THE WATERS OF TICKNALL AND CALKE

By Roy Hammerton.

With diagrams created, and photographs collated by Stuart Woodward. August 2001

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For a better understanding of the content, its reading in conjunction with an Ordnance Survey "Pathfinder" 1/25,000 scale map (SK 22/32), or a map of greater scale is suggested.

ACKNOWLEDGEMENTS.

My acknowledgements, together with my warm thanks, are due to the following friends and acquaintances for their invaluable help and encouragement, during the writing of this document.

To Stuart Woodward of Ticknall - For his ready co-operation in executing the diagrams and maps, for collating the photographs, and for imparting his extensive local knowledge. The late Cecil Woodward of Ticknall - For his intimate knowledge of the local Water Industry. Herbert Flint of Ticknall, last farmer at Top Farm - For his knowledge of farming in the village. Norman Clarke of Wilson -Former Manager, Home Farm, Calke-and past N.T.Warden, Calke. Richard & Robert Parker of Derby Hills Farm - For their extensive local knowledge. Leslie Cox of Twyford - Former Agent to the Harpur Crewe Estate. The Chairman, the Ticknall Parish Council. The Chairman, the Kilmarnock and Loudoun District Council. The Chief Librarian, Kilmarnock Public Library. S. Gilbert Esq., Messrs. Biwater Valves.
The Administrator, The National Trust, Calke Abbey - For the use of archive material. Betty Cawte, N.T. Volunteer - For her researches at Calke. Phillip Heath-Historian, of Melbourne - For his extensive knowledge of Calke and his advice. Robert Bentley-Who spent his youth at Calke Mill, and later farmed at Heath Farm, Ticknall. Geoff Bentley of Ticknall - The last farmer at St. Bride's. Reg Poynton of Melbourne - formerly of Old Parks Farm, Smisby. The farming family Musson - Of Grange Farm, Ticknall. The farming family Hallifield - Of Standley's Barn, Woodside and White Hollows, Ticknall. Michael Stanton - Farmer of Knowle Hill, Ticknall Margaret Draper, formerly of Ticknall.
Olive Wardle of Ticknall - For her assistance and invaluable local knowledge.
John Blunt of Melbourne.
Janet Spavold - Historian, of Ashby de la Zouch. Mrs.
Gladys Kidd - Of Stanton by Bridge.
The family Bett's, of Holywell Farm. Ashby de la Zouch - for access to the hydraulic ram. The Curator, Historic Royal Palaces, Hampton Court. The Curator of Muniments at Melbourne Hall, for details from the archive. Bob Perry of Ashby de la Zouch - Formerly a Manager at N.W. Leicestershire Water Board. Howard Colvin - For details from his book" Calke Abbey". Harold Soar of Melbourne - For his knowledge of the Records of Ticknall Parish Church. Stephen Watson, Manager of Melbourne Water Treatment Works - For his interest and help. The many members of the communities of Ticknall & Melbourne who have assisted me. Especial thanks are due to Bill Moffat, N.T. Volunteer-For his researches and active help. The Librarian and Staff of the Public Library, Ashby de la Zouch. The Librarian and Staff of the Public Library, Swadlincote. The Chairman, The Ticknall Preservation & Historical Society -

For entrusting me with the subject?

And particularly to Howard Usher, Historian, of Melbourne - For his encouragement, and for his editing of my manuscript.

Roy Hammerton - August 2001

THE WATERS OF TICKNALL AND CALKE

PREFACE

When today, we turn on the taps for our bath, switch on the washing machine, or flush the toilet for an immediate response to our problems of hygiene - we give little thought to the great difficulties which our forebears must have faced, whilst performing similar tasks.

Do we ever stop to think from where such sources of water may derive, or even more remotely, consider its destination following our usage of it!

All human settlements require a source of water, for both their establishment and for their continuing survival. In the cases of Ticknall and Calke in South Derbyshire, a large number of mostly small and scattered springs emerge from the surrounding higher ground to the south and west, beneath the long ridge of Pistern Hill and its outliers, to supply that need.

The monastic buildings of Calke Priory were erected - as was customary - close to a water source for its consumer needs - although the flow from that source appears today to have greatly diminished, and to have disappeared entirely beneath the ground surface!

The domestic house which followed the demise of the priory cell at Calke - together with the farms of the estate - slowly increased in both size, and in the number of their inhabitants, bringing a consequent increase in the demand for water. To achieve this additional supply a number of schemes were initiated over the centuries, to be fully met only in the 20th.century with the arrival of mains water.

Over the centuries, the water supplies to Ticknall have been improved considerably, both by and for the inhabitants. In the 20th. century alone.it has been substantially updated four times.

The last occasion which the author recalls was in 1992 - and followed a number of years of complaint against Severn Trent Water, during which time rusty brown deposits appearing in the water drawn from village taps became ever more brown, at increasingly frequent intervals!

The above problem was eliminated when the mains installed by the former South Derbyshire Water Board in 1962 were scrubbed out, before being relined with a cement coating.

Most noticeable in the village today are the quaint remains of the water system installed in 1914. The irregularly sited and green painted lion headed cast iron taps, (or fountains, as they should more accurately be described) were to stay in use until a modern supply of water to every property was achieved in 1962 - when South Derbyshire Water Board (it was to become part of Severn Trent Water Ltd. by June of 1974) took over from the former Hartshorne and Seals Water Board - and installed their mains. Surprisingly perhaps, one of these old taps is still" in water"!

The original stream which served the village still runs today, although is seldom to be seen and even where it does see the light of day, its width can often be measured merely in inches!

One aspect of supply to which the term source can barely be attributed, is to be found in the Soft Water Cestern. The term is a local derivative of the more usual description "cistern").

A number of the larger older properties in the area had such a facility, which was merely a larger and more permanent version of the universal wooden water butt (lingering today often in plastic form) traditionally used for washing and the watering of most gardens prior to the first half of the 20th.century. The Old Post Office at the comer of Church Lane and Main St., Basfords Hill Farm on the Ashby Road, Top Farm on the road to Ashby, and White Hollows Farm beneath Pistern Hill all exhibit examples of such cisterns today.

Rain water was led from the roofs of these buildings, and usually into the basements - there to be fed into an often vaulted brick built reservoir. Sometimes the cistern was

waterproofed from within with pitch, whilst others were lined with glazed or blue bricks.

In the case of The Old Post Office, the cistern lies within the great stone base of what was formerly a farm building, and it is perhaps some 12' by 10' square and 8' high, being lined with pitch. The stored water, usually raised for use by pump, would be used for washing, swilling down, cooling the farm dairy, and similar purposes - but not for drinking!

Top Farm sported two cisterns - one for soft water was filled by rainwater from the roof, the other for fresh water, being fed by a stream.

The Public Health (Water) Act of 1878 - stipulated that no new houses be built unless they were within reasonable distance of a fresh water supply. This Act, along with many others passed from the middle of the 19th.century onwards, brought the whole country slowly out of the Middle Ages. A gradual awareness became apparent to the authorities following the devastating arrival of Cholera in The British Isles during 1832, coupled with the endemic presence of Typhoid and other waterborne diseases, that a serious risk to the national health was posed by our often polluted water supplies. This was connected with an inability to treat and dispose of sewage. Domestic, farm and industrial effluent flowed unhindered into streams, whilst seepage from sewage cesspits often entered wells and watercourses. But the process of reform was painfully slow, due both to a general ignorance and to the costs which would call upon the public purse!

Many local water sources were suspect with regard to their purity, although most would have been suitable for some household tasks. Very often, visits would have to be made far afield to reach reliable fresh water springs for a supply of drinking water.

For many centuries, all members of the family would have drunk a weak beer known as Small Ale - its water content having been made comparatively safe during the process of its brewing, which was often undertaken in the home!

Before the advent of today’s Sewage Treatment Works (known to previous generations as Sewage Farms!), you may well wonder what happened to the effluent from our homes.

It was not until the arrival of the mains of the South Derbyshire Water Board in Ticknall in 1962, that the installation of water closets was made possible. By 1963 these were connected through sewage pipes, aided by an electric pump close the Horsewash Gate of the limeyards to a Sewage Treatment Works - the construction of which was commenced in 1961 and is situated to the east of the limeyards.

Until that time the use of a chamber pot was usual indoors at night -to be emptied outside in the toilet facility the next morning.

For some types of toilet a visit at regular intervals was required by the often horse drawn Night Soil Cart, a tank on wheels into which was emptied the large toilet pail (bucket) which stood beneath a wooden toilet seat (often well-scrubbed) to be found in tile "privy". The privy might often be sited at some distance from the home, and may have served more than one family. Many Local Authorities often deemed that such an unwholesome activity should be carried out under the umbrella of night, hence the name of the cart.

Before the arrival of the flushing Water Closet, an Earth Closet might sport a device for depositing an amount of dry earth upon the contents in the bucket beneath, at the pull of a lever.

Despite its name, the use of "the privy" was much less private then, as may be ascertained from the conditions existing at the Methodist Chapel located in Chapel Street, Ticknall. When mains water was connected in 1992, its old wooden toilet seat was found to be a two seater.

(This "trophy" has, happily, found its way into the possession of The Historical Society). Countrywide - banks of five seats were not unusual for large establishments.

Indeed, Hampton Court Palace - as befitted the great King Henry VIII, boasted a monumental 28 seater named the “Common Jakes", (Jakes being a usual name of that day for such a facility!) This was also known, more colourfully, as "The Great House of Easement", and had four seven seat bays installed in its two storeys, which contained further rooms. The effluent drained into the moat, prior to its entering the River Thames at a point close to the limit of its tidal flow. The building exists today, having been refurbished in 1845 - it presently being the office of the Chief Executive of the Historic Royal Palaces.

Locally, in the privy of the cottage attached to the Working Farm at Elvaston Castle, a twin adult with space between for a child version- is to be seen today!

The old house "Ivy Leigh", on the comer of Harpur Avenue, Ticknall, sported a similar configuration, before the arrival of its mains water closet.

By far the most universal type of toilet was probably the ashpit midden, the seating for which (sometimes only a log!) being constructed over a large pit, the contents of which were covered over with cinders and ash.

If one was fortunate - a trowel might be provided to scatter loose ashes or earth from a mound close by - upon the deposits below. A permanent pit with a shelter above would be dug out when Ml, or if temporary it would be covered with earth - and its shelter removed to cover a newly dug pit close by! Refinements came with the use of powdered lime sprinkled upon the contents, whilst latterly sanitary fluids were used to neutralize the sewage and its odours. By the commencement of the 20th. century this midden had developed into the concrete Cesspit, which would often cope also with the more fluid content of household effluent. This would then be pumped out by a specialized vehicle, before being driven away for disposal.

The successor to the basic and still existing Cesspit is the more sophisticated Septic Tank.

Part of the small community of Calke village is served by a recently installed Reed Bed System, in which a limited amount of effluent can be successfully treated by being neutralized during its passage through the root system of a bed of reeds.

In the event that any of the above was beyond household resources - the raw content of the bucket would be buried, and often spread as manure on the gardens around the habitation.

The above practice may well have applied to the gardener’s privy at Calke Abbey, which survives today complete with its bucket - tucked into a corner on the north side of the perimeter wall of the Physic Gardens there, to the east of the Vinery.

On occasion, a toilet seat would simply be built above a stream, when the water might, hopefully, flush the detritus away - so heaven help those living further downstream.

Although legislation (still only permissive for a number of years) was enacted by Parliament in 1848 for our towns to be provided with efficient and safe water supplies, together with a sewerage system, it was not until 1914 that Ticknall, in common with many other settlements away from the towns-began to emerge into the modem world. Sir Vauncey Harpur Crewe initiated the scheme mentioned previously, which provided for the construction of water mains fed from a covered reservoir to feed taps, placed strategically throughout the village.

Quite apart from the subject of water which is the subject of this book, electricity made a hesitant start in Ticknall in 1939. Perhaps the outbreak of World War Two may have played a part in the delay here. From the outset, many households although connected, contented themselves with its service to the ground floor of a property only.

One of the last properties to be connected was Scaddows Cottage, on the road to Hartshorne, and this was not accomplished until 1949.

A mains gas supply did not arrive in the village until 1952/3. Firstly from Melbourne, as far as the central road junction, and only later through EMGAS to the remainder of the village.

Small wonder then that before those events, a popular nickname for the village in the local outside world was that of "Paraffin City"!

At Calke, electricity arrived at both its village and the Abbey in 1962/3, but it is doubtful if mains gas will ever find its way there now!

Mains water came to the village and to the Home Farm in 1963 - although Calke Abbey, often it would appear resistant to change - did not benefit from its arrival until 1985/6.

After reading this book, you may perhaps allow your mind to dwell upon more difficult times, when todays mundane act of filling a kettle from a shiny kitchen tap or simply pulling a handle in the lavatory, has made our lives very much easier, and certainly more healthy!

For any reader who might desire more accurate locations of the many sites described in the text, application should be made either to the Author, or to the Chairman of The Ticknall Preservation and Historical Society - who will be pleased to supply an alternative text containing Ordnance Survey National Grid References to those locations.

Roy Hammerton, Ticknall - August 2001.

THE WATERS OF TICKNALL AND CALKE

Chapter 1

The SOURCES and COURSES of WATER in TICKNALL and CALKE.

As with most settlements, the populations of Ticknall and Calke traditionally obtained their water from springs, streams and wells. Sited where practicable, adjacent to the properties on both sides of the roads, some of these wells had pumps mounted above them. A number of both of these items survive today, although some of the wells have been capped in the interests of safety .whilst others have dried up. The depths of the wells varied, and were dependent upon the height of the water table above an impervious layer of clay in the area. Some were only a few feet deep, others up to a hundred.

"SCOT's BROOK" (The medieval SCOTTES BROOK) and its journey to the River Trent.

The prime source of water for the village originates from what appears today as quite a small stream. Whether or not it had another name originally is unclear, and the extent of this name, in common with the extents of New Brook and Alderbrook are all a little uncertain.

A long held belief in Ticknall has been that it was during the 1745 rebellion of Bonnie Prince Charlie, that this stream came to be known as Scot's Brook. It is said that an advance guard from his force crossed the River Trent at Swarkestone Bridge.

Local legend tells that a small party from this force reputedly made its way from Stanton by Bridge towards Calke, via the old road from Stanton Church - a route which is only partly in use today as a path and as the access road known as Shepherd's Lane - which passes close by St. Bride's Farm (now converted to dwellings). Further on towards Calke this road crossed the brook we describe, to the west of the now inundated farm of New England where, schoolboy lore asserted "the waters ran red with the blood of a skirmish"! (The schoolboy recounting this tale is not far off receiving his Old Age Pension! - Whilst an *80* year old added that the stream certainly ran red during his youth, when Mr. Mason the butcher swilled out his slaughterhouse!)

Alas! I am assured by historian Howard Usher, that the legend quoted above has its origins only in the fertile imaginations of enthusiastic local Victorians But it makes for a good yarn!

Intriguingly though, a dirk was unearthed by ploughing near New England in the early part of the 20th.century, and this was donated to Derby Museum. - So, perhaps, who knows?

However, back to reality. The historian Phillip Heath confirms that Scot's Brook is mentioned in a document dated 1317 A.D. of which more later. His conjecture is that the name refers in some way to an as yet unidentified settlement which once lay between Ticknall and Melbourne.

There is of course a deserted medieval site in the area named Scotland, where the lane to Breedon leads from the Melbourne - Lount road. This was originally known as Andreskirk (from the dedication of its church to St. Andrew). A tight web of footpaths was still apparent here, even on 20th. century maps. The Ashby historian Janet Spavold wonders if the name might be associated with an ancient Scottish drover's or clothier's road.

The author speculates that such a road could have forded the River Trent at Swarkestone. Then, utilizing the road referred to earlier past Stanton Church, and Shepherd's Lane past St. Bride's, it would have arrived at the hilltop on Melbourne Common where some pine trees grow today. Such trees were often planted from cones carried by the travellers to identify the way for the future. From that point it was downhill to the Scot's Brook ford at New England. After which, prior to the inundation by todays reservoir, a road made its way to the south east in the direction of "Scotland". Food for thought perhaps and some future research!

Howard Usher floats the idea that the name may have a distant family connection, since "Scott's" had long been in the area. Two of that name keeping alehouses in Melbourne in 1577.

The water has its origins to the west of Ticknall, in the area about Foremark Park Farm on the road to Hartshorne, which complex formed a part of the estate of the Burdett's of Foremark.

Its actual source today is not readily apparent - although a pond at the farm is certainly a part of it, since contaminated stream water caused the death of a dog at Brookside Cottage

at the east end of the village in the mid 1983's, after this pond became polluted with agro-chemicals. The stream itself has for many years been completely culverted in the farm area, its water running beneath fields down the shallow valley to the north east of the farm - to issue in the fields lower down where it is joined by a further tiny source from the north (now culverted), itself fed from a pond on a spur of the hill towards Foremark Reservoir. The brook runs on, to disappear in a culvert to the west of Ticknall, where the roads from Milton and Hartshorne join.

It is in those fields to the west of the junction I am told, that the old stream occasionally re-asserts its former and stronger self, following spells of very wet weather - when the old course can be seen even today lying in a gravelly area, where in the none too distant past floods would form to the detriment of the western end of the village. The farmer at Grange Farm confirms that the name of Scot's Brook is still in use hereabouts.

Although it is doubtful if there is any connection with the stream, it would appear to be expedient at this point to mention two ponds which lie some quarter of a mile to the north west of Ticknall Church. They are close to the trackway from the church to Foremark. On O.S. maps they have always been named as "Southern Pools", but the octogenarian Farmer Musson (and others) is adamant that this is a misnomer. The name of the main pond is he claims "Siddons Pool". Both are understood to be inundated marl pits, the source of whose water is unknown.

The Ordnance Survey has always endeavored to authenticate all names printed upon its products. Indeed Object Name Books containing documentary evidence for names cover all their plans. However, particularly in the 19th. century, if a Local Authority was unable to verify a name, it was often necessary to enlist the aid of some local person of integrity - Agent to an Estate, Magistrate or Vicar perhaps - to sign documents. Some were known to have attended to this duty with an excess of zeal alien to their local knowledge. This may have been the case with Siddons Pool.

To the north west of the present pavilion on the recreation ground, a wed (now filled in) is shown on O.S. maps until 1966, lying in the field to the west of the commencement of the bridle way to Ingleby (itself once the direct road from Hartshorne to that place). The well also appears on a map of 1791. Some believe that the remains of the village workhouse served by the well may have been discovered during ploughing, a short way along the bridle way and to its east. But another well is recalled north west of the pavilion on The Grange Recreation Ground and may well have been allied to the workhouse. It is, the author believes, more likely that the workhouse (records of its construction in 1783/4 in the Vestry Records are to be found in attached diagrams) lay in the present tree screen to the west of the recreation ground, close to its entrance - for an un-named building appears here on Burdett's map of 1791 and also on the Ordnance Survey map of 1882. It disappears on later maps when the area was given over to gardens which were worked until the mid-20th. century by cottagers on the Burton Road-Grange Farm had two wells, the last being made redundant upon becoming polluted with a fibrous growth circa 1960.

Farmer Musson states that prior to the arrival of mains water, many fields had their own wells.

Returning to our stream, whose culvert has now reached the main junction in the village where roads from Melbourne, Hartshorne and Ashby de la Zouch meet - Scot's Brook (which does not appear to have been known as such within the settlement itself!) is joined in its now one metre wide brick culvert by the culverted secondary stream source for the village, which flows in from the south - of which more at the end of this chapter. The flows from both these old streams would have dictated the alignments of the main thoroughfares through the village, and the siting of its farms and habitations. Their courses would appear to have been at least partially culverted, prior to the arrival of the 19th-century.

From this main road junction, the combined culverted streams flow eastwards beneath Main Street. A road which was at one time known as Highway Side.

Emerging from its culvert north of the former village malthouse off Barton's Lane, the main

stream sees the sky in the village for the first time, and is joined there by a tiny stream which issues from the 1802 tramway cutting near to that features' stone built tunnel east of Basfords Hill Farm. This streamlet, flowing north, enters a culvert near the outbuildings of Hayes Farm.

Halfway along the east face of these buildings the flow comes into view again for about a metre, prior to its continuing underground to join the main open stream at the culvert previously described to the north of the malthouse, where that stream runs close to and parallel with the south face of the southern wall of Main Street. The main stream is here about one metre wide, and after some 60 metres or so it is again culverted.

It flows on beneath verge and road - and the waters are next to be found emerging from a culvert in the grass verge on the south side of the road, to the north east of Brierfields Cottage (No.106). From this point it runs through the rear garden of the cottage named Highwayside, (opposite the Royal Oak Garage), prior to its being mostly culverted beneath the rear garden of the adjacent Derby House to emerge in a paddock, before again being piped beneath the entry to The Limeyards in the area of its old Horsewash Gate.

It is clearly delighted to escape from its mostly underground journey for it emerges strongly from a culvert, to the south of the rear boundary wall of Brookside Cottage (where the poisoned canine lived!) from there to skip joyfully down steep slopes, where it swells the deep waters of the long disused lime quarry known as Dick's Pit.

Until perhaps the middle of the 19th.century, the stream had been guided along the top of the western quarry slopes here in a stone built leat - but this feature has long since collapsed at its northern end, although the remains of it are to be discovered (devoid of water) a little way to the south east. Its course can be traced fitfully along the top of those western slopes, until it turns to the east at the southern extremity of Dick's Pit.

The leat was built perhaps a couple of hundred years ago - or maybe even earlier - to carry the water of the village stream across the original ground level of the limeyards - in order to prevent flooding of the workings. However, as development of the quarries took its toll on the surface, the leat became damaged, incomplete and therefore redundant.

Before the ground level was lowered by the extensive quarrying, a tract of land named as Mill Close existed in the vicinity of the present smallish pond which is today known as Engine House Pit, for next to it was situated the steam pumping engine which evacuated the waters from the limeyards. The pond is also known as Peacock's Pit - after the draught horse which was pulled into it by its cart and drowned, during the 19th.century.

The name Mill Close - being coincident with the course of the original village stream - would seem to suggest that it may well have been the site of an early Ticknall water mill, although no sign of the structure is apparent, at today’s much lower quarried ground level.

A deed of 1371 towards Robert Abell between the Duke of Lancaster and the Earl of Leicester refers to Scottes Brook.

In 1533, Robert Abell of Stapenhill made a 41 year lease to Raff Whalley - who was at that date the Miller of Calke (a mile to the south east) - for the building of a corn mill. This may have been a replacement for one mentioned in a deed of 1320, and been situated in Mill Close.

In 1613 a cottage which may have been connected with the mill, was sold by Raphe Abell of Ticknall, to John Oliver of Chellaston, and later to Sir John Harpur of Swarkestone.

Today the outflow from Dick's Pit - which collects water from the all the limeyards - exits through a three foot wide brick built culvert at its south eastern comer. The water then flowing beneath ground to the east, until near the limit of the limeyard area when, still underground, it turns south by the edge of the woodland. It then joins into the original village stream course (close to the north east comer of the present Sewage Treatment Works) when, turning again to the east and still underground, it finally emerges from a brick culvert in the fields, to re-discover its name of Scot's Brook.

Eastwards then, it flows on to expand into the Staunton Harold Reservoir (which was constructed between 1957 and 1964). Shortly afterwards the waters are crossed by the present causeway which carries Broadstone Lane over this part of the reservoir.

Near this point stood the now demolished and inundated farm buildings of New England, where sluices were shown on the 1882 O.S. map. Robert Bentley who is a son of the last farmer at Calke Mill prior to its inundation, remembers embankments (some understood to be extant) in this area which may once have been connected with mill ponds - whilst a small stone building he recalls some fifty metres to the east of the farmhouse, may once have been part of the mill recorded on Derby Hills in both 1636 and 1703.

From this point onwards the stream continued - prior to the inundation - to the main valley bottom, where it joined the stream that eventually became known as New Brook, on its course from Calke Mill, via Melbourne Pool, to the River Trent.

The FINAL OUTFALL of all the Waters of TICKNALL, CALKE and STAUNTON HAROLD.

It is I believe worth recording here a fuller description of this other stream - New Brook which name appeared as such on old O.S. Maps, between Dimsdale and Melbourne Pool. It appears to have acquired the title following alterations of the 18th.and 19th. centuries concerning an iron foundry, of which more later - but the stream was previously a part of the Alrebroc, which later became known as Alderbrook, and is presently called Red Brook. This water rises to the west, under Pistern Hill, it being one of the original boundaries to the lands granted to the former Calke Priory at its foundation. It is described in its upper reaches in Chapter 5.

The waters of New Brook and its countless "feeders" enjoy many different names during their seven mile meander to the River Trent.

One of these feeders originates at the base of Pistern Hill, to the east of Old Parks House, a mile and a half to the north of Ashby de la Zouch. It flows north east through the long and narrow wooded feature named Black Ditches, after which it is joined by another streamlet from the south. Shortly after this yet another stream joins, fed from a number of springs which rise to the west of Pistern hill Farm (East). The most southerly of these springs first fed a hydraulic ram which served the farm, whilst another ram close by served Pistern Hill Farm (West).

Speaking recently with Reg Poynton - a previous farmer at Old Parks - it was revealed that circa 1970, he had accompanied officials of the Leicestershire Museums Service on a perambulation of the boundaries of Lord Hastings deer enclosure at Old Parks. They believed that the long and narrow ponds then at Black Ditches were ancient in origin, and were home to reed beds of a good thatching quality. Today they are silted up and almost dry.

The above combined streams flow to the north east, entering the southern end of the southernmost lake at Staunton Harold Hall, where it lies in Wilderness Wood.

A few metres to the north of this point the lake is joined by yet another source from the south. This was fed from the springs around Spring Wood on the estate of the Beaumont family of Coleorton Hall - The whole area here has been reinstated recently, following years of opencast mining. The waters flow from Spring Wood to the hamlet of Lount, before following the valley to join the Staunton Harold lakes.

The author is not aware of the names relating to these three main streams, the combined waters of which flow north through the two lakes of Staunton Harold Hall, to emerge from them at their northern extremity. The short length of stream which flows north beyond these lakes goes under the name of Staunton Harold Brook. (but its valley may in the past have been referred to as Rekedale or Rakedale - Rake referring perhaps to a vertical vein associated with the quarries of Dimsdale nearby. It is here that the waters of this brook join the southern extremity of today's Staunton Harold Reservoir, which floods the valley to the north.

Just to the north of this point the waters of the reservoir are joined today by the old Alderbrook (formerly Alrebroc and todays Red Brook), issuing from the quarries of Dimsdale to the west, and close to the point where the stream later became known as the now

inundated New Brook.

The mereing (description of a boundary)"Centre of Stream "to the course of Red Brook on maps to the west of this area, indicates the position of the County Boundary. This boundary continued north along the centre of the former New Brook, and accounts for its being shown as "Defaced" on maps published since the inundation - the stream course now lying beneath the reservoir waters. The former course of New Brook is here described as it once flowed along the valley bottom through osier beds, now beneath the surface of the present reservoir.

New Brook continued to the north until at a point south of Calke Mill its course was interrupted by a sluice, where a fleam (or leat) was described on the 1880 O.S. map as a Mill Lead (or Lede), This led off to the west of and almost parallel to the main course of the stream, where it assisted in the watering of the mill pond feeding Calke Mill. (See Calke Mill-Chapter 5).

During the latter part of the 19th.century, the old course of New Brook was diverted entirely through the Mill Lead for many years, since a lack of water entering the mill pond from the silted up ponds of Calke Park was proving insufficient for the task of driving the machinery.

New Brook continued north from the sluice towards the mill, where it was entered by the overflow from the mill pond, whilst further on to the north east the culverted mill race from the mill itself entered the brook, close to a bridge to the north of the miller's house (the later farmhouse!), Calke Mill itself was sited to the west of this house.

Opposite the entry point of the afore-mentioned overflow from the mill pond into New Brook, a tiny stream joined it from the east. The county boundary which had until this point followed the centre of the courses of Alderbrook and of New Brook, now turned east to follow the centre of this small stream. On its downward journey to the main stream the tiny brook passed the now demolished Springwood Cottage where, it is recalled by Mr. Bentley, the toilet seat was sited over its flow - one half in Derbyshire, the other in Leicestershire!

Only a short distance to the north of the mill, New Brook passed beneath the triple arched Sir Henry's Bridge, which carried a coach road connecting Calke Abbey to the Melbourne to Lount road. The bridge was being constructed for Sir Henry Harpur Crewe in 1819, but sadly he suffered an early and instant death in that year, being thrown from the carriage that he was driving out of London. The bridge was as a result never fully completed, being denied parapet walls. The structure was demolished prior to the inundation.

Continuing northwards found New Brook joined by the previously mentioned Scot's Brook.

North of this confluence, a Melbourne map of 1630 shows two pools which are associated with a lease of that date regarding a foundry? At the same point on Burdett's map of 1791 it shows that these had been developed into a single and very substantial pool (known as Furnace Pool) similar in size to Melbourne Pool. The pool provided power for the water wheel which drove the bellows and hammers, which were necessary for the forging of castings at a foundry there. This would later become known as Furnace Farm. The foundry was developed in the early 17th. century, being converted to charcoal firing in 1745. It closed about 1775, presumably following the exhaustion of the local ironstone supply, following which it may have functioned for a time as a pottery. The pool appears to have disappeared after 1800.

The author wonders whether the straightening and other substantial works involved in the creation of this pod, may have led to the renaming of the Alderbrook stream as New Brook. Local historians are divided, regarding the extent and application of these two names. Whilst to add to the confusion Bob Bentley recalls that 'm his youth the use of another name was accorded to the section of New Brook between Sir Henry's Bridge and its confluence with Scot's Brook - that of Ossier (Osier) Brook.

New Brook flowed on past the foundry, running close to the centre of the present reservoir dam. Through the dam today a small outfall emerges from a sluice as a stream - to which some alteration of course was made at the time of the reservoir construction - prior to the discharge of the stream of New Brook into Melbourne Pod. This section had also undergone some straightening between 1841 and 1846, which works may also have contributed to the name of New Brook.

The tiny Woodhouses Brook, which rises close to Woodhouse Farm sinks into the ground very close to the edge of Melbourne Pool. From where it was culverted in 1842-4 to join the weir at the main outfall of the pool, at its south western corner.

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Mill sluices on the northern bank of Melbourne Pool take some of the waters through the grounds of the Hall, whilst the main outfall is at the pools' south eastern extremity, over a weir and into the stream known as Blackwell Brook, which follows the outer face of the boundary wall of Melbourne Hall. Then, in the low lying fields to the north east of the site of Melbourne Castle it becomes Carr Brook. Its course continuing, close to the former Midland Railway Station it becomes Station Brook, whilst even further on it is known as King's Newton Brook, whose waters flow finally into the River Trent, opposite the church of Weston upon Trent.

Quite a collection of names for such a modest watercourse.

THE OTHER SOURCE of STREAM WATER through TICKNALL VILLAGE.

The secondary source of stream water to the village appears to have collected in the fields to the west of Spring Cottage, at the point where High Street continues as Ashby Road.

On the 1/2500 O.S. maps of 1882 and later-a number of ponds, wells and troughs are shown in the area, whilst a drinking place is noted on the layout plan for the water system of 1914.

Some of the water from this source is still piped to a spring well housing. This brick and stone arched structure, built by the Harpur Crewe Estate in the early part of the 19th.century stands alongside the highway, where it forms a part of the front boundary to the aptly named Spring Cottage. It is marked as a well on both the 1882 and the 19661/2500 O.S. maps, and the housing, still in water today, comprises a public water drawing place which overflows into one of the few public horse troughs to have survived in working order in the locality. The flow has never - within living memory - been known to run dry, and has occasionally caused flooding to cottages in this part of the village. The quality of the water is believed to be very high, and it is known that some members of the community will use nothing else for brewing their tea. The spring well housing and its horse trough appear on the Register of Grade 2 Listed Buildings.

Although culverted here, signs of the existence of the stream from this source are sometimes apparent today on the rare occasions that traffic noise is stilled, when the sound of running water can be heard at some points along its underground course. The waters passed by, and perhaps contributed to, another listed brick and stone arched well housing of the early 19th. century, sited opposite Sheffield House - after which the stream reaches the central junction of the village, where the roads from Ashby, Melboume, and Hartshorne meet. Here the stream joins Scot's Brook, where it flows in from the west. The brick culverts of both these streams are about one metre in width.

OTHER VILLAGE WATER SOURCES.

Returning to other sources of water in the village - In addition to Scot's Brook and its associated streams was a water spout,(noted on the layout plan of 1913 for the 1914 water system of Sir Vauncey Harpur Crewe), lying to the south side of Main Street - close to its present junction with Harpur Avenue. This spout was fed from a spring in the fields presently covered by the development of Harpur Avenue, and would have served a former village pottery and bakery, which was a part of the premises of the cottage today named Ivy Leigh.

A water spout could be either - water issuing permanently and directly from a spring via an iron pipe or stone orifice, at a height convenient for the filling of vessels - or issuing in the same manner from a trough connected with a spring.

Another spout was shown on the plan of Sir Vauncey's system - this was on the south side of Main St., opposite Church Lane and The Old Post Office.

Yet another water spout issued on the north side of Main Street, to the west of the turning to Melbourne. This was noted as a spout on the 1/2500 O.S. map of 1882, but had changed to a trough on the 1966 edition. The trough still exists, hiding beneath the undergrowth near the junction of the track leading northwards, and beside which another water spout was to be

found some fifty metres to the north, on the earlier map.

The O.S. map of 1966 shows a spring emerging, in the fields to the north of Ticknall Methodist Chapel. It spread into the fields, creating an area of bog and pond. The water simply sank into the ground. Since that time this source has been entirely culverted.

A large pond once lay in the field before the old rectory. This extant Victorian building is believed to be built on the site of an old manor house. Grange Close now occupies the field site.

A small pond still existing today is on The Slade Field off Rose Lane

Presumably, all the above sources discharged their waters eventually into the village stream.

The farm of Knowle Hill some half a mile to the north of the village drew its water from a well close by it using a fan bladed wind pump, but this feature is no longer in existence.

THE WATERS OF TICKNALL AND CALKE

Chapter 2.

WATER in the LIMEYARDS.

(With notes on the HYDRAULIC RAM).

The major former industry of Ticknall - its limeyards - lay mainly to the south of Main Street, at the eastern end of the village. A further limeyard, together with a brickyard - lay to the north of this main road.

The Northern Limeyard's and Brickyard's of the Calke Estate.

The 1/2500 scale Ordnance Survey map of 1966 indicates a pond lying to the west of the farmstead of Woodside, which is sited a kilometer to the north of the village, on the southern boundary of Gorsey Leys which is a part of Robin Wood. To the south of the farm a stream emerges from two more ponds, to sink in the fields before its waters reach the presently heavily wooded area of the Northern Limeyards, these together with a brickyard lie to the north of Main Street in the village. At least some of the above waters are understood to be seasonal, emanating from surface water deposition.

Additionally, fresh water was supplied to a reservoir at Woodside Farm through a pipe from a hydraulic ram. (See notes on the Hydraulic Ram at the close of this chapter) - This ram was sited almost a kilometer to the North West, in the area known as Seven Spouts.

The waters from Woodside, re-issued from the sunken stream at the edge of the limeyards, before entering a pond in the old quarries of the Paddock Wood Limeworks. To the east, up to three more ponds fed by this water, lie in the old clay pits of Sir George Crewe's Brickyard. The outlet for this water is unclear, but it must at some point cross beneath Main Street, to join the main village stream. The roof supporting pillars of the drying shed for the derelict brickyard lie to the north of a large and ruinous 14 hearth Scotch kiln. This was last fired in 1942, after which time the wartime restrictions on light emission forbade it. The remnants of a clay crusher and its horse powered whimsey lie nearby - being alt that remains today of the brickyard enterprise.

An earlier brickyard is known to have existed in the area, but its precise location is unknown.

There is a well depicted on the 1966 O.S. map, adjacent to Brickyard Cottage in the north of the limeyard area. Another appears on the 1882 O.S. map north east of the cottage, to the south of which a spring emerges in the field. It was perhaps these wells that contributed to a stream which issues to the east of the gateway to Brickyard Cottage (which lies up the track from Lime Kiln House on Main Street) - and which enters a pond in the area of a former limeworks which belonged to Sir Francis Burdett of Foremark.

Two other ponds are shown in the old workings which, together with all waters of the Northern Limeyards, pass beneath the highway to discharge into the village stream which flows to the south of Main Street.

The Southern Limeyards of the Calke Estate.

A number of small springs (some mere seeping’s from the ground) have contributed, together with the waters of Scot's Brook, to the formation of the many often very deep ponds which have accumulated in the long disused quarry workings comprising The Southern Limeyards. At one period at least two steam powered pumping engines were required to ensure that the waters here were kept to an acceptable working level.

Since the water is no longer artificially drained from the yards, the numerous disused pits have often become inundated, until their depths are equally as high as are their surrounding quarry faces. By the close of the 19th-century, when the mineral reserves of this lime burning industry were approaching exhaustion, the pollution from the once numerous kilns which had poisoned nature for many centuries became greatly reduced, and the rich foliage which we

see today had started to re-establish itself.

Today we find woodlands of a rare beauty, which are greatly enhanced by the expanses of water. In some places above the quarry cliffs, where the original ground level is apparent, the hedgerows which formed the original field boundaries can sometimes be discerned. These hedges had often been adopted as boundaries to define the extent of the different limeyard concessions.

The whole of the limeyards area has been deemed to be a Site of Special Scientific Interest.

The horse drawn tramway which served the yards, carried their products to the Ashby Canal, but it was closed in 1912. From that time onward only a small output was maintained - mostly for the use of the Calke Estate. In 1942 production ceased entirely, when the use of the fiery kilns was deemed to be in breach of the regulations imposed by the Air Raid Precautions of WoridWar2.

The main entrance into the limeyards today is via its old Horse wash Gate. The wash itself was located to its south - a presently filled in pond.

Further into the yards and to the east of the footpath alongside the old buildings was a small but deep pond (now partially filled in). This came to be known as Molly Wooton's Hole. Molly was employed in the late 19th-century as a maid, at the long demolished house called Tichenhalle which was sited in the present roadside paddock. Tragically, having become pregnant by a servant there she was, as was often the custom of the day, dismissed from her post - following which, in her distress, she drowned herself in the pond!

With the passage of time, poor Molly Wooton's name came to be known as Molly Mutton to the local schoolchildren - As with the earlier narration on the legend of the skirmish - the "schoolgirl" concerned with the telling of this tale to the author is close to pensionable age, and had herself been born in a cottage in the limeyards. She was to take some convincing that her knowledge of Molly's surname was not quite as she had been led to believe at school!

To the south of the Southern Limeyards water collects, to fill a pond at the east side of the long Lodge Plantation. The water from this pond was piped, to emerge from a culvert close to the old gunpowder store to Marget's Close. This lies to the west of The Whimsey - a ruinous former steam beam engine house. The stream from the culvert sinks to fill the deep quarry of Marget’s (sometimes Margaret's) Close. Its outfall finds its way northwards and into the heart of the yards, where a number of small springs, deposition and the water table itself combine to fill the numerous disused quarry ponds.

The outflow from all of these leaves the disused workings at the south east comer of the largest pond - known as Dick's Pit, as already recorded in Chapter 1.

On the southern boundary of the yards is the depression created by the collapse in 1952, of the old underground workings known as The Dripping Wells (and by some as The Dropping Wells!) The caves here, in which the overburden was supported by a few pillars of limestone, had long been a favorite picnic spot for locals. Water had always dripped into the workings, and during a deep winter spectacular icicles were sometimes formed.

A particularly attractive part of the limeyards today is to be found at the south west corner of Riley's Close to the east of the track. Here water tying in the former underground workings can be seen, where the roof has partially collapsed.

NOTES on the HYDRAULIC RAM.

This was a favorite and simple countrywide device, which was employed to harness the stored water of a sometimes quite small flow, in order to transmit that supply over some distance, and often uphill.

It achieved this by using the gravitational flow of water stored behind a dam, often through a three or four inch diameter pipe. This flow was collected in a trough, often of a concrete construction. When this water achieved a critical weight in the trough it activated a diaphragm in the ram mechanism, which in turn released a piston. This then propelled a small pulse of water through an iron pipe of perhaps one inch in diameter, to a distant point.

The ram emitted a distinctive "popping" sound by day and by night when activated, and this could often be heard over a considerable distance.

Indeed, during the course of the authors employment with the Ordnance Survey Department it is recalled that in the quiet country areas of Sherwood Forest, differing pitches of the popping from of a number of these devices was sometimes apparent - playing a slow but merry tune!

The ram appears to have fallen into almost total disuse by the mid 1970's, following the ready availability of electric pumps, and to major extensions to the water mains system!

The last time that the author could recall a ram in operation was during the early 1970's. It brought fresh water to the Holy-Well Farm to the north west of Ashby de la Zouch. The ram here was fed from Ashby's original Holy Well, which is sited at a deep gully in the fields to the east of the farm. Almost surrounded today by housing development, I was recently assured that it was still in good voice!

Keen to renew its acquaintance, I renewed my own with the farmer. The ram proved to be of a type with which I was not familiar. Obviously a design from late Victorian days, it is in the form of a cast iron pillar topped by a bell housing. It has external adjusters to two valves, and its internal workings are understood to be manufactured largely from brass. It is fed from a dam some twenty feet distant and some three feet higher, through an inclined 3"diameter iron pipe -the water is then forced from the ram through a 1 "iron pipe to supply the farm, and to troughs in the neighbouring fields.

It is believed to be one of only three of its type still operating in the country, and is serviced upon rare occasions only, by a specialist firm based in Kent.

Alas, when the author saw it all was silent, and water was bubbling from a by-pass valve at its base. The ram was obviously in distress. However, on informing the farmers' wife, she set off determinedly up the gully armed with two enormous wrenches - and as I left the farm a few minutes later, I could hear the familiar "Ker-Plonk" sound of renewed activity.

(in the area with which we are concerned in this publication, in addition to the ram already mentioned at Seven Spouts, a pair were depicted on the 1880 O.S. Map to the west of South Wood, where they served the two Pisternhill farms (East and West). Yet another ram was sited in Archers Alders to the south of White Hollows Farm below Pistern Hill on the Ashby Road from Ticknall. Although still in existence, I understand that this ram last functioned in the 1960's, pushing its water uphill to a now demolished reservoir to the north west of the farm. It is understood that yet another was sited on the south side of the roadway serving White Hollows. Incidentally, the farm here also has a shallow, large, round, and brick built well at its north east comer, but this is now almost dry, its aperture covered by a concrete slab. There was In addition, a soft water cestern in the farmhouse basement.

H is understood that a ram existed in the area of Carver's Rocks, near the southern extremity of Foremark Reservoir. This may have served Scaddows Farm.

THE WATERS OF TICKNALL AND CALKE

Chapter 3

SIR VAUNCEY's WATER SYSTEM of 1914.

Around 1913, Sir Vauncey Harpur-Crewe initiated a scheme to take Ticknall's water supply out of the Middle Ages!

With the co-operation of the then local authority - The Hartshorne and Seals Rural District Council - it was agreed that the village should be watered from a number of stand pipes, which would be gravity fed from a reservoir to be served by a wind pump. The original Easement and Layout Plan is in existence, although no accounts appear to remain for the venture.

The Kilmarnock firm of Glenfield and Kennedy Ltd, (Specialists in Hydraulic and Sanitary Engineering, and copies of whose brochures are in the possession of the Ticknall Preservation and Historical Society), were engaged to supply the hardware. The firm produced a vast array of such wares, which are still to be seen today in Suffolk and Bedfordshire, in Newtownards and Dundalk in Northern Ireland - noted even on the streets of Port Stanley in the Falkland Isles, and surviving no doubt, elsewhere in the world.

The original dies for the casting of the iron Self Closing Fountains, as they are officially designated, were known to be still in the possession of Messrs. Bivalve of Clay Cross, Derbyshire, who took over the Glenfield and Kennedy Plant - although Bivalve was itself taken over in 2000. These fountains are referred to variously as pumps or in the case of Ticknall as water taps, or simply as taps.

Operated by a handle, the water emerges from a spout at the mouth of a lions head.to fill any receptacle placed upon the bracket at the base of a fluted pillar. A grid there prevents debris from entering the channel which drains any surplus water.

The pillars, some 3'6" high were fitted with the Kennedy Patent Gun Metal Self Closing Valve, and were considered to be virtually maintenance free. One standing in the village today, outside the Methodist Chapel supports this claim - for it is, surprisingly, still in water today(Aug.2000).

The secondary source of running water for the village emanated from a stream collecting in the area around Spring Cottage, near the point where High Street joins with Ashby Road. There, a number of wells, ponds and drinking troughs appear on the 1/2500 O.S. maps of 1882 and later (see Chapter 1). On the layout plan for Sir Vauncey's scheme of 1914, the description "Drinking Place-to be filled in" appears. To tap into this source, a substantial pump well was sunk in the area close by in 1914. A brief delay was occasioned to the implementation of the scheme at this time, for the carter employed to transport equipment from Melbourne railway station was an army reservist, and it is understood that he was suddenly “Recalled to the Colours" on the outbreak of The Great War.

The well stands today, its brick plinth some 0.3m.above the ground level, having a concrete cap some 4.0m.in diameter.

A wind pump, having a steel lattice tower and fan blades was erected nearby, (the concrete blocks which secured its four feet are all that remain today). Its 4"suction and 3"return pump raised water from the well via a 3" cast iron rising main, to a brick built and grass covered reservoir still lying to the south west of Scaddows Cottage on the road to Hartshorne.

Upon the redundancy of Sir Vauncey's System in 1962, this reservoir was utilised by the South Derbyshire Water Board in association with their new mains, until itself being finally made redundant by Severn Trent Water in 1992.

The pump, being dependent upon the wind for power, was supplemented fairly early on by a diesel engine housed in a brick building (now a stable) built close by.

Close to it today stands another smaller brick building - the former Water Treatment Plant.

Not connected to the 1914 System, to the south of the pump well today stands an electric Booster Pumping Station. This was erected by the South Derbyshire Water Board upon the installation of their new mains in 1962, to assist in the journey of the water to the Boundary Water Tower.

From its high vantage at approximately 430 feet, the reservoir fed the village through a 4" cast iron supply main which headed east towards the village. The tap at the far end of the system at the Melbourne turn stood at around 305 feet. Upon the installation of mains water in the village during the 1962, the original pipes were found to be in remarkably good condition -due, it is believed, to the high quality of clay upon which they were bedded.

Upon the main reaching the Ashby Road near the Ticknall village entry sign a short spur ran to the south, where a tap is to be seen on the west side of the highway. This spur terminated at a recess, still to be found in the watt on the west side of the highway, opposite the outbuildings of Basford's Hill Farm, where a hand pump was already installed. This feature was removed to the opposite side of the wall and into the field, presumably when modern mains water became available, but is not in existence today.

The main also headed north along the highway into the village, where a tap was installed for The Green, with another close by also on the west side of the highway.

A tap not now in existence was sited on the east side of Ashby Road in front of The Cottage.

Passing the site of the spring well housing at Spring Cottage, where Ashby Road becomes High Street, the main fed a tap fronting No.53 High St., and then another standing before No.39. Both of them are sited on the east side of the road.

Crossing back to the west side of the road, a tap is to be found mounted within the 19th. century spring well housing opposite Sheffield House.

To the west of the central junction in the village a tap, now removed, was installed against the north side of the wall of the first house on Burton Road, close to a former and older pump.

The main then made its way east along Main St. (formerly Highwayside), where a tap stood on its south side where todays vehicle entrance to the Stone Fronts cottages is evident.

Reaching Rose Lane, a spur led to the north following that lane, and onwards along Chapel Street, to its end at the wooden entrance gate for vehicles to the Calke estate. (It should be noted that the section of Ingleby Lane from The Wheel (P.H.) to Chapel Street did not come into existence until the 1980's). On this spur, the sole remaining tap is the only one in the village which can be found still in water today. It formed the only source of supply for the Methodist Chapel, until that building was connected to the Severn Trent main in August 1992.

The principal main, passing eastwards from Rose Lane along Main Street fed a tap to the north side of the road outside No.33.

On the opposite side of the road outside No. 38 stands another, its base now well buried beneath the sidewalk.

Opposite The Wheel (P.H.) stands a tap stylishly white painted and embellished by a local resident. The row of cottages at whose south west corner it once stood, being long demolished.

Next comes a tap in Banton's Lane. It is understood to be capable yet of emitting water, although being turned off normally, at the stop cock.

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In a somewhat dangerous position today, on the verge to the south side of Main Street - a tap lies a few metres west of the old schoolteacher's cottage, at the entrance to Calke Park. Fast moving traffic was obviously not such a problem in 1914!

Passing beneath the Archway Bridge of the former 1802 horsed tramway, a tap on the south verge of the road is to be found opposite Arch Farmhouse.

No more appear until shortly before reaching the Royal Oak Garage, where one is to be seen on the south side of the road, sited alongside an earlier hand pump.

Another tap, no longer in existence, was sited adjacent to the wall on the south side of Main Street, and to the east of Horse wash Gate - the entrance to the limeyards.

And lastly, although no longer in its original position due to road alterations - the tap at the Melbourne turn is remarkable in that the pillar, its bracket, and the drainage grid have survived as a complete monument to the system, and are set into the cobbles of the traffic island.

Although not connected to the above system - two more of this pattern of tap were installed near Top Farm, beyond the southern boundary of the village (See Chapter 4).

A total of 21 taps were installed - including the two at Top Farm. Of these 16 remain. All the taps remaining in the village today are on the Listed Buildings Register.

Upon Ticknall and its surrounding area becoming served by the mains of the South Derbyshire Water Board in 1962 Sir Vauncey's System became redundant. Long before that time the wind pump had decayed and been demolished, with the pumping of water relying solely upon the once auxiliary diesel engine.

In that year, in response to requests from local inhabitants the Water Board bequeathed the taps to the village, when the Women's Institute took on responsibility for their care, and following the donation of paint from local builder John Smedley, the taps assumed their present green livery. Since that time the Parish Council have taken over the task of maintaining them.

THE WATERS OF TICKNALL AND CALKE

Chapter 4

TOP FARM and the POTWORKS.

I am grateful for the knowledge imparted to me by Herbert Flint the last farmer of Top Farm. His family had tended its fields for three generations, following the arrival in the village of his Nottingham born grandfather, who took over the farm towards the end of the 19th.century.

Top Farm is situated on the east side of the road to Ashby de la Zouch, and lies a quarter of a mile to the south of the bricks and mortar of the Ticknall village boundary. The farm area is served by at least four principal, and many smaller springs, which emanate from the high ground outlying the prominent ridge of Pistern Hill. Their tiny streams, now mostly piped, eventually feed the string of ponds in Calke Park (See Chapter 5).

The word Top is worthy of some explanation. It refers to the fact that here the village is a little higher than its north eastern - Melbourne - end, which is one and a half miles distant. Historically, the population to the south of the central junction, where the roads from Ashby, Melbourne and Hartshorne meet were known as Top Enders, whilst those to the north and the east became Bottom Enders - these terms are still in use today, but only by a few of the older members of the community.

The first of the Top Farm wells - lying hidden beneath undergrowth today - is in a long disused sand quarry on the western side of the road to Ashby. On the O.S. 1/2500 map of 1882 it was described as a pump.

Its flow was piped beneath the road to Ashby, to run north and parallel to the hedgerow for a hundred metres or so, before heading for the north west comer of the farmhouse. Then, running along its northern face it entered a fresh water cestern (local usage of the more usual cistern!) in the basement, to serve the farmhouse with its fresh water, before overflowing to feed the farmyard trough. From there the flow fed another trough in the yard, prior to its entering a pond some 30 metres to the south east of the house.

The farmhouse basement housed a soft water cestern - this was filled by water collected from the house gutters, and was used specifically for purposes other than drinking.

The farmhouse also had a well - lying today beneath an iron manhole cover outside the kitchen door. Its waters being stained yellow - it was referred to by the farmers here as “The Ockeree Well" - This would have been due to the yellow ochre colour of its source, since it flowed, through an ironstone layer. This water was used only for cooling the dairy, or for swilling down the yard.

The pond mentioned three paragraphs earlier, was also fed by a stream which emerged on the east side of the road, its source being a well - now no longer to be found - high on the hill to the west of the farm. This well was also described as a pump, but as with other similar sources in the area shown on the 1882 O.S. map, this well overflowed - to feed two small ponds close by. It supplied - in addition - fresh water to the farm house.

The farmhouse pond took the outflow (culverted in the 1970's) from both of these watercourses eastwards, beneath Staunton Lane (at an earlier period this was known as Bott's Lane hereabouts - from a family cottage long since demolished!), and the 1802 tramway embankment - beyond which it continues today, meandering across the fields before joining the White Hollows Brook in Gorsey Covert-

To the north of Top Farm today lie four cottages.in addition to the former potworks and the house of its one time owner, Pottery House - which stands back from the west side of the highway.

This works was the last of some ten potteries known in the village, and which closed circa 1900. The footings of two bottle kilns were found at the networks site, prior to its being rebuilt as a dwelling on the original foundations circa 1993.

Both house and works had their own wells.

A spring which is no longer to be found today emerged towards the summit of the small, low and long Hazard Hill (it was called Hashaw Hill on the Tithe Map of 1843!). It is remembered by Herbert Flint as being the source of supply for the steam agricultural engines, which worked the farm as late as the 1930's.

In 1871 this spring was piped to feed a spring well housing for public usage, built by the Harpur Crewe estate on the north side of the highway, and which was described on the 1882 map as a trough. Estate records and accounts of the time refer to the construction work "At the top end of Ticknall", and record that profiles were constructed in the estate yard for the archway of the well housing. The brick structure with its stone coping had its supply cut off from the spring in the late 1920's, in order that the water might swell the tiny Willowbrook on its passage towards the former potworks, which was by this time functioning as a smallholding.

The housing, which was once adorned with wooden doors, is the property of the Harpur Crewe Estate. It was refused an application made during the 1990's to be placed on the Register of Listed Buildings. It has recently (August 1999) been restored, with the assistance of grant aid from the District Council, the Ticknall Parish Council, the Ticknall Preservation and Historical Society, and the Ticknall Open Gardens Association. The housing is today served with water collected through pierced culverts in the surrounding meadow.

The piped source to the well housing once served a 1914 type water tap which - when in service - stood at the roadside, but has since been removed and is now close to the S.E. corner of Willowbrook Cottage. and has now been painted white as distinct from the original green Harpur Crewe Estate livery of the other taps in Ticknall.

Another similar 1914 type water tap was also served from this source, and was located on the grass triangle at the junction of Staunton Lane and Ashby Road. It disappeared at the time of the introduction of mains water into the village by The South Derbyshire Water Board in 1962.

The tiny Willowbrook issues to the west of the cottage of that name, from an unknown source to its west on Hazard Hill. It is understood that its present name was instituted in the 1960's by Mr. Rice, the then owner of the cottage, which he had named Willowbrook. The stream had previously been known as Hashaw Brook.

Willowbrook runs to the north east from its point of issue - and is not always to be seen above ground - towards the potworks, before being piped beneath the highway to the south of the cottages at the east side of the road, and beneath the embankment to the former tramway to sink- originally - into the field beyond. It then made its hidden way north eastwards again, to join the Basfords Hill Brook at the north west comer of Jubilee Plantation. However the section of the stream between the highway, the embankment and its point of sinking in the field was culverted entirely, circa 1970.

Top Farm and its outbuildings were converted into attractive dwellings in the early 1990's.

THE WATERS OF TICKNALL AND CALKE

Chapter 5.

The WATERS of the ESTATE, of CALKE PARK and CALKE MILL THE STREAMS.

In addition to the previously mentioned Scot's Brook, and the waters associated with Ticknall and its limeyards - there are four other named streams which are of importance to Calke Park, and the Harpur Crewe Estate. Red Brook and White Hollows Brook traverse the area known as Southwood Common, whilst Basfords Hill Brook crosses the former Ticknall Common.

The last stream, New Brook, now ties beneath the waters of Staunton Harold Reservoir.

RED BROOK (formerly Alderbrook and more anciently Alrebroc).

The most southerly of these streams is Red Brook which, in its ancient form, appears in the description of the southern boundary to lands allotted in the 12th.century to Calke Priory.

Rising below the high ridge of Pistern Hill in the area north west of Heath Farm is a plantation of Alders - the major source of the stream flows from here to the north east and passes to the north of Southwood House, before being culverted beneath Staunton Lane - where a section of the course was at one time known as Taft's Brook!. It then runs generally to the east, passing through the Heathend Plantation, towards the south eastern extremity of the estate. Crossing then beneath Heath End Lane to the north east of The Saracen's Head (P.H.), it is joined by other small streams, including Heath End Brook, which flows north east from its source at the edge of South Wood (anciently called Sudwe or Sudwude in grants of land to Calke priory in 1136). This source lies to the north east of the lonely former gamekeeper’s cottage at Wicket Nook. Hereabouts in the 18th. and 19th. Centuries up to 17 further properties were recorded.

Red Brook flows on north eastwards from the public house, until it floods the long disused quarries of Dimminsdale. Often abbreviated to Dimsdale today, it could well originally have been Demonsdale. It is suggested by Philip Heath that the name could have been an allusion to the "demonic and hell-like fiery glow" which, with its associated dense smoke, emanated from the lime burning kilns in the area during the 18th.and 19th. centuries.

These quarries-which produced mainly lead and limestone, are understood also to have yielded a small amount of silver. They belonged for the most part, to the estate of Earl Ferrers of Staunton Harold, although their extent to the north of the Red Brook was a part of the Calke estate, where the workings were once drained by a donkey wheel.

When active, the main quarries to the south of the stream required the services of a Newcomen steam pumping engine, to evacuate the waters from the workings. Although an old rumour has it that the remains of this engine still lie beneath the waters today, only pipework and possible machinery mounting blocks in concrete foundations were seen by Robert Bentley, when in his younger days he visited the site whilst it was pumped out during World War 2, for resource evaluation.

Red Brook flowed out of Dimsdale to join the Staunton Harold Brook (as is mentioned in Chapter 1) at the same point as the now inundated New Brook commenced. This stream was originally a part of the old Alderbrook, todays Red Brook. The confluence was close to the southern extremity of the present Staunton Harold Reservoir today.

WHITE HOLLOWS BROOK. (formerly Sedgebrook and more anciently Seggburgebroc).

The second of the streams lies more northerly, and is today named White Hollows Brook.

Again, its ancient name is described in the northern boundary to the lands of Calke Priory.

The waters are collected from the lower slopes of Pistern Hill, where a number of springs emerge, some of which are mere seasonal weeps from the soil. These sources almost surround White Hollows Farm. Further descriptions of the waters around this farm are to be found in "Notes on the Hydraulic Ram" at the close of Chapter 2.

A Calke Estate (now N.T.) property in this area is Tadsor Farm. The name is a corruption of Tatsall (itself a corruption of Tattershall) Fee, to which estate, formerly of Breedon Parish, this farm once belonged. It lies high up on the slopes of Pistern Hill to the west of the highway. As far as can be ascertained it was served only by a well - prior to the arrival of mains water.

The 3'wide and 60'deep welt became the scene of a tragedy on August 17th. 1955, when Messrs. Ward and Wileman (employees of T. Hopkins Ltd. Builders of Ashby) working at the shaft bottom, became overcome by gas. Called to attend at the emergency, Dr. Mark Baker, in disregard for his own safety descended the shaft, to be himself overcome. His devotion to duty is recorded on a memorial plaque which is to be found in the hospital at Ashby de la Zouch.

Some two hundred metres to the north of Tadsor Farm lies a hovel bordering a stone and brick built compound. The book "Ticknall Pottery" by Howard Usher, suggests that this may have been the Myreoake Potworks worked by Samuel Potter who died in 1688. Were it to be verified, this would constitute the only industrial building (apart from the near complete rebuilding as a house in 1993, of the potworks near Top Farm), known to have survived from the days of the former pottery industry of Ticknall. A green road, Mere Oak Lane, a section of which constitutes the parish boundary, is located along the ridge of Pistern Hill to the west of both this compound and Tadsor Farm.

The Myreoake Potworks was served by a spring which appears on the old O.S. map, just a few metres to its south, although it is quite likely that it’s original source may have issued to the north of the compound. The water from this source flows east and is culverted today, prior to joining with the other headwaters of White Hollows Brook.

The collected waters of White Hollows Brook flow on to the north east - passing to the west of White Hollow Farm (no "s" to the Hollows for this establishment), standing to the west of Staunton Lane - through an uneven field known locally as Humps and Hollows. This name refers to a small parcel of land which was not neatly reinstated - as is the practice today - following the claiming of quantities of clay in the area during the 18th.and 19th.century. The product being used by some of the potteries of Ticknall.

It is believed by some that it was from this product that White Hollows derived its name, but some old estate records refer to "White Hollys". However the author is tempted to believe the views of some of the farmers hereabouts who - being well acquainted with early rising - are well used to seeing the lands beneath Pistern Hill - which encompass a considerable part of the area known as Southwood Common - enveloped in a ground hugging white mist. This occasional shallow shroud is also to be seen, under the right conditions, from the high section of the road between Ticknall and Ashby de la Zouch. (In fact the author last witnessed such an event, on his return to Ticknall from Ashby at 8.45pm on August 25th.2001).

Flowing on north eastwards and passing beneath Staunton Lane, the stream continues along the southern boundary of Gorsey Covert before entering the wood of Poker's Leys, where it is joined by another stream - Basfords Hill Brook.

BASFORDS HILL BROOK.

This, is the third and most northerly of the streams on the western side of Calke, and traverses the area known as Ticknall Common.

It emerges from a northern outlier of Pistern Hill, by the north east corner of the covert known as Smith's Gorse - which is to the south of the Scaddows farmhouse. All the

wastelands (non-arable land) named "Schadhawe" ("hawe" meaning a hill) in Ticknall, were given by Edmund, Earl of Arundel, to the priory of Repton in 1312.

The stream flows from this source in a north easterly direction, passing close to the site of a long demolished cottage, which was named as Hazard-hill on the 1/2500 O.S. map of 1882.

The building stood towards the bottom of Hazard Hill itself, (a distant outlier of Pistern Hilt,) which earlier had the name of Hashaw Hill, according to the Tithe Map of 1843 - and lay close to the small plantation of Shaw's Croft. (A "shaw" is defined as a small copse or wood) - but it could equally well have been dedicated to a local family, since a John Shaw farmed at nearby White Hollows in 1820?)

The cottage, being in a lonely situation, was designated during the 19th-century to be the Isolation Hospital for Ticknall. It is understood locally that its last "Incumbent Carer" also doubled up as a washerwoman for the village. The potential consequences of such a combination of roles are best left to your own imagination

The stream continuing eastwards crosses beneath the road to Ashby - to the south of Basfords Hill Farm - The ford here is long since gone, its one time hollow now carrying a causeway, for the convenience of today's travellers.

The now piped section of the tiny Willowbrook (mentioned in Chapter 4), joins Basfords Hill Brook close to the north west comer of Jubilee Plantation along whose northern boundary the stream flows, before it joins with White Hollows Brook in Gorsey Covert.

The fourth important stream was of course NEW BROOK, which has been mentioned previously in this Chapter, and also in Chapter 1. This lay on the eastern side of the estate.

STANDLEY's BARN.

Before leaving this area it would be foolish not to mention a unique site understood to have been constructed by the innovative agriculturalist and 9th.Baronet Sir John Harpur Crewe. He followed his father Sir George, who had done much to bring Calke out of a long decline, Sir John was squire of Calke from 1844-1886, and was influenced by the famous agricultural giant Robert Bakewell, of Dishley Grange near Loughborough.

Sir John famously developed the flock of Portland sheep at Calke, gaining many prizes, and was particularly successful with his herd of Longhorn cattle at the best agricultural shows.

Both of these groups of animals had been introduced to Calke, together with a herd of deer, by the 6th. Baronet Sir Henry Harpur, who died in 1789.

The base for the Longhorn herd was at Standley's Barn, some half way along and to the north of Staunton Lane. Additionally on the estate at this period, a Jersey herd was based at Home Farm, whilst White cattle were housed in hovels on 25 acres of fields at the southern extremity of Melbourne Common. This area was however known to the Bentley's as Calke Common, since it lay to the east of New Brook adjacent to Calke Mill.

A visit to the Standley's Barn site was made in June 2000 by the author, in the company of Bill Moffat a N.T. Volunteer, and with Norman Clarke, the former manager of Home Farm, Calke. Norman recalled that some now mostly ruinous farm outbuildings here were built with the wide doors required to accommodate the fine Longhorn's with their handsome appendages.

Of passing interest at this juncture - The author believes that tiles from these then decaying buildings were used during the 1920's, to replace the former thatched roof of Lady Crewe's

Cottage opposite the Ticknall Lodge. The father of Olive Wardle, the present secretary to the Harpur Crewe Estate, was employed in his youth by the estate on the refurbishment at that time, when the character of the building was further ruined by the replacement of its windows with Crittall metal frames.

At the time of writing - in the summer of 2000 - the author is delighted to report the (perhaps temporary) re-introduction of a small herd of Longhorn's into the Park by Farmer Hallifield and his wife, who currently reside at Standley's Barn).

The WATER MEADOW at STANDLEY's BARN.

An interesting feature, which has obviously not been in use for well over a century, but which was not in the opinion of the author in the strictest sense of the term a water meadow, since it slopes very gently down to the north, and so may not have been enabled to be totally flooded for an extended period.

More property perhaps, it might perhaps be better described as an irrigated meadow, which is situated to the north of Standley's Barn.

A sluice in Archer's Alders at White Hollow's controlled a flow of water through ditches to cross beneath Staunton Lane, then via a brick culvert to sluices in a substantial (3 metre wide) ditch, running from west to east in the field to the west of Standley's" Barn, where it terminates at a catch pit for the effluent from the farm. The water level in this ditch could be controlled to enter, through grills, at least six parallel brick culverts going northwards through the field from the ditch. (We had the benefit of a National Trust survey conducted upon the site in 1987 to guide us, at which time only two culverts were recorded).

At distances of about 25 metres along these culverts, were short brick shafts to the surface which, upon the removal of a square wooden bung, allowed the stored head of water to flood into the surrounding meadow.

This would have been beneficial for the early growth of pasture for the cattle, which may have assisted in providing winning qualities to the show animals.

A bank at the north end of the field contained the flood waters, and directed them to a brick culvert before they entered the wood of Poker's Leys, through which they continued by open ditch until regaining the course of the White Hollows Brook.

THE STRING OF PONDS in CALKE PARK.

These are mostly man made creations, which follow the course of the foregoing combined streams on their way through Calke Park.

Emerging from Poker's Leys, White Hollows Brook enters an inadequate silt trap to the west of the main drive to Calke Abbey. It then loses its name as it fills the first of the string - Betty's Pond - which lies to the east of the main entrance drive to Calke Abbey. It is one of a series of ponds created over many centuries to enhance the Park, as the waters flow down a steep sided valley.

Exactly who Betty was has never been understood, and when initially established in 1741 it was much smaller. It would seem to have been about a half of its present length, commencing at its present western end. The 1/2500 O.S. map of 1882 shows it much as we find it today -The O.S. map of 1966 however reveals that it was shorter at that date at its western end. Despite the silt trap constructed on the western side of the driveway, prior to the stream entering the pond, it is hardly surprising that this pond collects the bulk of the silt from the fields to the west - so it may have been altered in outline somewhat over the years, following occasional silting up and subsequent dredging operations. It was last dredged - but only partially and at its western end, in 1988 - when the silt was deposited in the quarry to the north of the weir. Bob Bentley recalls a raft being kept in the pond, presumably for reed cutting.

A previous occasion was in 1958, when the Boy Scouts who traditionally spent their

summer camp in the Park, were successful in locating and removing - through the collected sludge and foliage - the large oak bung to the drainage pipe which is to be found in front of the dam. The draining enabled a dragline excavator to be employed by the contractors Messrs. Bamford and Carr, the silt being deposited on the slopes to the south.

Present at that time was the famed estate gamekeeper Agathos Pegg, then in his 90's - who recalled another occasion some 80 years before, when large numbers of "Navvies" were employed to barrow the silt - also deposited on the southern slopes. "Ag." died in 1963.

A further dredging took place during 1969/70, when two much modified steam traction engines were utilised - again operated by Messrs. Bamford and Carr. They sported Rolls Royce engines. (These may well have been Meteors, which had been fitted to many World War 2 tanks-being a more tractable 600hp version of the famous Merlin aircraft engine).

The silt was removed by dragline, to be deposited on the southern banks of the pond. For this exercise Severn Trent Water co-operated by removing and returning the fish population.

Prior to the advent of more intensive arable farming in the 1950's, the problem of silting was apparently much less of a problem, since most of the land was under grass and supporting dairy herds - when the streams ran, purportedly, crystal clear!

In addition to the main flow, a tiny stream enters Betty's Pond close to its western end, down a blind valley to the north, where its source appears to originate in the wood called The Rookery. The original Dairy House for the estate was sited in this wood, and a few remains of this still exist. It was replaced in 1779 by the New Dairy (the present Home Farm) which was lined with white tiles from the Wedgewood factory. This was in the then village of Calke.

Betty's Pond outfalls today at its later, extended eastern end, where a wide embankment carried an earlier carriage drive to the house. Although still marked as a trackway on the 1882 map, its passage to the south of the ponds had been downgraded to a path on the 1966 map, since it then had to pass through a surviving iron pedestrian gate.

Beyond this point the valley sides become much steeper as the water from the weir falls into the Thatch House Pond of the mid-18th-century, which also was later enlarged. The pond owes its name to a summer house built by Sir John Harpur for his wife - Lady Catherine Crewe. As Dame Catherine - she was to give her name to the Dame Catherine's Trust, which she set up for the establishment and maintenance of a school in Ticknall. The trust remains today, as the basis for funding the independent and free Dame Catherine's School, which is so much a part of Ticknall village. The remains of some steps leading to Lady Catherine's Bower from the pond, together with some of its foundations, are all that survive today. The pond was dredged in 1999, the silt being deposited some way to its south west, over the northern end of the field to the south of the main drive to the house.

In the open field named The Linge, to the north of the pond is a tiny but constant spring which serves a cattle trough there, its hidden outfall presumably reaching eventually to Thatch House Pond.

A weir in the dam at the eastern end of this pond overflows into the last of the series to be engineered. The Mere Pond of Sir Henry Harpur appears to have been constructed around 1800. To its north lay the intriguingly named Castle Hill. Somewhere hereabouts, until the 17th.century was Cheriston Castle, possibly an adulterine (unlicensed) structure, of which there is no sign apparent today.

In the dam to its east a weir was constructed. From this there were once plans to construct a cascade - although there is no evidence that the work was ever put into action to its planned to its planned outfall at the southern corner of the next water, China House Pond.

This pond, fed from the dam at the foot of Castle Hill, is probably mainly natural, and almost certainly the oldest of all, being dated at least to The Middle Ages, and having originally been named Castle Pool. Its name since 1747 - when it was extensively altered - has been China House Pond, for a summer house in the elaborate Chinese style was

constructed here by Sir Henry Harpur upon an island, its roof graced by a weathervane made by the famous ironsmith Robert Bakewell. Sadly nothing of this structure now survives, but a grotto of the period remains on the northern bank of the pond.

At the south eastern extremity of China House Pond is an embankment upon which was carried a bridleway named Bridle Gate. This later became the carriage drive from Calke House towards Melbourne. Twin tunnels in the embankment allowed water to drain into the next pond of the series, Little Dog kennel Pond. However, upon the construction of the Staunton Harold Reservoir a Hydro generator Station was built upon the south west bank of China House Pond (see Chapter 7). The embankment then had a concrete bridge built above it to carry the drive, with a weir at a lower level - the old tunnels being retained as an emergency overflow.

Little Dog Kennel Pond dates from at least 1743. Unsurprisingly, it once had dog kennels located beside it. However, new kennels were constructed by Sir Henry Harpur around 1790, about a quarter of a mile to the north east. The eastern end of this pond finds yet another embankment. This once carried the old road from Calke village - which passed the New Dairy (the present Home Farm) - on its route northwards to Melbourne, prior to the re-siting of part of Calke village when the estate boundaries were extended circa 1779.

This pond was the scene of a tragedy in the winter of 1840, when the bodies of two local 15 year old boys were discovered beneath the ice, after their having been missing for nine days. They are believed to have gone sliding on their journey home from work. Their joint grave is to be found in Ticknall churchyard.

The waters of Little Dog kennel Pond discharged over a weir in its dam into Big Dog kennel Pond. The latter was by far the largest of the series, but was to become entirely inundated by the waters of the Staunton Harold Reservoir, following its construction between 1957 and 1964.

At its eastern end, this pond was contained by an embankment, upon which ran the new road, resited in 1779, from Calke to Melbourne. The course of the carriageway can still be seen entering the waters of the reservoir today, if one ventures down the footpath north from the car park which overlooks the extensive waters.

At the south eastern corner of Big Dog kennel Pond, a weir discharged the waters through a small cascade into the south western comer of the smallest, the last, but certainly the most important pond of the series - the Mill Pond, which served the flour producing Calke Mill. At its south eastern corner the Mill Pond was also entered by a fleam (described as Mill Lead on the 1882 O.S. map and on others as Mill Lede !), which was sourced from the New Brook on its journey from beyond Staunton Harold to the River Trent (see Chapter 1).

CALKE MILL

I have mentioned before that it has been my privilege to speak with Mr. Robert Bentley and his wife Joan. He is the son of the last farmer to work the fields about the redundant Calke Mill -Branches of his family have been connected with the Calke estate since 1730, when they established themselves as blacksmiths, wheelwrights and builders at Swarkestone. Their premises on the north bank of the River Trent there were close to the later - and now redundant canal lock - where the Trent and Mersey Canal was, for a short period connected to the River Trent. At that time the Bentley's also became involved in boatbuilding.

The remains of the demolished mill, its earthen banks and its sluices lurk yet beneath the waters of the Staunton Harold Reservoir, and are on odd occasions still to be seen, when its water level drops occasionally, to a dramatic low.

Robert's uncle - Jack Wain - produced a history of the mill in 1938, which claims that it was operating prior to 1400, when it is fair to believe that it would have belonged to the priory cell of Calke - although it is not known whether the monks ever actually operated it themselves.

It is certainly recorded in 1589, and was purchased by Sir Henry Harpur in 1789.

Robert recalls an incised stone on the millers house, (used also as a farmhouse), stating that it had been rebuilt on the same site in 1734. The stone walls of the mill itself were some 2'3" thick.

Incidentally, a water miller had an absolute right in law to receive a constant supply of water "without hindrance" - A right which is still broadly applicable today.

After 1789, the miller at Calke operated under a lease from the estate, and when Sir George Crewe was the Squire the mill was refitted by John Harrison of Derby in 1837. The old wooden mill wheel being upgraded with a massive undershot metal replacement. Water from the milt pond passed through what was Bob Bentley knew as "the race course" to fill a tank placed above the wheel. From this the water was directed to the side of the wheel and into its buckets. The flow was regulated out of the tank by a geared sliding shutter, to vary the speed of the mill. Following its exit from the mill, the water flow was known to Bob the" mill race".

The new wheel had a diameter of 25 feet and was 6 feet in width, having buckets placed some 18" apart. Such was its power potential that 4 sets of gears were installed to drive 4 sets of millstones. Such a load would have required substantial water power. The metal wheel continued in use until becoming beyond repair in 1916.

It would appear that filling the mill pond was often a problem due to the silting up of the ponds. During the 19th. century New Brook which ran past the east of the mill to the north. Was for many years diverted permanently from its normal course, to run through the Mill Lead from its sluice to the south of the mill, to feed the mill pond at its south eastern comer. (The diversion broke down after many years, returning a partial flow to the old stream course as well as continuing to flow along the Mill Lead).

At its south western comer, the mill pond was fed from a weir, as well as by three culverts through the dam of "Big Dog Kennel” pond. The most northerly of these appears to have been the most used, when the water flowed through an iron grid upon the raising of the sluice gate. The dam carried the road from Calke to Melbourne and it partially collapsed under the pressure of silt and water from the pond before it in 1932. Halfway along the dam was a ring attached to a large wooden bung. Removal of the bung was needed on occasion, to facilitate the draining of the pond when removal of the silt was required. The mill area was again flooded through some unknown cause in 1938.

Such was the hindrance caused by silt in the ponds to the passage of water, that a steam driven pumping engine was installed next to the mill early in the 1800's, in order to increase the head of water in the mill pond. It is understood still to have been in operation in the 1890's.

Sir Vauncey Harpur Crewe had at one time forbidden the miller (Robert's Great Grandfather, Arthur Shaw), to release any water from "Big Dog Kennel Pond". However Arthur is understood to have used the cover of night to raise the sluices “for a quick fix” to the mill pond, at which time he was also believed to have operated the milt.

Arthur Shaw had been apprenticed to the miller at Alrewas (Staffordshire) in 1840. There he obtained his Indentures as a Steam, Wind and Water Miller in 1850, before becoming the miller at Repton.

Following contacts he had made with the Harpur Crewe family whilst working at Repton, he was invited to take over from William Bailey in 1880. William departed to manage the steam driven mill ((later electrified) at Smisby. Arthur was to stay there until his death in 1901.

The author wonders whether William was in some way connected to the William Bailey who was consulted regarding water supplies to Calke in 1815. (see Chapter 5 - Additional Supplies).

Arthur married Eliza Startin of Bretby at Burton upon Trent in 1858. (Bob has in his possession a fine white mug, a contemporary fashion in recording such an event).

Mr. Turner took over at the Mill 1902, when due to declining efficiency; the milting was reduced to cater only for tenants of the estate.

Bob's grandfather, John Bentley, took over the Mill in 1930, farming it in conjunction with "St. Bride's"(which lies to the north east of Ticknall). It was upon his arrival at the mill that the wheel was discovered to be irreparably broken.

His son Frederick took over the farming at Calke, whilst another son Redvers, took over the farm at St, Bride's.

Frederick retired in 1958 to become the grave digger at Chellaston, since the plans begun in 1952 for the construction of Staunton Harold Reservoir were by then being implemented. Robert removed at the same time to become the farmer at Heath Farm, which lies high up on the slopes of Pistern Hill.

During the 18th-century there were some four cottages in the vicinity of the mill.

Other WATER SOURCES in the PARK.

To the west of the Dog Kennels, which were built around 1790, two small springs which fed reservoirs are shown on the 1882 O.S. map. Only one survives today - its source covered by a concrete slab. The water here being but a foot below the ground surface, is carried away via a lead pipe. At one period it served the white painted Melbourne Lodge which was built in 1926 to house George Fathers, chauffeur to Colonel and Mrs. Mosley of Calke from 1927 until 1948. George had served in the army with the Colonel, being his driver and batman. Today the pipe discharges into the Staunton Harold Reservoir.

A privy complete with bucket survives at the Dog Kennels.

The other reservoir which supplied the Dog Kennels and Derby Hills Farm was located to the north east of the first, but this no longer exists.

OTHER PONDS in CALKE PARK.

There are a number of other ponds in the Park, most of which are the result of various forms of quarrying. The water which fills them appears to emanate naturally from the water table and does not appear to have any flow. The largest of them is to the west of the main driveway from Ticknall Lodge which is named The Lime Avenue; this pond has formed in a former marl pit.

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Chapter 6

CALKE PRIORY. CALKE VILLAGE and its GREAT HOUSE.
The Supply to CALKE PRIORY.

It was Richard, the 3rd. Earl of Chester who, at some unknown date between his coming of age in 1115 AD and his death in 1120 AD, endowed the Priory of St. Giles at Calke - for Canons of the Augustinian Order.

Richard was drowned in the English Channel, in the company of many other of the younger members of the Royal Court who had embarked on "The White Ship"

She was wrecked on rocks shortly after leaving the port of Barfleur. It has been said that the voyage had been undertaken in a vessel ordered unexpectedly to sea, and was in the charge of a drunken pilot.

It is unclear as to how far construction work on Calke Priory had advanced, before the Countess Mathilda - widow of the 5th. Earl of Chester - decided to re-found a Priory on the site of the former Anglo Saxon joint Monastery of Repton, which had been destroyed by the Danes in 874 AD. She stipulated that the new foundation should be staffed by the Canons of Calke.

Accordingly, the Canons of Calke removed to the Priory of The Holy Trinity at Repton in 1172 AD, to buildings already to some extent completed. Calke then reduced to being just a cell of Repton, was to function from that point on as a farming estate - although both Canonries were named jointly on documents for many years, following the removal from Calke.

That the Priory Church of Calke and other monastic buildings had been commenced prior to the removal of most of the Canons to Repton seems certain. The vaulted cellars beneath the north wing of the present house, appear to be of the post Elizabethan era, but could conceivably owe something to an earlier age, and have been the basis for an undercroft. Also, the courtyard plans of later houses on the site would appear to correspond with the expected position of a monastic cloister in relation to such a church. Some confirmatory evidence for this appeared in 1986 when drainage excavations adjacent to the east front of the present house revealed 12th, 13th-century and later relics - including carved stones, floors and the remains of substantial masonry walls.

Since it would have been sensible at the time of a monastic construction, for at least some of the domestic buildings to have been built for use as accommodation by the builders, it is reasonable to assume that they would have occupied the area beneath the present east and possibly even the south wings of the present house.

A prime requirement for the siting of any monastic establishment was that there should be a ready supply of fresh water. A running stream would be utilised for the collection of water for drinking, cooking and washing - prior to its reaching the toilet facility, there to flush the culvert beneath the reredorter - the name given to the toilet facility attached to a monastic dormitory.

It is believed that the stream which fed Calke Priory is one that is difficult to imagine today, since it has long been culverted. It would appear to have collected from a scattering of tiny springs which erupt, according to Norman Clarke (the former manager of the Harpur Crewe Home Farm), towards the head of the blind valley lying some half a kilometre to the south of the present house. Close to the planting known as Ladies Close water travels north beneath the valley floor, and is to be found flowing strongly beneath the concrete cover of a deep manhole on the west side of the track, and opposite the deer shelter. (This manhole figures importantly in later text of this chapter, under “Additional Supplies"). Some of the springs about Ladies Close flow to the south, where they feed the present Red Brook.

Further to the north, three iron grids are to be found in the grass, to the west of the main drive and opposite the present iron gated drive to the house. Today these grids appear to take surface water into the culverted stream - which goes on to flow beneath the gates. Formerly the stream would have gone on to serve the monastic site.

From these gates, the stream today makes its hidden way across the south front of the house, close to the now grassed drive which led north eastwards and towards Melbourne. To the north of this drive and some 80 metres to the east of the house, a presently ruinous grotto was built in 1809, its pool being at the original floor level of the valley and fed by our stream. The water then passing beneath the deer enclosure to discharge into Little Dog kennel Pond via a substantial culvert, at a central point along the western side of that pond.

The HOUSE at CALKE.

I am indebted to Howard Colvin's book “Calke Abbey, Derbyshire” and to Philip Heath, for much of the detail regarding the history of Calke. My grateful thanks are also due to Bill Moffat (N.T. Volunteer at Calke) for his wide ranging water researches there, which have been invaluable. Also to Betty Cawte (N.T. Volunteer at Calke) for her imaginative research and art work

The monastic cell of Calke was dissolved - along with Repton Priory - by King Henry VIII in 1538, by which time all such estates had been confiscated by the Crown. This had followed upon a first threat for its dissolution in 1536. The occupation of Calke from hereon was to become somewhat complex.

In 1537, following the first attempt for its dissolution, and in a bid to raise the money which would give the establishment at least a temporary respite, the canons had granted a 99 year lease on Calke to a John Priest (or Prest) of London - in return for a substantial down payment. Following this he took up residence at the property. However in the following year Calke suffered dissolution anyway!

Priest continued to enjoy the lease, adapting the monastic buildings as his dwelling and for farming use, until his death in 1546. His will wisely stipulated that the residue of the lease be enjoyed by his daughter Frances, and also that his wife should be allowed to live at Calke for the remainder of her life. His wife was to die (having remarried) in 1549 - following which event Frances and her husband William Bradbourne took over.

Repton Priory had been dissolved in 1538, Repton itself being acquired by the steward of Thomas Cromwell - Thomas Thacker. He put in an abortive bid for Calke, but its freehold was granted to the Earl of Warwick, even though it was of course already subject to the lease to John Prest, with no rent being due until 1596. The Earl quickly sold the property on to John Beaumont of Grace Dieu in Leicestershire.

Beaumont sold the freehold in 1573, and by 1575 Richard Wendesley, twice times M.P. for Derbyshire, had also acquired the lease. Whilst dwelling at Calke, Richard was to carry out substantial building works. He was heavily involved in lead marketing, and used the property as security for his deals. Among other persons, Calke was mortgaged to Robert Bainbridge, thrice times a Derby M.P.

It was to Bainbridge that Calke was sold in 1585, when he took up residence there. He died in 1615, following which event his son Robert sold it to Henry Harpur of Swarkestone in 1622, when development of both buildings and estate occurred. In 1626 Henry secured the hereditary title of baronet. This was a dignity introduced by James 1st. to raise money - for those who could afford the fee of £1,095, and who owned land worth at least £1,000 per annum!

The major rebuilding of the house as we know it today was undertaken by Sir John Harpur the 4th.baronet, between 1702 and 1704. The present stable block was constructed between

1712 and 1714, and presumably included additions to the existing farm buildings.

Even prior to this time, the original tiny stream must have proved to be totally inadequate for the activities of an expanding farming estate, with its mounting agricultural and human needs.

As far as the name of the parish is concerned. It would appear to have derived from the chalky nature of the local limestone, and to have varied between Calke and Caulke - whilst following the demise of the priory the house itself has, over the years been described variously as Calke Hall, Calke House, or simply as Calke.

The Harpur's were to grow ever wealthier over the years and became, after the Dukes of Devonshire, the largest landowners in Derbyshire.

It was in 1808 that the then baronet Sir Henry Harpur, aspiring to a rank greater than his baronetcy, petitioned for the re-establishment of the Lordship of Crewe. but in this he was not successful. However he had already adopted the name of Crewe, which was that of his great grandmother, who had been a co-heiress of Lord Crewe. He hoped that this double name would be maintained by the family, decreeing also that the house be called "Calke Abbey"!

In monastic terms an abbey - staffed by monks and with only a few priests to perform the holy offices, was usually deemed to have a higher status than a priory - which was staffed solely by priests.

In fact the name of Harpur, from that time onwards dropped slowly into decline, except on official documents. His grandson Sir John, who died in 1896, appears to have called himself Harpur - Crewe again, as did his son Sir Vauncey, who died in 1924.

Since Sir Vauncey's heir Richard had, sadly, died from cancer in 1921 - the estate passed on to Vauncey's daughter Hilda, who was married to Colonel Godfrey Mosley.

Upon her death in 1949, the estate passed to her nephew - Mr. Charles Jenney. Following his appointment as High Sheriff of Derbyshire in 1961 - he changed his name to Harpur - Crewe, as did his brother Henry, who was to hold the estate following Charles death in 1981.

It was Henry Harpur - Crewe who found himself faced with the necessity of relinquishing an impoverished estate to the National Trust in 1986, due to crippling Death Duties.

ADDITIONAL SUPPLIES for a Growing Household.

Even before the demise of the Priory Cell, the developing farm would have been anxious to add to its water supply, although there is no recorded evidence to this end.

At the time of the rebuilding of the present house at Calke, a letter dated Nov.18th.1701 in the Melbourne Hall records contain a postscript by George Sorocold - a famed Water Engineer of the day. who had in that same year completed a pumped supply for Derby - His writings indicated that" Machanicks" were at that time being employed at "Calk", but there is however, no indication as to the object of their employment.

The next recorded date of any water related activity comes from the Harpur Estate records between 1739 and 1741 - when a disbursement of two shillings was paid to “collier boys" by John Binton (or perhaps Banton, a local name), for "Cryping the sough from Water House to Paddock Hedge". (Crypting or Vaulting is a building technique, and a "sough" is a man-made tunnel for the passage of water!).

The A/C's for 1748 to 1753 record a payment to John Banton of two shillings and six pence, for two days "work for opening sough - Taft's Brook to the House".

Both of the above items obviously indicate small repairs to the same feature, indicating the

sough to be of an earlier date. Maybe its construction extended back even to monastic days?

The stream named Taft's Brook above, applied for a time to a small section of Red Brook (the old Alderbrook!). Along its northern bank in Heathend Plantation some stone remnants are to be found. These may have been from a former bridge, or were perhaps part of a Water House close to it, built to receive water from the brook at the southern end of the sough, for to its north lies a field named "Old Paddock" on Wyatt's Map of the Lordship of Calke, dated 1761. However, due to the levels involved, the author believes that the Water House may perhaps have been situated further to the west of this point. It is hoped by those interested, that Dowsing may soon reveal the exact location of the sough.

The sough would have been cut through the hill to issue perhaps, near the manhole opposite the Deer Shelter, which was mentioned previously in this chapter. Here it would have joined with the course of the original stream which served the priory. This has yet to be confirmed.

The combined streams then flowed north to a pond feature with a straight northern bank on the map of 1761, which lay to the north of where the iron gates to the house stand today. This would certainly have been the reservoir which served the house at that date, and may possibly have earlier served the Priory Cell. Upon the demise of this reservoir, it is believed that its site continued to operate as a water source, becoming known as the Iron Gates Spring.

There were two significant structures on the roof of the house, which may have been constructed at the time of the rebuilding of the house in 1701, but are certainly recorded between 1770 and 1780. These were two 600 gallon water tanks, which were fitted with water collected from the vast expanses of the roof, to be used for washing purposes, and for flushing the lavatories etc. They disappeared at the time of the re-roofing of the Abbey in the late 1980's.

At some unknown date - but probably during the period of the major rebuilding of the house about 1701 - a substantial brick vaulted reservoir was constructed to serve the house, stable block and farm. It was established a few metres to the north east of the brick compound known today as Mason's Yard - but which was originally a coal yard. Norman Clarke recalls the use of the reservoir as a soft water cistern, its waters during the 20th-century being collected only from the roof of the stable block. It is likely that the vaulted reservoir had earlier been served from a source known as the" Park Piece Spring". This name poses a small mystery -.It seems likely that the name applied to an old spring which was close to and preceded the 1817 drinking water reservoir. This was located at Deer Cote's Spinney and was supplied from Henson's Water House. This is described later.

The brick vaulted reservoir was suggested as the final destination for Bailey's water supply proposal of 1815, of which you will read later. The structure was demolished in 1986.

North of the site of the former reservoir today is to be found the modem sewage disposal system with its green cover, which was installed by the N.T. in the late 1980's.

Now we must move on to 1809, when a map and correspondence at the Derby Records Office show that an enhanced supply to the House was envisaged. This was for the pumping of water up to the vaulted reservoir to the north of the House from a cistern fed by the now nonexistent "Old Spring". This was located at the western end of the old quarry, within the wood overlooking the eastern lawn of Calke Abbey, which lay some 200 metres to the west. The feed from the cistern to the reservoir was to be through cast iron pipes and achieved by the means of a pumping engine driven by a 9' diameter water wheel close to the northern end of the cistern. It was to be sited a few metres from the bank, and towards the southern corner of China House Pond. The wheel itself was to be charged via a narrowing drain from the dam of the higher Mere Pond. A cost of £282 and one shilling was estimated, but there is no record that this plan came to fruition.

Further investigations were carried out in August of 1815 by W.W. Bailey. He had examined a number of inadequate sources, including the old source of supply to the Priory - which he deemed insufficient, and capable of serving only the ground floor of the house.

Bailey's first suggestion, like that of 1809, was that "The Old Spring" be utilised, since it yielded some 240 gallons per hour, but that in addition the "Iron Gates Spring" to the south west of the house should be used. He initially envisaged that a horse driven pump would be able to raise the water through leaden or wooden pipes, from the lower level to that of the existing reservoir to the north of the house.

His final recommendation, following a visit one month later however was similar to the proposal of 1809. Although no record of the work being carried out is available, it may be significant that a cut is to be seen in the south bank of China House Pond, at the point where such a wheel might have been located.

In this plan the water to power the water wheel was to originate from the southern end of the dam to the Mere Pond, and would run down a narrowing open drain (or perhaps even a cascade feature ?), to the wheel below. The powering flow of water would leave the wheel and run into China House Pond, perhaps at the cut mentioned previously.

Water from “The Old Spring" was to feed a cistern which was situated a few metres east of the water wheel, whose pumping engine would raise the water through cast iron pipes to the previously mentioned brick vaulted reservoir on the high ground to the north of the house. The recommendation was made that it should be pumped from there by a man, or better by a horse and through pipes already existing, to enter the Abbey. To augment the flow to the cistern, water from the "Park Piece Spring" - which source he had discounted in the earlier proposal -would be carried through wooden pipes towards "The Old Spring".

There is no direct evidence that any of the above plans were ever implemented.

The 1817 Supply from HANSOM'S (HENSON's) WATER HOUSE.

Glover's History of 1831 refers to the above source as being in existence in 1817.

However, it may be that it suffered early problems with wooden pipes, which were replaced with lead piping in 1839/9.

At that time a supply to the house was engineered from plans drawn up by John Chatterton which used the device of a siphon. A water source, which emerges as a strong spring located in a deep gully on the lower slopes of Pistern Hill to the north of White Hollows Farm, enters the extant spring box which has wooden entry doors, through a mushroom inlet. Water leaves the reservoir through a screened outlet and is carried from it through lead piping, two and a half inches in diameter.

The spring box is known on today’s O.S. Maps as Henson's Waterhouse, although it has on occasion been spelled as Hanson.

Its overflow feeds a stream which joins White Hollows Brook, whilst the lead piping takes the water below ground and to the east. The pipe emerging for a few metres- to be carried over what was originally a narrow stone arch (now decayed) above White Hollows Brook, near the western corner of the field known as Big Town Leys. A draw off cock for maintenance work lay somewhere before the arch.

The pipe continues beneath that field and the wood of Pokers Leys, where a further draw off cock is situated and through which its passage is understood to be marked by a number of wooden posts. It then crosses the corner of the field known today as Hogg's Close, beyond which it passes beneath the tarmac drive to climb to the top of the hill at Deer's Cote Spinney, where even today a diminished flow enters through a screened inlet into a sunken

64' long reservoir which is 10' wide and 4' deep. The reservoir overlooks the Abbey. A 4' square brick base supports a manhole cover above it, which is all of the structure to show above ground level. This is the reservoir which may have been called "Park Piece Spring" or was close to a former spring of that name. Today its piped underground outfall appears to serve only a stone trough to the north, towards Betty's Pond.

The service main from the reservoir to the house has today been cut off and sealed, but it originally carried the water downhill, to pass along the southern aspect of the stable block, and into which a spur ran. Another spur then ran south into Calke Abbey itself.

The main continued eastwards past the house, then presumably fed the now demolished reservoir before turning south east to cross the valley before the eastern aspect of the house, prior to feeding both the Physic and the Kitchen Gardens. The long and narrow pipe then delivered its last dying gasp to what was The New Dairy - todays Home Farm - where former farm manager Norman Clarke recalls that prior to the advent of modern mains water - a bucket beneath the tap there might take some hours to fill.

Does one dare to speculate upon the effect which these waters - carried for so great a distance in lead piping - might have had upon the health of its "beneficiaries"!

The 1866 Supply from HEATH FARM CISTERN.

A further gravity fed piped supply was constructed in 1866, to supply the house from a white tiled cistern with a filter which tapped into one of the spring sources of Red Brook below the ridge of Pistern Hill. An overflow from the cistern also feeds a farm pond nearby, whilst Heath Farm lies some 200 metres to its north.

The supply came into being following a fire at the Abbey in 1865, when it was considered necessary to improve the firefighting facilities there. It would appear that due to some unknown problem, the original course built by Mr. Burton in 1866, was replaced by a new section between the cistern and Staunton Lane. This was constructed by Mr. Wood in 1886.

The water ran through one and a half inch diameter cast iron pipes, travelling underground to the north east. through the fields to the west of Southwood House to cross beneath Staunton Lane to the north of the double bends.

From this point it followed the west side of the lime dressed (tarmac in 2001) carriage drive to the Abbey until, it joined the main tarmac driveway. A hundred or so metres after this junction, the pipe veered off to the north to enter the white tiled reservoir at the summit of Deer's Cote Spinney. This is to be seen today surrounded by pine trees to the north west of the drive, where it overlooks the house.

This structure also is white tiled internally, and is equipped with a gravel filter. Sadly, due to furring up, and possible pipe breakage, the reservoir no longer receives a supply of water.

An overflow from it flowing north entered the previously described and older reservoir (Park Piece Spring ?). This is sited close by and to the north of the white tiled reservoir, being fed from from Hanson's Waterhouse.

The 4" firefighting main issued from this white tiled reservoir, passing a few metres from the south west corner of the stable block of Calke Abbey. Here a spur served a fire hydrant opposite the stable gates, whilst the main turned to the south east to serve four hydrants, one opposite each face of the house. At some period the main also served a tank on the Abbey roof

In 1890 an additional 4"main was connected directly from the one and a half inch supply pipe, at a point some 60 metres to the south west of the white tiled reservoir, and into the 4" Fire Fighting outflow from it, by passing the reservoir altogether.

Although the intention was to create a fire fighting facility, the fact that its reservoir and cistern were filtered and white tiled, seems to indicate the water being for general usage also It is understood that modern mains water did not reach Calke Abbey itself until 1985/6.

OTHER SOURCES in the GARDENS.

To the west of the path running from the shrubbery - known today as The Orchard - and over the "ha-ha" to Calke Church, the boggy grassland spawns a water source. Some of its water is captured in a small reservoir at the top of the hill overlooking Calke Abbey. The cistern is 40' long and 7' wide, being 3" deep. At its northern end is a 3' stone trough some 18" wide and 2' deep. It is believed that it may once have served a fountain, which stood in the gardens before the eastern aspect of the House until the end of the 18th. century.

Additionally, some of the water still travels to the east of the boggy source, skirting the southern side of the Walled Gardens and into the pond adjacent to The Home Farm. The waters from this pond are carried by pipe into the present Staunton Harold Reservoir, to the area formerly occupied by the Big Dog kennel Pond.

Near to the middle of The Orchard and just to the south of its central path, is the brick base to a pump beside a disused well. It is possible that this may have been connected with the missing"0ld Spring", which was nearby.

A pump beside its well stands before the glasshouses in the Physic Garden, whilst before the Gardeners Bothy a pump stands beside a substantial stone trough.

Within the massive brick walls of the Kitchen Gardens were three ponds. One is easy to find standing before The Orangery. Another was in the south west quadrant, whilst the third lay in the south east corner.

A cistern recently re-discovered lies opposite the main porch of the Abbey. It lies in the grass some 10 metres to the south of the semicircular drive. It must have been built following the removal of the hillside here by explosives in 1789. It is 12' long, 4' wide and some 3' deep, being brick built and with a domed roof. Its purpose and its source of water are not known, but it could conceivably have been served from a further area of boggy land in the centre of the meadow to the west of the church.

CALKE VILLAGE.

In Calke village itself there does not appear to have been any running water until the arrival of the Severn Trent Water Company mains there in 1963. The existing properties appear to have been served by wells, although in fields to the west, old maps point to the existence of ponds and troughs, which might indicate that a running source could once have served the settlement.

The most recent amenity to be enjoyed by the village at its north easter end is the construction in 1999 of a Reed Bed Sewage System, in the field towards the reservoir. This involves the effluent being cleansed by its flowing through a series of three ponds in which reeds are set, and in this case finally entering the reservoir. The system caters for all the village properties, with the exception of The Gables farm which has its own system.

THE WATERS OF TICKNALL AND CALKE

Chapter 7

SEVERN TRENT WATER and SOME OTHER MATTERS OF LOCAL SUPPLY.

The Reservoirs of Staunton Harold and Foremark.

The presence of Severn Trent Plc. in the area, is most apparent in the existence of its two handsome reservoirs - Staunton Harold, which lies along the eastern boundary of Calke Park, and that of Foremark to the west of Ticknall - Both of them are largely open to the public for recreation - whether it be for walking, or enjoying the nature reserves with, in the case of Staunton Harold, access to a stunning wildflower meadow. Additionally in both cases, there are excellent opportunities for fishing, sailing, and for the enjoyment of children's playground facilities "par excellence". It is understood that in 2001 alone, some £54,000 has been spent on the latter activity at the two sites.

It had become apparent over a number of years that the Leicester area as far east as Rutland was in urgent need of additional water supplies. It was envisaged initially that tapping into the River Manifold in Derbyshire would satisfy such a demand. However that source was eventually rejected in favour of accessing the waters of the River Dove which, with its tributary rivers of the Tean and Churnet, flow south east from the Derbyshire Peak District. In 1952 a coalition of eighteen local authorities formed the River Dove Management Committee, the body which was in 1955, to become the River Dove Water Board.

The plans for the construction of Staunton Harold Reservoir were initiated in 1952. Its construction was commenced in 1957 with completion being achieved in 1964.

It was circa 1974, that Severn Trent Authority was formed as part of a major reorganization of the water services in the U.K., which would embrace all existing local water supply bodies.

The first untreated water was taken from the Dove in 1959, through the Intake and Pumping Station situated about a mile from the confluence of the River Dove with the River Trent, and lying to the north west of the ASS near Egginton. The aqueduct, a 42"diameter pre-stressed concrete pipe carries the water on an 8 mile journey - crossing the River Trent via the 160' span of a twin 27"diameter pipe arch, before passing to the north of what is now the Foremark Reservoir and onwards through Ticknall village, crossing beneath the High Street to the north of Spring Cottage. Following its entry into Calke Park the aqueduct pipe enters a Break Pressure Tank (sometimes referred to as a Surge Tank). This can be seen from the main drive to Calke Abbey, lying to the north east of the Middle Lodge.

From this tank the flow may continue in up to four different ways. By gravity, north east around the reservoir through a bypass main which enters directly into the Melbourne Water Treatment Works, which plant is located on the north eastern bank of the Staunton Harold Reservoir. Or, again by gravity, through a Hydro generator (greatly assisting in the overall pumping economy of the system), which lies adjacent to the south west comer of China House Pond in Calke Park. From this device the water either gravitates into the pond and from thence into Staunton Harold Reservoir, or is pumped around the north western bank of the reservoir before entering the Melbourne Water Treatment Works. A further route which is perhaps only occasional, being by an overflow from the tank directly into Scot's Brook, and from thence into the reservoir. The preferred route used is that through the Hydro generator.

At its northern extremity the Staunton Harold Reservoir has an 80' high dam, which is 1,600' long. This can contain up to fourteen hundred million gallons within its 209 acres of surface area. Primarily dependent for its water upon the River Dove, a small local contribution is also obtained from the four major streams running through the Calke and Staunton Harold Estates.

The core of the dam is of rolled clay, with sand and clay material embanking it. This in turn is held in place by heavy stone. The core is sealed at its base by a concrete cut off (wall) which is keyed into it, and is up to 80' deep, whilst below this cut off lies a curtain of grout extending up to another 80" in depth.

At the base of the dam, the outfall from the reservoir is transferred at an Extraction Pumping Station to enter the Melbourne Water Treatment Works, which lies at a higher level.

Foremark Reservoir, whose construction was authorized in 1969, was completed in 1977. It lies in a deep valley between Hartshorne and Milton, having a dam with a height of 128" and some 3,460' long located at its northern extremity. Its 228 acres of surface can contain a catchment of nearly three thousand million gallons of water.

The core of this dam is of rolled marl which rests upon a natural layer of that material, which itself lies upon carboniferous strata. The dam is embanked upon both sides with Bunter Sandstone fill which is covered with stone. Curtains of grout extending down into the soil from each end of the dam further seal the reservoir against water loss.

With but a minimal amount of water feeding in from its immediate surroundings, Foremark Reservoir is almost wholly reliant for its content upon the supply from the River Dove, which emanates from a second Intake and Pumping Station lying adjacent to the one which feeds the Staunton Harold Reservoir. Both aqueducts from these stations are laid largely parallel to each other, until that which carries the supply to Foremark reaches its destination. It then enters the reservoir through either a Cascade Aerator or a Bottom Inlet in the reservoir bed, or both.

Below the Foremark dam there is an Extraction Pumping Station which propels its water, again parallel to the older Staunton Harold supply, through Ticknall and into a separate compartment of the Break Pressure Tank referred to earlier, from where it gravitates into the Melbourne Water Treatment Works.

From these works, the treated water is transmitted through the East Midlands water grid system, with a particular leaning towards the Leicester area.

Supply is made locally from the Melbourne Water Treatment Works to, among other center’s - Melbourne, Castle Donington and Loughborough. Ashby de la Zouch, Hartshorne and Swadlincote receive some of their supply today via a main running south from the treatment works which travels parallel with the Melbourne to Lount road. Near the County Boundary the main turns south westwards across the valley at the southern end of the reservoir, to enter the circular and dome covered Smisby Service Reservoir. This is sited one kilometre to the north of Smisby, close to the junction of Forties Lane with Heath Lane. It serves parts of Ashby de la Zouch and In addition, via the Hartshorne Service Reservoir off Manchester Lane at Boundary, it serves the area towards Swadlincote.

One wonderful bonus from the two reservoirs enjoyed by the inhabitants of Ticknall is that during the autumn, skeins of geese migrate between them, especially close to dawn and dusk.

The Stanton Barns Pumping Station of 1892.

The former Stanton Barns Steam Pumping Station lay at the eastern extremity of the village of Stanton by Bridge, on land being a part of Melbourne Parish. Its history dates back to the time when the council at Long Eaton was seeking improvements to their supply of fresh water.

The site selected for boring lay some 160metres to the north east of the junction of the present A 514 with the B 587.

Mr. George Hodson, a Loughborough Water Engineer was employed to this end, and in 1889 his borings through very hard gritstone at Stanton Barns overflowed with pure water from an artesian spring at a depth of 154'. Boring continued until a depth of 272" was reached. The handsome brick Engine House was built over the bore hole, with its Engineer's House erected nearby to the south. It was planned to pump water through 10" diameter pipes, and via King's Newton to the extant covered reservoir at Hill Top, which lies to the

south of and overlooking Castle Donington, after which gravity would deliver the supply to Long Eaton.

However, following approaches from the council at Melbourne it was agreed that this community also would be served from the source at Stanton, which necessitated the main delivery pipe diameter being increased to 12", incurring some extra cost.
It is well recorded that during a century when Typhoid was widespread in Britain, Melbourne was no stranger to death from that fever and other waterborne diseases, with many of its water sources at that period being condemned as polluted.

Messrs. Tangye of Birmingham supplied the pumping plant, which consisted of 4 deep well pumps and 4 surface pumps driven by gearing from two condensing engines which were powered by Lancashire Boilers. They were designed to lift 56,000 gallons of water per hour and to drive that supply on its five and a half mile journey to the reservoir at Castle Donington.

The project was commissioned in 1892, when an 8" connection to Melbourne was made from the Castle Donington main, near The Packhorse (PH) in King's Newton. To this were connected 6", 4" and 3" mains to serve the town. But it was not until 1896, after a 15,000 gallon reservoir to serve the higher Melbourne properties had been erected in 1893 (at a height then quoted as 327'), next to the highway near Derby Hills House Farm on Melbourne Common, that sufficient connections were finally made to enable the scheme to become economic.

It is understood that the extraction from the artesian well soon had a disastrous effect upon the eastern end of the village of Stanton, when many of its wells and lower springs became dry as a result of it. This would not then have affected the properties from the western end of the village up to the road junction at Merry Hill, since they were served by untreated water emanating from Seven Spouts - a concentration of springs, which lie to the east of Ingleby Lane at Knowle Hill. Indeed even today a small number of the older properties at this end of the village are still served from that source. To alleviate the drying out problem at the eastern end however, the properties there were served by a small main direct from Stanton Barns.

Perhaps around the middle of the 20th.century, the Stanton Barns source was connected to the extant brick built pumping station then constructed at the southern end of the Swarkestone Causeway. The main from this pumping station then passed over the River Trent via Swarkestone Bridge, to be connected with the Derby mains at Chellaston.

The steam engines were taken out of service during the 1960's, following which electric pumps performed the same function. The chimney for the boilers was demolished in 1970.

The original artesian well boring is still in the Engine House. Other wells are to be found close by, to its north and north east, whilst the breather pipe to another is to be seen in a field, some 100 metres to the north east

It was only in 1999 that abstraction from the Stanton Barns source ceased entirely, the station then becoming only a Booster Pumping Station, but still utilising the old electric pumps. It would appear that at some time after 1960 it became possible to reverse the flow (by gravity only), from the 1892 Castle Donington Hill Top Reservoir (which lies between the Motor Racing Circuit and East Midlands Airport). This feature enables a supply of water from the Erewash Valley spine of the East Midlands Water Grid to reach Stanton - there to be blended with water from the Melbourne Water Treatment Works as may be expedient. Until that time Stanton's own pure water would have reached Long Eaton via Castle Donington, with a supply also to Melbourne. After 1962 the Stanton Barns pumps would also serve Ticknall and beyond.

Blending of the two supplies is dependent *upon* both the varying pressures in the system, and the prevailing demand. Melbourne is today mostly served directly from its treatment works.

In 1962 a main from the Stanton Barns Pumping Station following the road to Ticknall was

connected to the prominent water tower which stands on the north side of the A511 (the former A *50)* at Boundary.

On its journey to the tower from Stanton the above main first sends a branch to serve Stanton village, prior to its joining the main from the Melbourne Treatment Works at the road junction to the east of Ticknall.

Running through that village it enabled Sir Vauncey's tap system of 1914 to be replaced. The main turns south into High Street (the B5116) where, shortly afterwards and opposite The Staff of Life (PH) the main divides, one branch following Narrow Lane and rejoining the A514 before entering, at that roads' highest point towards Hartshorne, the covered surface reservoir of Scaddows which serves Ticknall, Hartshorne and beyond. By-pass valves at this point enable water to be pumped directly up to the Boundary Tower from Stanton and Melbourne. The other branch of the main continues south through Ticknall where it is assisted on its journey by the Booster Pumping Station erected by the South Derbyshire Water Board in 1962. This lies to the south of the old well of Sir Vauncey's 1914 System. It then passes Top Farm to follow the road towards Ashby until, upon reaching its junction with Heath Lane near Smisby it turns to the west, also to be directed to the Boundary Tower.

Some other matters regarding Local Water.

An electric pumping station serving two bore holes was constructed, circa 1930 to the south of Heath Lane and lying a quarter of a mile to the north east of its junction with the present A 511 (the former A 50) at Boundary. Near that junction a spur from the pumping station main turned towards Ashby for a quarter of a mile, whilst the main itself served the Boundary Water Tower and turned west along the main road towards Burton upon Trent. A spur from this main then served the village of Blackfordby via Heath Lane before continuing westwards, when a connection was made from Millfield Street to the formerly open Hartshorne Service Reservoir off Manchester Lane. The main then served much of Woodville until, reaching the five way junction at "Wooden Box", a spur ran towards Swadlincote for a quarter of a mile, whilst the main itself ran north east to Hartshorne and beyond.

It is understood that connections were made from the twin pumping station to both Smisby and Ashby de la Zouch in the 1950's.

The station went out of service in 1962, when all supplies from it ceased. Since then its twin former pump houses have been transformed into an unusual and attractive dwelling.

The Hartshorne Service Reservoir (roofed in 1972) has been served since 1962 from the Smisby Service Reservoir on Heath Lane, to supply Boundary, Woodville, Hartshorne and parts of Swadlincote. Whilst since 1962, other functions of the former twin pumping station in serving the Boundary Tower and its other connections have - except for those to Smisby and Ashby de la Zouch - been replaced by the supplies received from the Stanton Barns Booster Station main, via the Scaddows Service Reservoir, and from its branch via Top Farm and Heath Lane.

A small, covered, surface service reservoir on Melbourne Common is to be found adjacent to the south side of the highway and lying to the north west of Derby Hills House Farm. It is served by the water main from Melbourne to Ticknall, which is also connected to the main from the Stanton Barns Booster Station. As has been stated previously in connection with the Stanton site, all three of these locations are served today from the Melbourne Water Treatment Works, its water sometimes being blended with that received from the Castle Donington Hill Top reservoir, via the Stanton Barns Booster Station.

The above Melbourne Common Service Reservoir stands on the site of the 1893 high reservoir which had been served from Stanton Barns. This was entirely rebuilt in 1992, prior to which it had also been served by the extant but now redundant pumping station on the south west side of the cul-de-sac Bog Lane. This un-adopted road runs south from the

highway on Melbourne Common. A single cylinder diesel engined pump, drew water from a borehole here, to fill the small extant covered surface service reservoir lying adjacent and to the south west of this old pumping station.

It needs only to be added at this point, that the sophisticated operations of the modern water grid system, allows that many of the water facilities in the area be interconnected by the opening and closing of valves. Whilst in addition, as it may be deemed necessary, the flows may be reversed, to cope with any eventuality.

Local Sewage Treatment Works.

The Severn Trent Sewage Treatment Works at Ticknall lie to the east of the Southern Limeyards. It was you may recall, mentioned in the Preface - The plant is served by its associated electrically powered Sewage Pumping Station, which is sited close to the former Horsewash Gate - one of the entrances to those former limeyards which lies towards the eastern end of the village.

The Sewage Treatment Works for Melbourne is located just outside its boundary, to the north of the road from Melbourne to Wilson.