 7km (4.3 miles) southeast of the university in the parish of Bubbenhall. Professor Shotton was able to establish that the site was part of an ancient river channel that ran from the southwest Midlands through Warwickshire towards East Anglia, before the last major glaciation 478,000 years ago and also before Britain was

divided from the main European land mass. The river was named the Bytham by its researchers and its shores were probably one of the most important highways for the human colonisation of this country.

The four hand axes were made from North Wales rock and were found together with mammal bones, plant fossils, insect remains and mollusc shells. Amnio-acid dating techniques were used to date the shells of the fossilised molluscs giving a figure of at least 500,000 BC. The Waverley Wood site is of national importance due to the proven antiquity of the artefacts and joins such sites as Boxgrove in West Sussex, High Lodge in Suffolk and Kent's Cavern in Devon as one of the earliest indications of human activity in the country. It is hugely important for the understanding of the Midlands Palaeolithic and brings a new level of interest to our interpretation of the University of Warwick land that lies such a short distance away.

Research conducted over the last twenty years indicates that the major expansion in stone axe production, during the late Neolithic and early Bronze Age was concentrated at two main sites. These were Graig Lwyd in North Wales and Great Langdale in Cumbria from where the axes were being distributed over a very large area.¹⁸ Such a dominance of stone axe production in the northern half of the country lends considerable weight to the hypothesis that the area was more influential and heavily populated than previously thought, and that this trend continued at least until the early Bronze Age.

AN ASSESSMENT OF AREAS 1 AND 3

All the evidence submitted here presents a strong case for settlement on University land prior to the Iron Age but so far we have no concrete evidence from archaeological research and the search for prehistoric burial sites still meets with continual frustration. The most obvious long barrow sites, gleaned from 1940s to 1960s aerial photographic evidence, are two rectangular mounds on the Westwood site, Area 1. The mound on the western edge of the site fulfils a number of key criteria for long barrow construction, the first being that it appears close to a prehistoric

track. In the 1946 aerial photograph No.5255 the prehistoric sunken way that passes north to south beside the mound clearly bows around the structure, as does the equivalent boundary marked on ordnance survey maps from 1888 to the present. Frustratingly the 1766 Stoneleigh Estate Map does not include the northern third of the Westwood campus. The mound in question is definitely wider and higher at its northern end, presenting a classic wedge shape. The shadowing on the aerial photograph reveals a dip and two radiating ridges that could be interpreted as the long barrow feature of a horned or scooped out entrance area. The second mound was sited at the northeast corner of the Westwood triangular campus shape. It was aligned east west and appears to have been shortened at the western end, prior to the 1946 photograph, resulting in a mound with its highest point closer to the centre of the structure. The second mound, which also had flanged ridges at the eastern end, disappears from our photographic record after 1962.

In the year 2004 it appears rather unlikely that two long barrows dating from c.4000 BC could have existed on the Warwickshire landscape reasonably unscathed until 1946. They were hemmed in, on their northern boundary, by Coventry's urban development and shared a site that had obviously been levelled and graded for the erection of Ministry of Works hostels during the Second World War. Nevertheless the possibility does exist and should be taken into consideration in the light of future development or landscaping. The southern tip of the site also still contains earthworks of a less defined nature, the 1946 aerial photograph shows this area as two separate triangular shaped earthworks. By 1953, air photograph 5256, shows the first of a range of new buildings on the site and air photograph No. 0183 taken in 1962 depicts the re-building that had taken place for the new Teacher Training College on the Westwood site. The 1962 aerial photograph shows the earthworks at the southern tip of the site reduced in size and probably flattened somewhat. The mound on the western margin of the site had been reduced around its margins and probably at least a third of the southern end had been flattened at an angle to accommodate a new building. The second mound was still visible in 1962 but, as mentioned earlier, has since disappeared from the photographic record although there is still a large mound of

soil behind the Institute of Education building. The only record for a possible round barrow on the Westwood site appears as a circular anomaly on aerial photograph 5103, 1947 and would now be beneath car park 14 at the entrance to the Westwood campus. Any late Bronze Age or Iron Age flat cremation cemetery on the Westwood campus could already be lost forever due to development but the search continues. During the summer of 2003 an extensive area of the northern university land boundary, next to the western Westwood campus boundary, (fig.11) was subjected to geophysical survey in order to extend our knowledge of areas close to the recently discovered Iron Age settlement.¹⁹ There was a large over burden of topsoil used to level the football pitches in the area surveyed but the resistance meter still managed to highlight what may be part of a settlement boundary. (fig. 12)

AREAS OF STUDY LOCATION MAP

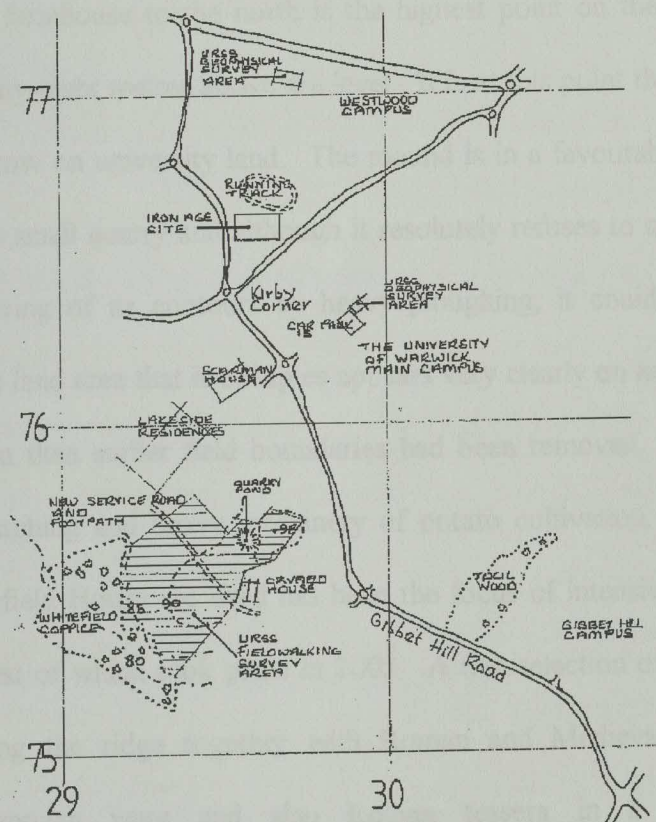


Figure 11. Areas of field-walking and geophysical survey carried out in 2003

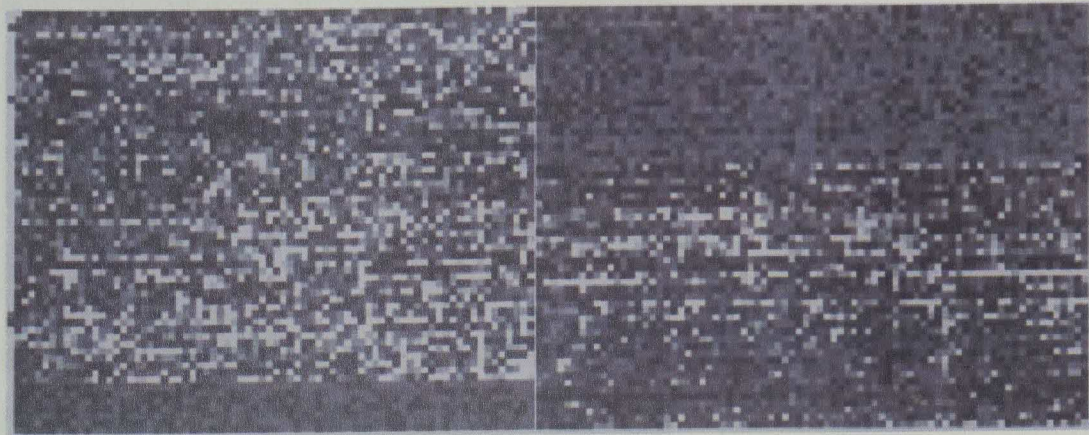


Figure 12. Results of the Westwood site geophysical survey carried out by Teresa Langlands, university physics undergraduate, in 2003

Area 3 of this study is the site of Cryfield House, once Cryfield Farm. The farmhouse dates from the 1820s and contains some original features from an earlier property.²⁰ Immediately behind the farmhouse to the north is the highest point on the university land, at a triangulation point of ninety-eight metres above sea level. It is at this point that a case can be put forward for a third long barrow on university land. The mound is in a favourable position on the landscape, it is sited next to a small quarry and although it resolutely refuses to appear on any aerial photographs, due to the blurring of its contours by heavy ploughing, it could very definitely be a long barrow mound. The land area that it occupies appears very clearly on aerial photograph 4328, 1948 and shows that even then earlier field boundaries had been removed, it is now arable and has suffered the deep ploughing and heavy machinery of potato cultivation. The ridge on which the mound and also Cryfield House are sited has been the focus of intensive fieldwalking exercises over the years, the latest of which took place in 2003. A fine selection of prehistoric worked flint has been collected along the ridge together with Roman and Medieval pottery fragments, including a piece of Cistercian ware and also Roman tessera in a variety of colours. (figs. 13 & 14.)

aerial photographic evidence for round barrows on the university land but some interesting anomalies do appear on the aerial reference for Cryfield Grange. Due to their often low profiles on the landscape they were easy to plough out (fig. 15) and are difficult to identify once razed.



Figure 15. Example of a surviving, low profile, disk barrow. One of the Lambourn Seven Barrows, Lambourn, West Berkshire. Author's own photograph 2004.

Levelled round barrow sites are ephemeral but when they do appear they present as ring ditches from the air. One further point of interest in the general area of Toashill Close is a dark pit mark on the eastern edge of Cryfield Meadow, next to Oldings Meadow, and visible on figure 17.

CRYFIELD GRANGE: AREA 4

Continuing south through the university land and following the flow of the brooks, which meet at Cryfield Grange we enter Area 4. This is another area of intense aerial photographic anomalies but unlike Area 2 on the main university campus this is still predominately agricultural and wooded land which therefore continues to offer a real opportunity for further archaeological research on the ground. To the east and south of Cryfield Grange are clear indications of a deserted medieval village together with an irregular shaped area of ridge and furrow ploughing, still visible in 1947 on aerial photograph 5110. Historical evidence from the Stoneleigh Ledger Book states that the villagers of Cryfield were moved to Hurst when the Cistercian order first settled at Cryfield Grange in the mid twelfth century. The monks subsequently requested a move to Stoneleigh due to noise disturbance at Cryfield from the Kings Highway. Stoneleigh Abbey was officially established as a monastery in 1204 with the manorial rights of Stoneleigh and all its lands

The monks constructed a complicated and extensive water system at Cryfield Grange (**fig. 16**) to harness the power of the three brooks that converge just south of the present farmhouse. There has been extensive historical and archaeological research conducted into the establishment of the Cistercian monastic grange at Cryfield, together with the ponds, dams and mills that were operated by the monks and their lay brothers²⁵. In this study there has been no attempt to draw on the historical and archaeological evidence that has already been put forward for the water system. The evidence presented here is purely based on the interpretation of aerial photographs and maps available to the author at the time of writing and may differ from previous research. The only photographic reference for this area are two frames Nos. 5109 and 5110, from the same flight sortie which took place in 1947, therefore no aerial comparisons can be made for the last fifty-seven years.

At the time of the composition of the Stoneleigh Estate Map in the eighteenth century the brook that originally fed the system from the West, through Crackley Wood, was omitted from the map. It does however appear on the 1887 Ordnance Survey sheet that indicates the direction of flow along the canalised section on the southern edge of Park Field Meadows. The entire water system was obviously developed over many years and had to cope with changing climatic conditions in order to keep the mill wheels turning and the fishponds productive. There is clear evidence for water backup areas in times of drought and safety outlets in case of flood. The most interesting area is the Park Field Meadows to the west of the pond and dam system. On the aerial photographs it is clear from the altering density of colour in the area that the entire meadow has been flooded, probably repeatedly, perhaps to save the surrounding land from danger or possibly as a traditional water meadow. The flow from Brook 3 appears to have been divided either side of the meadow, the original flow route to the north and a canalised section along the southern margin of the meadows. The canal is absolutely ruler straight which is unusual compared to the rest of the canalised sections of the water system at Cryfield Grange and could therefore have been constructed either much earlier or later than the main system. It appears that Brook 3, from

Crackley Wood, could be diverted to join the mill race and the main flow of water to Millburn Grange or alternatively run directly to Dam 3 further south towards the Kenilworth Road. Much of the original course of the brook, together with the third dam had been ploughed out by 1947 and it would appear that the water flow had been permanently diverted to join with the other two brooks south of Dam 2. It may even have become an insignificant source of water prior to the eighteenth century having possibly been robbed of its power further up-stream.

Sizeable sections of the two aerial photographs depicting Cryfield Grange are very dark and unreadable but the remainders of the frames possess startling clarity. We know from the collection of surface artefacts from the plough soil that the area has been host to man from the Mesolithic to the present day and there is also clear aerial photographic evidence for small rectangular and square fields on the Pinfold Fields and Old Horse Close.

The dating of field systems is almost impossible unless there is a clear field boundary such as a lynchet or bank, that can be excavated for dateable evidence, or known archaeology on neighbouring sites that can justifiably be proven to be contemporary with the fields themselves. Proof for a settled population and early farming techniques is constantly pushing these events further back into the Neolithic as our evidence and knowledge grows. Christopher Taylor²⁶ cites an excavation at Avebury in Wiltshire that revealed evidence for 'crook-ard' ploughing, beneath the South Street long barrow. Carbon 14 technology proved the crosshatch, scratch ploughing to have taken place in 3000 BC or a little later. Overall there is now a firm conviction that prehistoric fields were widespread over large areas of England by at least 2000 BC underlining the fact that much larger areas were in cultivation at that time than previously thought. The evidence for fields on steep hillsides that have not been subsequently ploughed indicates a demographic pressure on land and food production by 2000 BC, together with an altogether different picture of the landscape from that previously assumed. It appears that in the Bronze Age large areas of arable land were divided into rectilinear or square field systems together with huge areas of pasture, not on a piecemeal basis as gradual clearings in surrounding woodland, but many hectares at a time.²⁷

Evidence exists in some parts of the country that this land was bordered by long continuous earthen banks and scarps, indicating organisation and communal effort beyond our previous assumptions.

It would now appear certain that throughout the Bronze Age and by 1000 BC at the latest, lowland England was a fully developed agricultural landscape. The same small rectangular or square fields existed for millennia until the gradual introduction of the Roman heavy plough with its 'coulter' frame, iron 'share' and 'mould-board' that turned the soil over. The new ploughs cut deeper allowing the ploughing of land to take place in one direction only, the fields gradually became bigger, the rectangles longer and the characteristic ridges and furrows began to appear. The principal point is that agriculturally led changes to our landscape were unquestionably a slow, gradual process which will make the aerial photographic evidence of small rectangular and square fields at both Cryfield House and Cryfield Grange difficult to date without archaeological evidence for contemporary occupation close by.

The quantity of Roman pot shards collected from the south facing slopes of The Fourteen Acres and Old Horse Close, together with Pinfold Fields and Hither Old Horse Close is sufficiently significant to warrant a search for evidence of a Roman period dwelling or dwellings in these areas. Aerial photograph No. 5109 has clear anomalies in both places, one on the northern edge of Cryfield Grange Road, in Pinfold Fields and a second south of the road in the middle of The Fourteen Acres and Old Horse Close, both display a strong indication of Roman era settlement activity. They certainly post-date the distinctive curvilinear enclosure shapes of the pre Roman era. A further enigmatic rectangle of dark soil appears on the edge of the small field system mentioned above. It is in the Pinfold Fields and Old Farm House Close which may indicate that the dark anomaly is the result of increased organic matter in the soil of an animal enclosure.

The rest of the photographic anomalies for this area, which fall within the boundary of the university land, are all undoubtedly of prehistoric origin. Just to the East of the medieval plough mark is a large prominent circular anomaly on the edge of Great Close. Immediately south of this and in the corner of Great Close is a trapezoid anomaly and adjacent to that, in the corner of The

Broomfield, is an oval anomaly, all of which appear very clearly on the photographic record. A notable shadow appears as a ditched circle on the edge of Park fields next to Little Park Field and a cluster of smaller circles appear in what would now be the garden of Oak Tree Cottage.

The final two areas of striking anomalies appear on the same aerial photographic frame but fall outside the boundaries of university land. The first appears as a 'four leaf clover' shape that is cut on its southern 'leaf' by four short dark lines, which may indicate a later construction, the anomaly is sited on the edge of Barn Close next to Roughknowles Wood. The second is on the opposite side of the Cryfield Grange valley, at a similar height of 90 metres above sea level, adjacent to Crackley Wood. Both areas are prehistoric in origin but it is the second that displays the most interesting elements. The main settlement enclosure area appears as a 'tadpole' shape with a long curving tail that disappears south off the photographic frame. Close by is a henge monument surrounded by a perfectly geometric formation of dark circular pits. These pits continue to appear, although rather more faint, beside a double ditched curvilinear anomaly just within the university land boundary on Little Park Field. Dark pits on the landscape have long been emphasised as an important aspect of the Neolithic era by James Pickering who has recorded many such pit alignments from the air, some continuing for several miles across the countryside. He has amassed an aerial photographic library of over sixty thousand frames during his lifetime the bulk of which depict aspects of archaeology in the East Midlands.²⁸

Also clearly visible at the southern edge of the henge is an elaborate short approach corridor. The monument appears on the photographic record of 1947 as a circular wooded copse and remains as such on the Ordnance Survey record today. Between the henge monument and Crackley Wood is a visible area of very early ploughing that has the appearance of the whorls of a 'finger print' on the landscape. The survival of this record is remarkable but the area was unlikely to have been disturbed for many years as the detailed 25-inch Ordnance Survey sheet for 1905 shows the area as rough uncultivated scrub.

CONCLUSION

To be conclusive about something as enigmatic and evanescent as aerial photographic anomalies is a real challenge. The fleeting appearance of them, due to environmental changes between flying sorties, means that some aspects of this conclusion are inevitably based on the evidence of a single photographic frame, truly a process of 'chasing shadows.' However this study has not been without its eureka moments.

On Area 1, the Westwood campus, there is a very real possibility that part of a long barrow still exists on its western margin beside the sunken way. The earthworks in the southern point of the Westwood 'triangle' may be a section of an early settlement boundary, the remains of truncated burial mounds or part of a more complex and much larger area of earthworks for which we now have no visible record. These possibilities should be taken into account if the opportunity arises to study the area in more detail. Iron Age settlement has been proven in Area 1 but clearly it pre-dates Iron Age activity with the discovery on the site of the 'Canley' stone axe, together with high quality flint implements. In view of the boundary observations made on page 5 it would appear that the roundhouse platforms uncovered at Westwood are in fact on the southern edge of a huge area of activity that stretches north and west from the site. It is not the intention to immerse this study in every minutiae of the anomalies to be seen on a 1946 aerial photograph but merely to underline the importance of the university land as a whole for prehistoric settlement. After fifty-eight years of continuous agriculture and development much of this record is already lost and it must also be noted that the anomalies would not all be contemporaneous.

Over the years in excess of five hundred pieces of worked flint have been found on the university land including microliths, knives, blades, scrapers, arrow heads, flakes and cores. Together with the stone axes, hammer stones, pot boilers and a perforated stone disc, these artefacts all add credence to the fact that university land has been an area of continuous occupation since at

least the late Neolithic and host to hunter gatherer groups, probably on a seasonal or cyclical basis, for very much longer.

Professor Shotton's lifetime of study has broadened our horizons and understanding of prehistoric man on the Midlands landscape. The discovery of the Waverley Wood site, one of the earliest dateable sites of human activity in the country, next to a previously unknown ancient river channel has changed the perception of prehistoric Warwickshire. As a result of his work the Midlands is no longer referred to as the 'archaeological desert' of the 1950s. Professor Shotton has elevated the status of the area to something of a super highway for mankind and added both credibility and impetus to our search for signs of prehistoric occupation on The University of Warwick land

Some of the Lithic scatter found on the university land could have moved south from Leicestershire during the last glaciation but where we are finding flint cores and debitage, both at Cryfield House and Cryfield Grange, we are undoubtedly looking at the presence of prehistoric man and on-site tool making. The landscape of the university would have been ideal for early settlement with a strong emphasis on the importance of all the brooks and ponds in the area, this is highlighted by the density of aerial photographic anomalies beside water sources. Leading me to postulate that the margins of the natural flow of the university brooks together with the remaining woodland floor are likely to offer up the most interesting surviving record for prehistoric settlement. Two of the huge enclosure features on Area 2 of the main university campus clearly revolve around or close to known pond positions on the landscape and suggest areas of extensive animal husbandry. Cattle require a substantial water supply and even sheep on good grazing need access to water at all times. The domesticated herds and flocks are likely to have been watched all the time but permanent enclosures would have been needed for times such as calving, lambing, shearing, marketing and culling.

Little evidence exists for small field systems except at Cryfield House and Cryfield Grange. This does not mean that they never existed but that modern agricultural practice and machinery

would have obliterated them, however there is also a remarkable lack of medieval ridge and furrow ploughing to be seen on the photographic reference. This may mean that historically the university land, with its abundance of fresh water and lush meadows, has been primarily utilised and prized as prime grazing for animal husbandry in preference to the growing of cereals. It is most interesting to note that large parts of the photographic anomalies on the main campus would still appear to be accessible to geophysical survey. The areas however would need to be walked to check that elements of landscaping had not intruded which is an aspect that this study has no reference for.

The Roman and Medieval influence on university land was mentioned in the introduction as being of prime importance, certainly the presence of the monastic Grange at Cryfield has had a huge impact on the landscape there. The existence of the Stoneleigh Ledger Book has greatly enhanced our historical knowledge of the area and the eighteenth century Stoneleigh Estate Map has been invaluable to this study. It is a remarkably accurate document as is evidenced by the ability to superimpose a section of its content on an aerial photograph taken in 1989 (**fig. 17**). The Roman influence on the university land still remains illusive. The wealth of Roman pottery fragments and a tile waster found near Tocil wood indicate that the area was in continuous use for ceramics production as least as far back as the Iron Age and right through to the Medieval period. The Cryfield House ridge has offered up Roman pottery fragments, made from local clays and also imported wares, together with a concentration of Roman tessera. It is to be hoped that this survey will help to clarify and pinpoint a search area for the origins of the mosaic tiles. The Roman ceramic sherds found at Cryfield Grange also indicate settlement and I am hopeful that the shadows outlined in this study will prove to be the remains of Romano British occupation in that area.

Cryfield Grange was clearly hugely important to prehistoric man. The unity of the four major brooks at Cryfield may well have held some ceremonial significance for a period of mankind that relied totally on the elements and natural resources for survival and prosperity. The area still offers enormous potential for further study in order to confirm prehistoric settlement and I cannot help

feeling that we shall eventually discover definitive proof, at Cryfield Grange, for barrow sites on The University of Warwick land. Interestingly the mound on the western edge of the Westwood Campus, the possible mound behind Cryfield House and the oval anomaly in the corner of The Broomfield at Cryfield Grange, all point towards the henge monument on the edge of Crackley Wood. If this is so we have, on the university land, the perfect example of Neolithic 'waymarkers,' the signposts of the past that led a semi-nomadic people across the landscape from camp to camp.

This study in landscape archaeology has been entirely based on the aerial photographic references referred to in the text, together with known archaeological finds relating to the university land, and has been both fascinating and frustrating. At the beginning of the study I had no idea that so many brooks entered the land to converge at Cryfield Grange and some time was taken establishing their flow. Similarly I had no idea that the original road, shown on the eighteenth century Stoneleigh Estate Map, bore no relation to any of the existing university campus roads. Once that fact was established the fields, roads, campus buildings and subsequently the photographic anomalies began to slot into place. The study is a careful assessment of the primary source information carried out by a trained draughts-woman but the transference of information from aerial photographs to maps and vice versa cannot be claimed to be absolutely precise in scale and detail. However the research mapping has been carried out with as many cross-references as possible to ensure the scale and positioning of the aerial photographic anomalies are represented as accurately as possible.

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ENDNOTES

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²⁷ *Ibid.* P.38

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