SUFFOLK MILLS GROUP

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Just to prove the S.M.G. journalists aren't on strike, here's the Christmas issue of the Newsletter! As in last December's issue there is a prize crossword and a quiz to mark the festive season. I've also included, for the first time, a photograph page reproduced by the offset-litho process, which gives a much better quality of reproduction. Unfortunately, however, it costs about five times as much as our xerox method used in the last issue, so its future use will be limited.

On behalf of the Committee I would like to thank all Members for their support during the past year, and wish them and their families a Happy Christmas and a successful New Year. I hope you enjoy the Newsletter.

M.J.B.

SOME THOUGHTS ON THE SITES OF EARLY MILLS (2)

JOHN McCANN

The site of a mediaeval mill may turn up by accident, or it may be found by conscious search, but either way it involves bringing together some documentary research and some practical fieldwork. The most useful documentary sources are Domesday Book, tithe maps and estate maps. Domesday is a detailed survey of the land and its economic resources, and who held it, at three periods. Each entry, as rendered in English, uses 'then' to mean in the time of Edward the Confessor (1042 - January 1066), 'afterwards' to mean at the Conquest, and 'now' to mean in 1086, when it was compiled. (It carefully disregards the short reign of King Harold, January to October 1066, since William the Conqueror held that he was a usurper.) Examples of its use will be given later. The tithe maps were made about 1840, one for every parish, in connection with the commutation of tithes, but since they constitute the first large-scale national survey they are invaluable for local studies. The scale is often as large as 20" to the mile; every plot of land, however small, is identified by number, and an accompanying award lists its name, use, owner and occupier. Private estate maps at large scale first appear in the late sixteenth century, and can be very accurate. They usually show detail only in the land belonging to the estate, the rest being left blank. However, since the mill was a manorial property, and most estate maps were commissioned by lords of the manor, mills are very often shown, sometimes sketched in some detail. All these sources are available at the County Record Office.

Domesday may record that there was a mill in Norman or Saxon times, but it seldom gives enough information to locate the site. Here field names can provide the best clue, which is why the tithe maps and estate maps are so useful. A field which was once named by its proximity to a prominent feature usually retains the name long

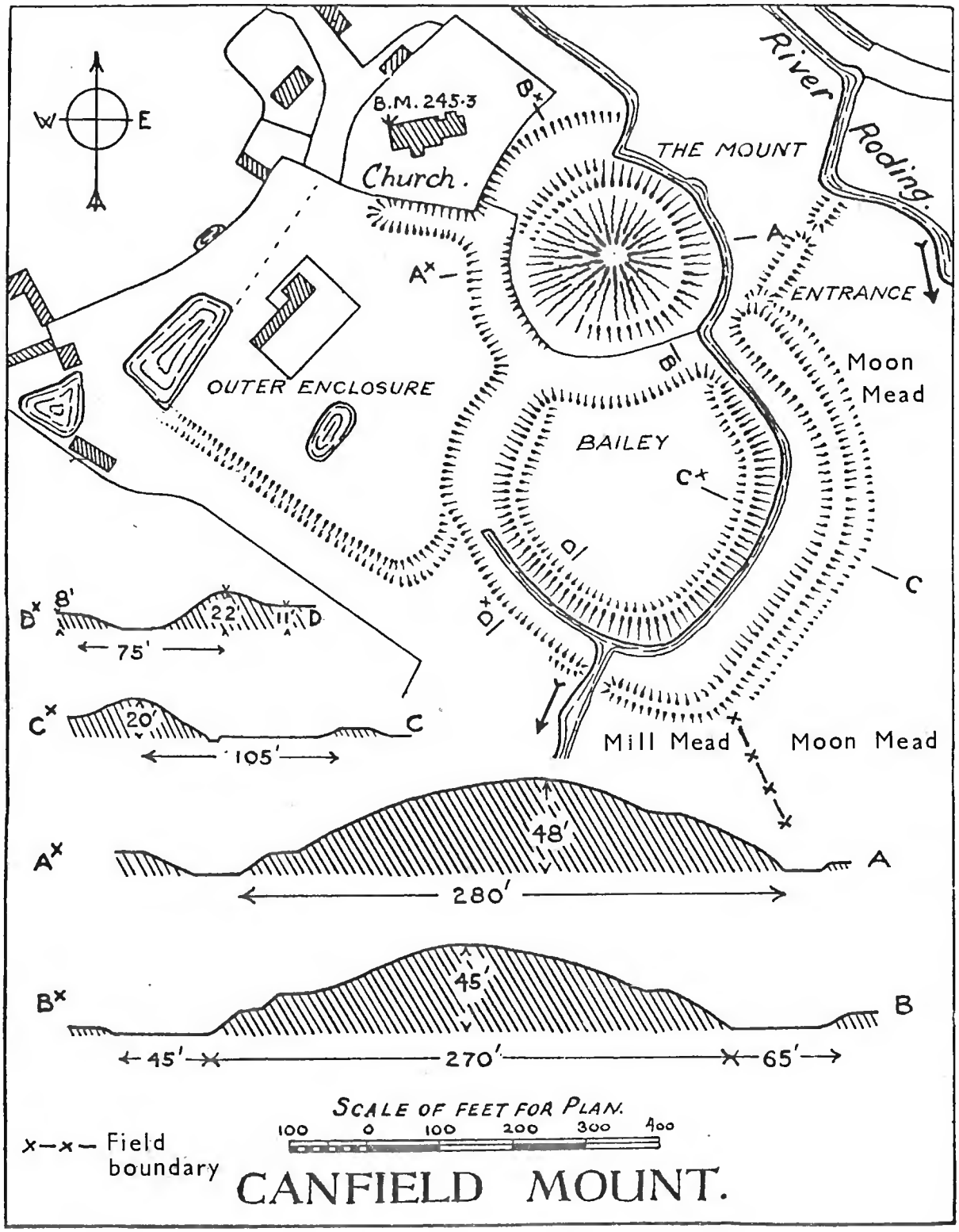


Figure 1 Reproduced by courtesy of the Royal Commission on Historic Monuments.

after the feature has gone. For example, fields in Takeley, Essex, containing the names Northwood and Northwards record the position of a wood which was cleared before the Black Death, and a plot still called Vineyard in 1838 records the vineyard of a monastery dissolved in 1540. The name Mill Field means exactly what it says, that there was a mill there once, although it could be of any period. Where a group of field names all contain the word Mill it is usually possible to deduce the exact position of the mill. Often the plot, or the access road to it, is still present.

Other documentary sources are useful, but one can spend a lot of unproductive time on them. Mediaeval court rolls are in Latin, and may not be instantly legible. They often refer to mills but seldom identify the site (since everyone concerned knew that) except sometimes by inference. A short cut is to consult the published parish history, where there is one, or to make contact with a local historian who has already analysed the documentary material.

To take an example, the Domesday entry for Great Canfield, Essex, says 'now one mill' - that is, there was a mill by 1086, but there had not been one at the Conquest or earlier. A local history[1] mentions two watermills in 1377 (they were listed in the assets of the Lord of the Manor at an inquisition post mortem, taken for taxation purposes). The tithe map of 1847 shows only one windmill. There are no other early maps of the parish. How does one go about finding the mill sites?

The River Roding traverses the parish from north to south in three miles; a small tributary joins it halfway. Neither watercourse looks very substantial, but we know that there were watermills somewhere. Working on the principle that a small watercourse would supply more useable volume low down in its course than elsewhere, that seemed the first place to look, but a careful study of the tithe map, Ordnance maps and the ground itself revealed no trace of a likely site. The tithe award listed a Mill Mead, in the valley near a motte and bailey castle (see Figure 1 opposite). The moat is now dry, but it is clear that it was once supplied with water by the River Roding. Motte and bailey castles were thrown up very soon after the Conquest by the incoming Norman lords, to subjugate and overawe a potentially rebellious peasantry. The lord liked to have his assets close about him, where they could be protected against civil insurrection, and that included his mill. Here we know that the mill first appeared between 1066 and 1086, at the same time as the motte and bailey. The moat provided a capacious reservoir whose outflow could be used to power a watermill - in a terrain which otherwise provided no suitable site. The field name confirms that there was a mill at some time at the point where the moat drained back into the river. The inference is inescapable, that the moat served two purposes, as a defence and as a millpond, in all probability conceived in this form from the outset. The manor was one of many held by the Earls of Oxford, who were rich and powerful enough to build Hedingham Castle with stone brought from Northamptonshire. Any engineering works executed for them would be of the highest order.

If this was one of the two mills recorded in 1377, where was the other? The upper part of the river, like the lower, revealed no trace. There is no obvious reason why a lord should have built two mills on the same short watercourse, unless there were two good changes of level to exploit, and here there are not. The clue is contained in the inquisition post mortem - it valued two watermills together at thirty shillings per annum. If they had been on separate sites they would have been let separately, and valued separately, as all the other assets were valued. I suggest that the two mills really constituted one installation with two rotors, perhaps an older one being superseded by a newer one. A study of the distribution of Domesday mills[2] indicates that it was not uncommon to record two mills in one manor, often where there was only one watercourse.

What happened to the watermills? The same parish history mentions a complaint before the manorial court in 1424, that a manorial official had stolen iron from the windmill[3]. This is the earliest surviving record of a windmill in the manor, but its bizarre character indicates that a windmill could exist without being documented. Windmill technology had been available since the late twelfth century[4], and a powerful lord would be among the first to employ it. As the River Roding at this point could never have been a very reliable source of power it is likely that it was supplemented or superseded by a windmill long before 1424. Great Canfield is excellent windmill terrain.

Passing to the next parish upstream, Little Canfield, Domesday again records 'now one mill', but the manor was held by a quite minor knight. An estate map of 1590[5] shows a millpond, named as such and with its owner identified[6], but no watermill. A small triangular field now present conforms exactly to the shape of the former millpond. One side is bounded by an embankment which carries a modern motor road, but which carried a road from Roman times[7]. One side slopes gently up to higher ground. The other side is now bounded by just a ditch, but it must have had an embankment too in 1590, or the millpond would not have been able to contain water. From the top of the field a dry ditch extends to a kink in the river 800 yards upstream, except for one short section which has disappeared. All the indications are this was a leat. On its downhill side there is a spoil bank, and on it a hedge. Dr. Max Hooper has shown that the age of a hedge can be related to the range of plants it contains. A rule-of-thumb formula is that the number of woody species in a 30-yard section (taking an average of several sections for reliability) usually corresponds with the age of the hedge in centuries[8]. There are various qualifications to make, but by studying the hedges in one area it is possible to refine this formula and to use it with confidence. The hedge on the spoil bank (which was made when this presumed leat was cut) is extraordinarily rich botanically, one of the richest in the area. Six counts yield an average of ten woody species per thirty yards (fourteen species in all). Dr. Hooper does not claim that the earliest hedges can be dated with precision, but here the species count corresponds adequately with the nine centuries which have elapsed since the Domesday survey. Leading downhill from the leat there are other ditches at intervals, their spoil banks carrying a quite sparse growth of vegetation, hardly enough to make a reliable count. Evidently they were cut for drainage much later.

At the point where the leat approaches the river there is a moated manorial site, with the manor house still present. Old dry meanders in the surface of the meadow show that the river has changed its course, and that it has scoured its bed deeper than it was then. It is now below the level of the silted-up moat and the leat, but it seems reasonable to deduce that in earlier times it supplied the moat with water, and that it could be diverted to supply the leat. There is a chain of mediaeval fishponds above the leat, now dry, but which were still spring-fed within living memory. That is, the leat not only collected water from the river, but it also drained a long hillside and collected the effluent from the fishponds. As

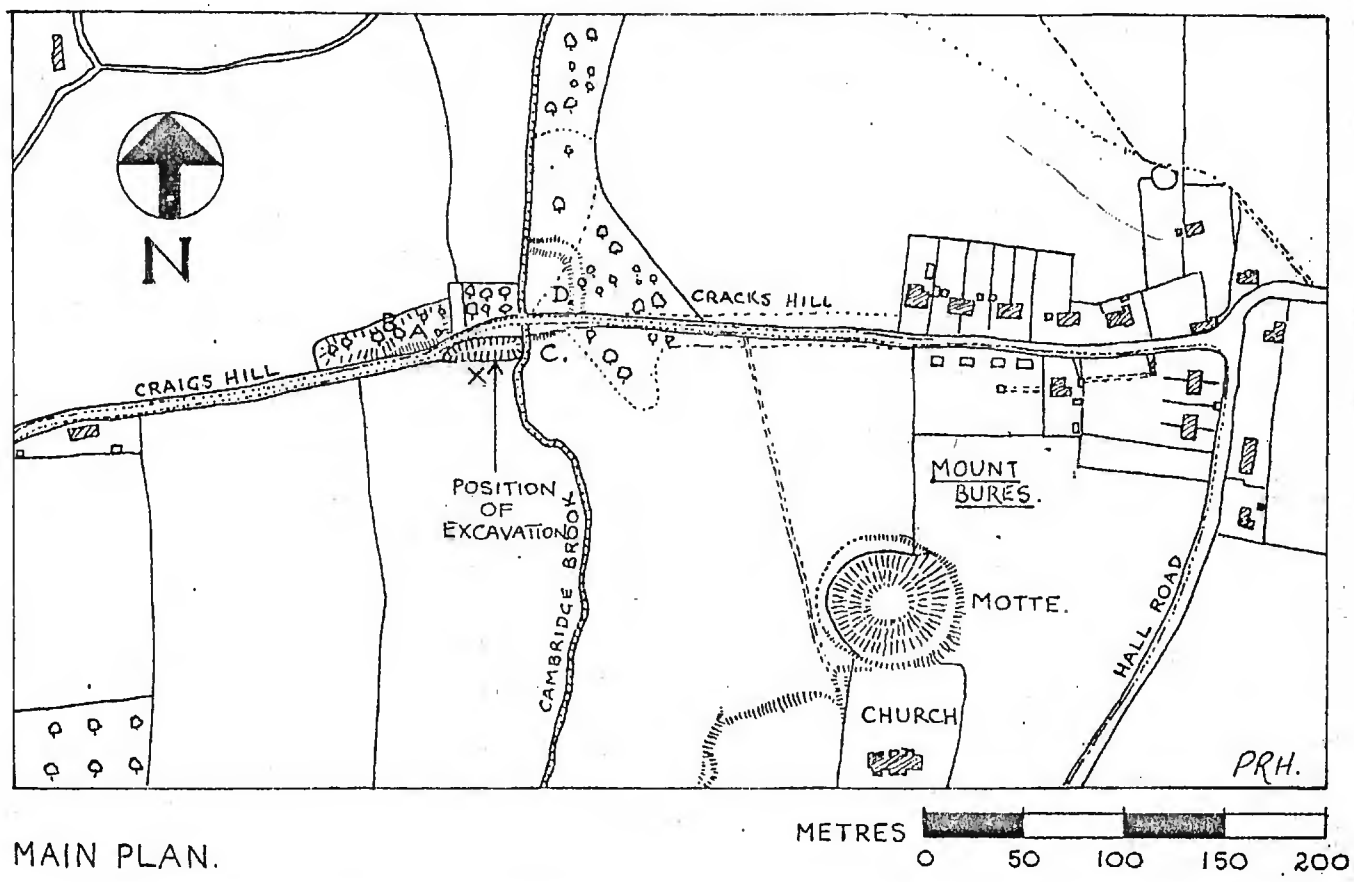


Figure 2 Reproduced by courtesy of the Colchester Archaeological Group.

shown earlier[9] there was never really enough water to work a mill throughout the year, but evidently great ingenuity was used to collect all the water that was obtainable. Ingenuity was used too in exploiting the embankment of a Roman road as a readymade dam. The knight who held Little Canfield did not command the resources to built great castles or earthworks. Engineers then as now were very capable of making the best use of available resources. It would be a fallacy to suppose that they did not know their business[10].

In 1972 the Colchester Archaeological Group became interested in a mysterious earth bank 200 yards north-west of the motte at Mount Bures[11] (see Figure 2). It is 9 feet high, 45 feet wide, and 140 feet long - a formidable construction - and there is evidence that it once extended further. They excavated a section across it and found that it was man-made, consisting of horizontal layers of earth taken from a nearby pit, lined on one side with yellow clay. They concluded that it was built as a dam across the Cambridge Brook, which drains an area of only two square miles[12], to operate a mill, and that a curved dry channel below it (D in Figure 2) was the tail race of the mill. In 1682 there was a meadow there called Curdmill Holme. The Domesday survey records 'always a mill here' and there are other documentary references, about 1200 to one mill in Bures, and in 1578 to two mills. The excavation did not produce any dating evidence except that the bank was post-Roman, and it remains a puzzle why there was a mill on this small watercourse when the River Stour is quite near. Was

early mill technology better adapted to exploit a small power source than a large one? As noted earlier[13], Domesday mills were mostly sited on small water-courses.

John Hedges, the County Archaeologist, has identified a similar construction at Littleworth, Warwickshire, a long earth bank forming a dam across a small valley, with a break in the middle, as the site of a mediaeval mill. John Hunter, of the County Planning Department, has found a comparable formation at Codham Hall, near Bocking, also on a quite small stream. The mill excavated at Old Windsor had a leat three-quarters of a mile long. The physical remains of early mill installations are to be found in the countryside, although in the past they have not been recognised for what they are. On the other hand the excavation of them is a task for the trained archaeologist. There is no possibility of finding any substantial iron component - iron was always a valuable material which would have been removed when the mill went out of use[14]. Similarly any useable millstones would have been removed, and some of the broken ones too[15]. The remaining evidence below ground would be minimal except where soil conditions are unusually favourable, probably just a few post holes and some decayed organic material which only the most skilled excavator could interpret. The rest of us can best help by reporting the sites and leaving them undisturbed.

Notes

1 G.Eland: At the Court of Great Canfield, Essex. (O.U.P., 1949), p.10.

2 Cf. Part One, in S.M.G. Newsletter No.6, p.2.

3 As note 1.

4 Part One, p.2.

5 Essex Record Office, D/DHt M.20.

6 Mr.Fytche, the owner of Great Canfield Park (cf. Eland, op.cit.).

7 Stane Street, from Colchester to Braughing, now the A120.

8 Hedges and Local History. (National Council of Social Service, 1972).

9 Part One, p.4.

10 Cf. J.Harvey: Mediaeval Craftsmen (Batsford, 1975), passim.

11 Annual Bulletin, Vol. 14 (1973).

12 The same area drained by the River Roding at Little Canfield.

13 Part One, p.2.

14 The only iron component found at Tamworth was a bearing sunk in a wooden mounting.

15 Jack Perry, a Great Canfield farmer, has found two broken millstones, at different places, both far from any mill site, evidently re-used for some other purpose. Both are small and early.

Acknowledgements

I am grateful for help received from Amanda Arrowsmith, Professor R.A. Brown, Jo-Ann Buck, John Hunter, Ida McMaster, Dr. Janet Nelson and the staff of Essex Record Office. They should not be held responsible for my conclusions.

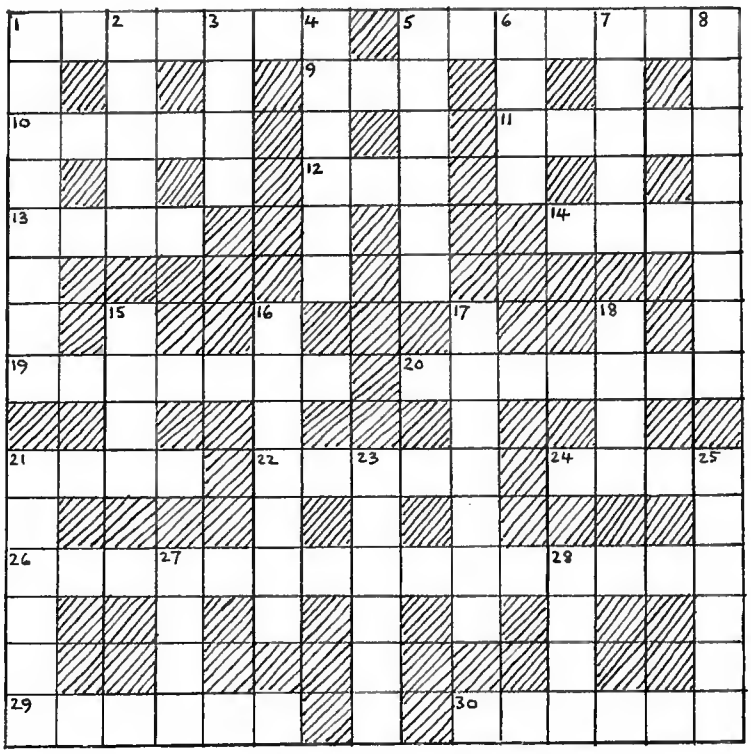
PRIZE CROSSWORD Compiled by MARK BARNARD

Most of the words in the crossword are connected in some way with mills and milling, although there are a couple of exceptions. However, I have steered clear of obscure technical terms and expressions. Some of the clues are straightforward, some cryptic and some contain anagrams. The books I used were: 'The English Windmill' (Wailes); 'Windmills and Watermills' (Reynolds); 'Windmills and Millwrighting' (Freese).

To enter the competition fill in the copy of the crossword provided at the end of the Newsletter. The copy on this page can then be retained for your own reference. Don't worry if you cannot complete the crossword - send it in all the same and (who knows!) you could be lucky. In the event of a tie the winner's name will be drawn by the Chairman. Entries, to either the Secretary or Editor (addresses on p.1), by the end of February, please.

The prize is an autographed copy of Peter Dolman's new book 'Windmills in Suffolk', which will be forwarded to the winner.

The competition is open to all Members of S.M.G. except for the Secretary and the compiler. The winner's name will appear in the next Newsletter, together with the solution.



CLUES ACROSS

1. We can't sulk off mills here! (7)
5. Drained by the Dutch mills (7)
9. Grain enters the stones through this (3)
10. Apart from mills, the only example of complex gearing known in Mediaeval times (5)
11. I'm not such a dull tool really! (5)
12. To spread the sails (3)
13. Nineteenth century windpump innovator (4)
14. Not quite an island? (4)
19. Type of sawmill (7)
20. This may be done to a mill in a gale (7)
21. A predesessor of 27 down (4)
22. Attractive watermill feature (5)
24. Cullin stones are made of this (4)
26. This is 12 across, in order to work the mill (6,4,5)
29. Sails under the Thames (6)
30. See 15 down

CLUES DOWN

1. Device for catching bags of grain? (4,4)
2. One of many on a waterwheel (5)
3. The best posts come from these (4)
4. Large derelict West Suffolk watermill (6)
5. Type of waterwheel (6)
6. Tale of a mill stream? (4)
7. The largest millstones crush with these (5)
8. Helps clean the grain (8)
15. (& 30. across) Dressing machine (4,6)
16. Canister (4,3)
17. Device at brickworks or potteries (3,4)
18. Plenty of 24 across can be found here (4)
21. Makes gearwheel turn again (2-4)
23. These do a vice job on the stocks! (6)
25. A square cut stone finish (6)
27. Then came the stone's regalia (4)
28. Turn to wind (4)

NEW BOOKS MIKE ORGAN and MARK BARNARD

'THE STANDING WINDMILLS OF WEST SUSSEX' by Richard and Richard McDermott. Published by Richard McDermott (Publicity) Ltd., 31, Windsor Road, Worthing, West Sussex. Price £1.50 plus 15p. postage, etc.

The writers and publishers of this book have produced an artistic as well as informative paperback on the remaining windmills in West Sussex.

The introduction contains a comprehensive history of windmills and windmilling from the primitive early post mills to the decline of windmilling and then goes on to cover the more recent history of restoration from the early struggles of the 1930's and 40's to the present enlightened (?) situation.

The fourteen windmills have each been researched in detail, the emphasis being on history rather than technical deatils of structure and machinery. Directions for finding some mills are given but O.S. grid references would have been helpful.

The book is well illustrated in black and white, all the mills being portrayed by contemporary photographs and/or earlier drawings or watercolours. The text is also enhanced by marginal sketches. These, together with the interesting anecdotes presented in a light and amusing manner, make this a book to keep and browse through.

A companion volume, 'THE STANDING WINDMILLS OF EAST SUSSEX', is to be published this month at £2.00 plus 15p. postage, etc.. (M.R.O.)

'WINDMILLS OF SOMERSET AND THE MEN WHO WORKED THEM' by A.J. Coulthard and Martin Watts. Published by The Research Publishing Co., 52, Lincoln's Inn Fields, London. Price £4.95.

This study of the windmills and millers of Somerset makes an important contribution to that county's historical records. This interesting and well-written book is compiled from a combination of two separate surveys: the first by A.J. Coulthard made between 1920 and 1934 capturing the recollections of millers while it was still possible to gather such information at first hand, and the second adding the most thorough technical and historical research of Martin Watts.

Well illustrated and indexed, this book could be described as the definitive work on Somerset windmills and mill sites. (M.R.O.)

'DRAINAGE WINDMILLS OF THE NORFOLK MARSHES' by Arthur C. Smith. Stevenage Museum Publications. Price £1.40

This book follows the pattern of previous publications in Arthur Smith's contemporary windmill surveys, the emphasis being on the location and present condition of the surviving mills. To this end the excellent maps (on three pages) and 78 photographs are particularly useful. Although the drainage mills at Nordelph and Starston - lying outside the Broadland area - are quite properly included in the survey, it's a pity that the southern boundary of the survey area stops short of the remains of drainage mills by Oulton Dyke, whose inclusion would have completed the picture. As well as calling the mills by their names, the author has used a numbering system to provide a quick link between photographs, text and maps - a good idea when so many mills stand together in similar surroundings.

In summary, a very lucid guide which ought to make Broadland cruising even more interesting for the holidaymaker in the future. (M.J.B.)

'ENGLAND OF THE WINDMILLS' by S.P.B. Mais. First published 1931; re-issued 1978 by EP Publishing Ltd.. Price £5.95.

Members will be interested to hear of the re-printing of this windmill book. Although by no means an authoritative text on mills, the book is an enjoyable armchair voyage of discovery through England between the wars, with windmills providing a common theme. Some seventy drawings by F.L. Bussell complement the text. (M.J.B.)

THE DRINKSTONE MILLS REG CLOVER

My great-great-great grandfather Samuel Clover, who owned a watermill and land at Nedging, Suffolk, bought the mills at Drinkstone for his son Samuel. The property consisted of a small thatched cottage, a horse-driven mill and a post mill.

The horse-driven mill was of two storeys with a conical roof; the lower storey was of brick and the upper of timber frame and weatherboarding; the building was 16-sided. The horse walked in a circle on the ground floor dragging a long stout beam; the beam was, in fact, a lever and the other end drove through gearing a small pair of millstones on the upper floor.

The post mill was a small box-like structure and was 100 years old when Samuel took over. The understructure was open to the weather. It had four 'common' open frame sails, spread with sail cloth when the mill was in use. The upper weatherboarded structure - the 'buck' - was turned on the upright post by means of a pole about 30 ft. long which was fastened at one end to the underside of the buck. The other end passed between the steps of the ladder at the back of the mill and could be pushed from ground level from one side or the other - thus the mill was kept head to wind.

The capacity of the horse-driven mill was small and Samuel decided to turn it into a tower windmill. This mill has since been described as a 'smock' mill. The name 'smock' is said to be derived from a supposed similarity in appearance to a man wearing a white smock, because the upper part is painted white and the lower brick storey tarred black. However, in my opinion Samuel's mill was an hermaphrodite, though not a true one - an adaptation rather, and is unique. There is almost certainly no other mill building like it in the British Isles.

I must mention here that post mills were sometimes dismantled and the buck re-built (or moved entire) and set on top of a short brick tower, on which it revolved, instead of on a post as formerly. These were true hermaphrodites (or composite mills). There were once four or five of them in East Anglia. 'Hermaphrodite' is not an easy word to grasp: millers and millwrights called them 'old Mawfreys'.

The first job done by Samuel was to throw many loads of stone and gravel all round and hard against the outer semi-circular brick lower wall of his horse-driven mill: this was easy as there were quarries only a hundred or so yards away. The object of the operation was to strengthen it and so provide a solid foundation for the upper works. He then began the placing of an eight-sided timber structure on top of a 16-sided timber structure. This kind of venture, when contemplated, makes the mind boggle, but more so when one realises that the wooden upper storey of the horse-driven mill was vertical sided and that the tower above it had to diminish as it rose on an inclined

plane! How the millwrights engaged by Samuel made such a plan practical is a piece of millwrighting wizardry. It was done through a means of splicing and bracing: there is not space to go into details here; anyone interested is still able to see for himself. Suffice to say the structure worked as a windmill for over 100 years.

The cap and sails were of the usual pattern of the times. In my grandfather's time two of the four common sails were replaced with spring-operated vaned sails. A six bladed fantail was added, replacing the old downward-reaching tailpole, fixed to the back of the cap hitherto and used when required to move the sails and cap round into the wind.

My grandfather added auxiliary power by installing a portable steam engine. It stood in a wooden shed and drove from the flywheel onto a pulley wheel outside the tower. The drive to the millstones was through the machinery used by the sails, the primary drive therefrom being first released by removal of a few applewood cogs from the headwheel.

At the beginning of this century my father removed the sails and all internal wind-driven machinery and put in a double set of millstones mounted on a hearst - one set for grinding wheat for flour, the other for grist grinding. He also installed a grain cleaner and an oat and malt crusher.

At the same time the steam engine was replaced with a new Cundall parrafin oil engine and a fine new engine house built to cover it including fuel tanks and water cooling tanks. The engine was the wonder of the neighbourhood and many came to see it at work. Small wonder since its exhaust could be heard a mile away!

My father's first feeling of wonder, however, soon turned into a mood of extreme irritation - and would have turned into down-right cursing had he not been a good Christian. The trouble was that the engine would only run satisfactorily on Russian parrafin and Russian parrafin went off the market! It declined to vaporise properly on any other oil and the result was a sticky piston, so sticky, in fact, that it would sometimes come to a stop under its own power, and then the withdrawing of that piston was a Herculean job!

A desperate situation will demand a desperate remedy. By a merciful providence a cure was found - Hudson's soap. At the end of each working day my mother made a solution by emptying a packet of the powder into a quart of boiling water, afterwards stirring it until it frothed at the mouth. My father unscrewed the drip-feed lubricator from the front end of the cylinder barrel and steadily poured the hot liquid into the hole, averting his face as far as possible from the flying spray. The mixture cleared the piston of stickiness; it also, within a short time, cleared all the lovely green paint from the body of the engine.

In 1932 my father purchased a new 25 h.p. Ruston Hornsby crude oil engine. It was a good engine and was in use until a few years ago. It is still there, as is all the machinery in the adjacent tower.

I said the post mill was a small box-like structure. The first change was to lengthen it by splicing about three feet onto the back; here was carried the flour bolter (dresser). The mill must now have been out of balance on the post so a similar piece of work was added to the front. When an iron poll-end replaced one of wood, and two vaned sails replaced two common sails, the added weight brought about a state known to millwrights as 'head sickness' - or sinking at the head of the mill - and it had to be strengthened by bracing with iron struts. This intermediate stage of replacing two of four common sails with vaned sails was a not uncommon practice: it gave a steadier drive, it also gave better control of the sail speed when gales were about. It was used on both the Drinkstone mills; they never carried a whole set of vaned sails as did later mills.

About 150 years ago a flint and brick roundhouse was built round the understructure and 40 years ago Wilfred Clover, who lived by the mill, dispensed with the use of the tailpole and added a six-bladed fly, driving onto iron wheels running round a circular track, so keeping the mill automatically head to wind.

The mill is fitted with one pair of 4 ft. diameter French burr millstones, driven direct from the brakewheel, and one pair of 3 ft. diameter stones driven from

the tailwheel; the smaller pair were used in light winds. The mill is capable of grinding 40 to 50 coombs of corn (each 4 bushels) in a working day - a day being reckoned as anything from 12 to 16 hours! In the past the mills would sometimes run night and day, or as long as the wind held, or as long as there was anything left in the mill to grind.

I think it was my great grandfather who enlarged the mill cottage. He added two rooms, one above the other, at the north end. The thatch was pulled off and the whole length of the roof raised and it is now a house of the Mansard type, covered with pleasing black glazed tiles. Two millmen slept in the upper room at the new end of the house, reaching it by a ladder from the kitchen. It was no uncommon thing for them to be roused from sleep in the middle of the night by a loud knocking on the wall by my grandfather who had been awakened by the sound of a rising wind whistling round the house. His men must now rise and put the mills to work.

MILLQUIZ

A quick quiz to test your milling knowledge, especially of Suffolk. The questions start easy and get more difficult! No prizes - answers are on page 18.

1. The first driven wheel in most wind and watermills has an unusual name. What is it?
2. What is the name given to the main long timbers in a tower mill cap?
3. Only one windmill still standing in Suffolk dates from the seventeenth century. Where is it?
4. What timber is commonly used for gear wheels?
5. Where in Suffolk could four post mills be seen in the early nineteenth century, in adjacent properties (and two on the same plot)?
6. Several Suffolk post mills had their roundhouses built from an unusual type of material, one of which remains at Syleham. What is it?
7. The last post to be installed was put up in 1882 in Suffolk. Where was the post mill?
8. What name is given to the hard, sand-like particles of wheat left after milling?
9. What was the name of the engineer who improved the design of undershot water-wheels in the early nineteenth century?
10. Distinguish between 'high' and 'low' milling.
11. Where was the last composite mill to stand in Suffolk and when did it disappear?
12. When, approximately, did the following mills cease work? (a) Kersey watermill; (b) Rougham post mill; (c) Buttrum's Mill, Woodbridge; (d) Woodbridge tide mill.
13. Which Suffolk firm of millwrights built fine smock mills with boat-shaped caps?
14. Who built the last corn mill in Suffolk, and where?
15. Name the last smock corn mill to cease work by wind in the county. What was its fate?

RAMSEY REPORT CHRIS HULLCOOP

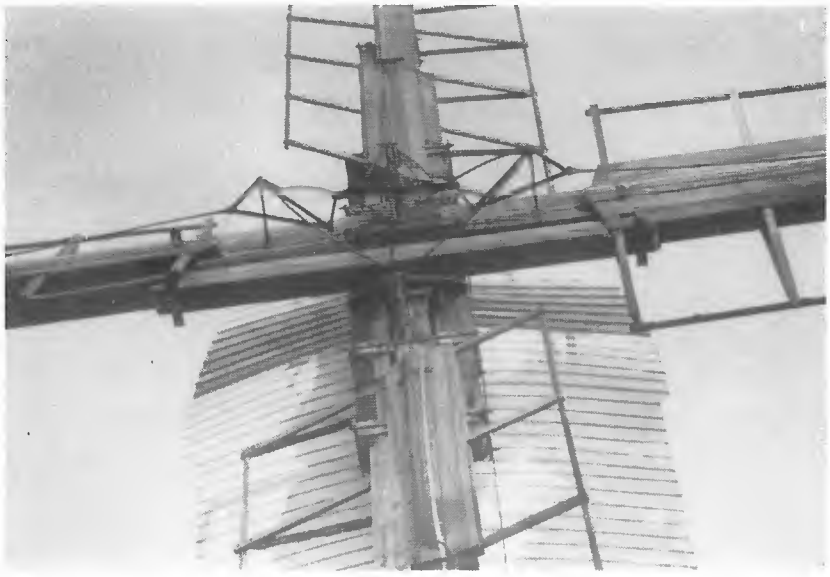
As usual we were at Ramsey mill early in the year measuring for the annual timber order which for the first time did not include any weatherboards. 1978 was a year of finishing off jobs. When we started in 1974 there was not a sound timber in the whole buck frame - even the crown tree was very rotten at each end. This year we decided to try and give this beam some of its former strength by clamping two heavy guage 6" by 5" R.S.J.'s (rolled steel joists) to its top surface. These would connect onto the R.S.J.'s overlaying the side girts, both of which had rotted through at the points where they crossed the ends of the crown tree.

I don't like R.S.J.'s in a mill, but there is a good case for this compromise. The millwright's solution would be a new crown tree and side girts. The conservationist might build up the strength of the rotted timbers with resin and carbon fibre rods. Both are far better than R.S.J.'s but very costly in time and money. The R.S.J.'s and their fittings cost us nothing (thanks to our friends in local industry) and they were quickly and easily fitted. If you decide in a post mill restoration to replace major timbers it is not long before it becomes a buck rebuild. At Ramsey we had neither the resources of money nor manpower for such a large project and we had to know where to stop. One advantage of the R.S.J.'s is that the original crown tree and side girts are still in place. On the stone floor there is not an R.S.J. to be seen. The floor around the head stones is now six inches higher than that behind the crown tree, and once the R.S.J.'s had been fitted the new floor was built over them. The R.S.J.'s overlaying the side girts were boxed in, the whole effect being neat and mill-like.

Outside each sail was repaired in turn. Last year we fitted the four new clamps, and this year we attended to sail bars, back stays, hemlaths, uplongs and leading boards. We tackled the worst sail first, replacing eight of the bars. Two others were almost as bad, but one on the back stock was surprisingly good. As the stock showed signs of charring in the centre we wondered if this was an 'insurance sail' replaced or repaired after a lightning strike in the 1920's. As each sail was completed we fitted back the striking gear with the outer ends of the fork irons located on little brackets coach-screwed to the whips. We reached the sails from two scaffold platforms and numerous ladders, trying all the time to work as safely as possible by roping on and wearing hard hats. Rather than paint the sails we wire brushed and treated them liberally with protim, some of which must have reached Ramsey church roof on one very windy day!

Meanwhile, Cliff Lovett worked patiently on with the storm hatch and head gable. There is never sufficient space between the back of the canister and the head, Ramsey mill being no exception. After meticulous measuring and drawing, a light aluminium-covered storm hatch was made. On either side of the opening special aluminium channels were fitted to hold the weatherboard ends and to form a frame for the hatch which can be removed at any sail position.

Inside, the buck gradually became more mill-like. The sack hoist with its leather belt drive, chain and pulleys was replaced. The brake, now very important with the sails free, was repaired and set up with adjustable stays. The head stones were jacked up to near level and all new (or rather second-hand from Mistley maltings) flooring was



RAMSEY MILL 1978

Above: The repaired sails, showing striking gear re-assembled (Photo: P. Dolman)

Right: Work in progress on a sail (Photo: Bob Hardwicke)

Below: Russell Thomas at work on the stone loor (Photo: John McCann)

Our achievement: Ramsey Mill 1974

September 1978

laid. Stone furniture, meal spouts and twist pegs all added finishing touches to the buck. In the roundhouse there are new steps from ground to first floor and the trapdoor on the dark second floor is now guarded by a rail on three sides. Several more treads in the main steps were replaced and patches let into the step strings which, although in poor condition, will last many years yet. Towards the end of the two weeks there were so many little jobs to complete that inevitably some had to be left.

As anyone who has worked on a mill will know, they are 'Forth Bridge-like', and you can always go on to do more! We have called the Ramsey work a 'holding operation', although it became much more than that. It is difficult with mill repairs spread over a number of years to maintain a uniform standard. There is nothing worse than having to go back and re-repair because more money and volunteers available impose a higher standard. This did not happen at Ramsey. The critical factors of money and volunteer time available remained steady throughout, and never looked like increasing by about ten times, the requirement of a working order restoration. Perhaps it is better to take on limited repairs which will keep a mill standing rather than plan very ambitious repairs which have little chance of being completed.

Ramsey is one of only four remaining tall East Anglian post mills, a large proportion of our windmill heritage. Mike Organ and I thank all our Members for their hard work, without which Ramsey mill would only be an over-optimistic symbol on a map.

MILLNEWS

WILFRED CLOVER

It is with sadness we report the death of Drinkstone's miller, Wilfred Clover, on November 26th. in Bury St. Edmunds hospital. Many of us have memories of him working the post mill and we are very lucky that the B.B.C. filmed and recorded him there for their documentary on English windmills called 'A Couris Thing'. I visited him on 5th. November to tell him of the completion of the new cap roof on the smock mill and to show him slides of our activities throughout the year. He was very pleased that the work had been done and, although he could not speak, laughed when he heard how we had dropped our precious box of nails from the cap roof in the dark. Sadly he never saw the new roof or his mills again. We have lost another link with the last days of the working mills and a good friend who made everyone welcome whenever they called. (C.H.)

HOLDING OPERATION AT DRINKSTONE

Our little holding operation on the cap of Drinkstone smock mill went smoothly and the object of keeping the roof shape intact has been attained. Some further work is needed next year to finish off, such as flashing the corners and painting the boarding.

Preparatory work entailed breaking up old pallets for use as boarding, and fabricating roof ribs using a 'gang nail' technique (see photograph). The result looks reasonable, although it was necessary to abandon the rear gable in the interests of speed of erection.

S.M.G. wish to thank those people involved, namely Mark Barnard, Mike Peek, Chris

NEW ROOF FOR DRINKSTONE SMOCK MILL

Top: New ribs going in, October 15th.
Above: Chris Seago making some roof ribs
Right: As completed, 29th. October

(All photos. by Peter Dolman)

EAST BRIDGE MILL RECONSTRUCTION

Below: Cap frame and fan assembly in early October
Right: Two views of the rebuilt cap and fantail at workshops of Jameson Marshall Ltd.

Seago, Chris Hullcoop, Peter Dolman, Reg Clover and his son, Mike Organ, John Snowdon and Des Codd. We also extend our thanks to Winnifred and Eleanor Clover at the Mill Cottage for supplying the workforce with tea and rock cakes!

LAYHAM MILL VISIT

After a spell of indifferent weather the day of our visit to Layham (5th. November) dawned sunny and remained so to welcome Members and friends of Suffolk Mills Group. Dr. and Mrs. Duffield started the mill up at 2 p.m. for those people already there and ran the mill for about fifty minutes, grinding five hundredweight of wheat with the single remaining pair of French stones.

Members were able to walk round the mill, listen to the tapping damsel, watch the splashing waterwheel and the purring cogs. They also virtually bought up the mill's stock of wholemeal flour!

After the visit, Mrs. Duffield invited us into the old Mill House next door for tea and delicious home-made biscuits (made with wholemeal flour of course!).

Some 40 people turned out, one from as far away as Kent, and with several millers present the discussion lasted well into the afternoon. All in all, an excellent afternoon out and Suffolk Mills Group thank Dr. and Mrs. Duffield for making us so welcome.

PROGRESS AT DALHAM AND EAST BRIDGE MILLS

Work on both projects continues apace; at Dalham the tower is almost completed, ready to receive the curb and looks very smart with its white boarding and the 'missing' doors and windows reinstated. Part of the machinery is being overhauled by Ransomes, Sims and Jefferies' apprentices at Ipswich, free of charge.

The rebuild of East Bridge marsh mill is also running well; so far the cap has been built (see photographs) and the curb is being levelled and trued up ready to build onto the tower (not yet started). Jameson Marshall Ltd. are following the original design for the most part, although they have 'improved' on things in places. The siteworks have probably been delayed too long now to start before the winter, but this probably will not affect overall progress.

NEW BOOKS ON SUFFOLK WINDMILLS

During the forthcoming year, two new books are appearing on Suffolk windmills. Appearing mid Summer is Brian Flint's large historical survey 'Suffolk Windmills', published by Boydell Press at about £12.15. The various chapters describe windmill development in the county, the various types of mills to be found in Suffolk in the past, millers and millwrights, preservation and other facets of local windmills. There is a gazeteer of all windmills known to have existed from well documented references, several sectional drawings of bygone mills and many large photographs.

Appearing in January or February is Peter Dolman's addition to the 'Windmills in ..' series of Contemporary Surveys, 'Windmills in Suffolk'. The format is altered from the style of previous books by Arthur Smith to enable more historical and technical information to be included. 145 windmill remains in the county are described, and all the major remains (i.e. excluding foundations) are illustrated, together with a sprinkling of interiors and old photographs. There is also a map and two line drawings. A fine

sketch by Arthur Smith illustrates the cover.

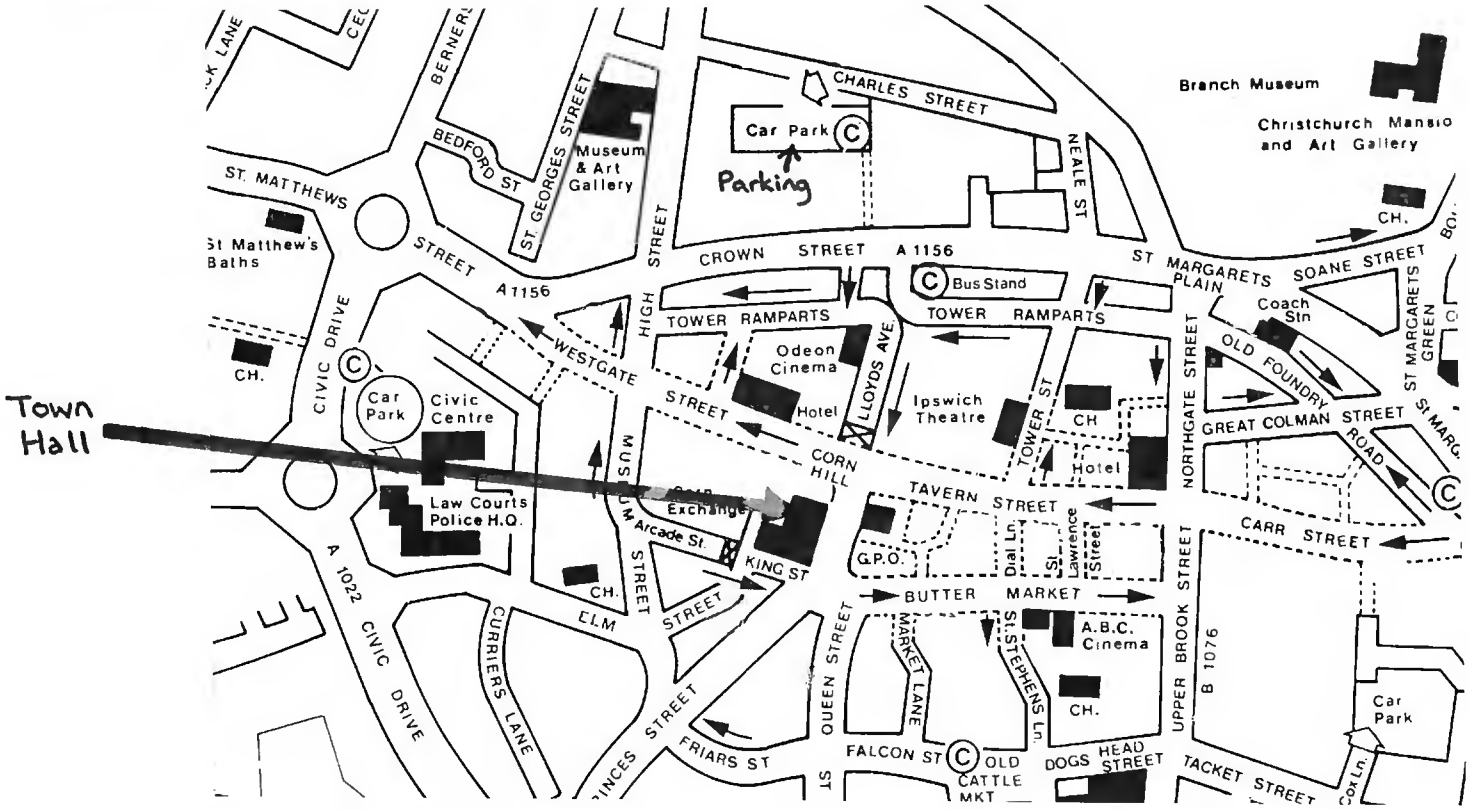
Suffolk Mills Group are publishing the book, although most of the finance is being met by the author and a few other S.M.G. Members. Due to an extremely generous donation (the donor wishes to remain anonymous) the purchase price of this book can be held down to £1.95, plus 25p. postage and packing. (Copies will be available from the Secretary or Editor.)

EVENTS

S.M.G. PUBLIC MEETING: 'AN EVENING OF WINDMILLS AND WATERMILLS'; IPSWICH TOWN HALL, SATURDAY FEBRUARY 24th. 1979; 7.30 p.m. Admission Free

This will be our second indoor public meeting, with the aim of publicising as widely as possible the work of the Group and stimulating public interest in mills generally. Guest speakers for the evening will be Rex Wailes OBE, FIMechE, FSA, FFSA, eminent authority on mills and the pioneer of their study and recording, and Hallam Ashley FRPS, a well-known mill photographer with many reminiscences, especially of East Anglian mills. There will also be illustrated accounts of the practical work and visits, etc., undertaken by S.M.G. during 1978, by committee members.

All in all, this promises to be a very enjoyable evening which, I'm sure you'll consider, merits your full support. See you there!



ANSWERS TO ''MILLQUIZ' ON PAGE 12

1. Wallower 2. Sheers 3. Drinkstone 4. Elm 5. Mill Hill, Woodbridge 6. Unfired clay blocks (clay lump) 7. Wetheringsett - Broad Green 8. Semolinas 9. J.V. Poncelet 10. 'High' milling involves the progressive crushing of the grain (e.g. through different rollers); 'Low' milling is a one-stage process (e.g. through stones) 11. Monk Soham; 1937 12. (a) early 1930's; (b) c.1880; (c) 1928; (d) 1957 13. Collins of Melton 14. Sillitoe and Brewer; Cockfield (1891) 15. Wortham; ceased work 1939 and was demolished in 1948.

Note Owing to lack of space the usual list of new Members has been held over.

CROSSWORD ENTRY FORM

To enter the crossword competition on page 7, please fill in the copy on this page, write your name and address below and post this page either to the S.M.G. Secretary or Editor (addresses on page 1).
The winner's name will be given in the next Newsletter, together with the solution.

NAME .....

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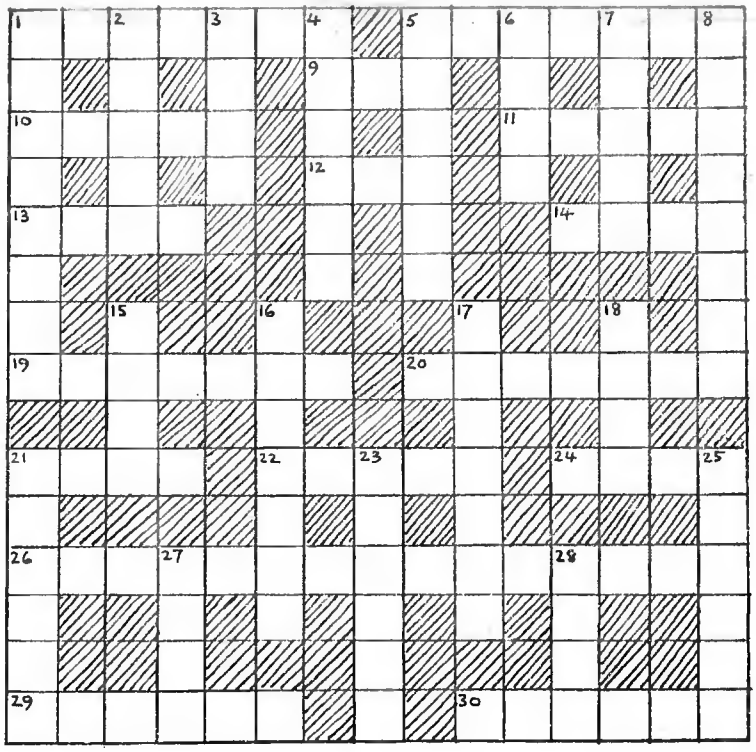

CLUES ACROSS

1. We can't sulk off mills here! (7)
5. Drained by the Dutch mills (7)
9. Grain enters the stones through this (3)
10. Apart from mills, the only example of complex gearing known in Mediaeval times (5)
11. I'm not such a dull tool really! (5)
12. To spread the sails (3)
13. Nineteenth century windpump innovator (4)
14. Not quite an island? (4)
19. Type of sawmill (7)
20. This may be done to a mill in a gale (7)
21. A predesessor of 27 down (4)
22. Attractive watermill feature (5)
24. Cullin stones are made of this (4)
26. This is 12 across, in order to work the mill (6,4,5)
29. Sails under the Thames (6)
30. See 15 down

CLUES DOWN

1. Device for catching bags of grain? (4,4)
2. One of many on a waterwheel (5)
3. The best posts come from these (4)
4. Large derelict West Suffolk watermill (6)
5. Type of waterwheel (6)
6. Tale of a mill stream? (4)
7. The largest millstones crush with these (5)
8. Helps clean the grain (8)
15. (& 30. across) Dressing machine (4,6)
16. Canister (4,3)
17. Device at brickworks or potteries (3,4)
18. Plenty of 24 across can be found here (4)
21. Makes gearwheel turn again (2-4)
23. These do a vice job on the stocks! (6)
25. A square cut stone finish (6)
27. Then came the stone's regalia (4)
28. Turn to wind (4)