

Somerset Scratch Dials.

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I. DESCRIPTION.

THE dials that may be found cut upon the walls of many of our parish churches do not appear to have been studied or compared, and hence they have hitherto escaped any systematic treatment. Examination has been made during the last five years of the greater number of our county churches, and photographs and careful measurements taken of all the dials found. Every church north of Glastonbury has been visited, with but slight exception, and about half the churches in the southern half of the county have been searched for dials as well. Sometimes, no doubt, the object of the search has been missed, either through the church walls being covered with creepers, which render a thorough examination impossible, or because a dial was not sufficiently obvious to attract notice. It is extraordinary how easy it is to pass one without seeing it, even when the eye has had a certain amount of training. It is often a question of light. Sometimes lines will show plainly enough when the sun is shining that are well-nigh invisible in a poor light. It has been found that weak and badly worn lines show better in late afternoon sunlight than when, as at midday, the sun is straight in front of them. A slanting light causes shadows, which are absent earlier in the day, and shadows betray the grooves or scratches that one is seeking for.

The name Scratch Dial has been given this ancient form of sundial, as hitherto it does not appear to have had any name. It serves to distinguish them from the formal and properly made sundial which may be found so often upon the southern wall of a church. The name Mass Dial was also applied to them, for, as will be seen later, their chief, and often their only, function was to mark the hour for that service; but later investigations showed that numerous examples marked other services as well, and hence the name did not seem sufficiently accurate. It is true that the name finally chosen is not always happy, as some dials are not made with scratches, but with holes drilled into the wall. As this variety is not very common, and such dials often contain lines along with the holes, the name finally chosen is perhaps sufficiently descriptive.

If it be asked how such a dial can be distinguished from a true sundial, it may be said: 1. A Scratch Dial is cut directly on a stone in the church wall, while a sundial usually has a plate or face of its own. 2. The style or gnomon is always inserted at a right angle in a Scratch Dial, while in the properly constructed dial it is fixed at an angle which varies according to the latitude of the place. 3. A Scratch Dial never has any figures at the ends of the lines to denote the hours, as a real sundial has. To this may be added that while a sundial gives all the twelve day hours, a Scratch Dial often only gives one or two of them. An example of a type which is perhaps the commonest may be found upon the church at Stratton-on-the-Fosse (Fig. 1). It is situated on a quoin stone on the south-west corner of the nave, at about seven feet from the ground.

Sometimes a complete circle surrounds the lines, as shown in the example from Lullington Church (Fig. 2), or again it may be but a segment of a circle, such as that cut on a buttress of the church at Lamyat. The other type of dial, which is composed of holes only, is illustrated by the example from Upton Noble Church (Fig. 3). Here it will be noticed the

dial (which is upside-down) has, in place of the usual radiating lines, a semi-circle of holes or dents. A similar treatment may be found at White Lackington Church, only in this case there are fewer hours denoted, the holes extending in a short segment only. On the south wall of the church of Seavington St. Mary is a combination of each method, for there the dial has both holes and lines to mark the hours. No simpler hole dial has been found than the one at Milton Clevedon Church (Fig. 4), where, as will be explained later, a minimum of hours appears to be recorded.

Although it does not belong strictly to the subject treated of in this paper, it may be well to place on record the existence of three dials which are neither formal sundials, nor do they belong to the Scratch variety. On the outer buttress of the two, which form the eastern side of the south porch of Yatton Church, is a dial, which although cut directly on the stone, yet follows the rules of an ordinary sundial in other respects. The style was inserted at an angle, as the slanting hole still proves, and there were numbers cut at the ends of the lines. It is almost impossible to see the numbers when standing straight in front of the buttress, but by looking from the east side, across the face of the stone, they may be seen fairly well in certain lights. A photograph reveals the numbers 6, 7, 8, 9 on the left, and 3, 4, 5, 6 on the right, with great clearness, although it must be admitted that these figures were not discovered until the plate was developed. This dial, which is a link between the Scratch kind and the ordinary sundial, is probably early XVII Century.

The other two curious dials may be found, one at Bleadon Church, and the other on the church at Batcombe. The former is cut on the top of a buttress outside the chancel, and the latter is in a similar position on the east side of the south porch. If the Bleadon example had not been seen, the Batcombe one would have escaped notice. The top weather stone is divided into three lobes or crenellations, and at first

sight they appear merely an ornamental way of finishing off the buttress. The three lobes are arranged two in a line with a space between them, and the central one is placed opposite the space, but lower down on the slope of the weathering. The Batcombe dial is not exactly the same, and is somewhat too complicated to describe. At Bleadon there is an iron spike, which is broken, projecting from the church wall above the top of the buttress, and this may have served as the style. There is nothing corresponding to it in the Batcombe example. It is impossible to say how such dials worked, and somewhat difficult to assign a date for them, but they may easily be pre-Reformation.

II. THEIR POSITION.

It might seem needless to remark that a dial which has to depend upon the sun for its utility must be placed facing the south, and yet while the vast majority are in this position, many have been found that face in other directions. It is noticeable that in choosing a site for the dial, the maker seems, as a rule, to have taken a very practical view of the matter. It is nearly always placed where it would be met with at once by a person approaching the church. The most favourite place is on one of the sides of the south doorway, and the right hand is chosen in preference to the left in a proportion of more than four to one. But besides the south porch, any part of the wall may be used for the purpose if it has the requisite handiness for a person approaching the building. As a rule, a footpath leads one directly from the churchyard gate to the south porch. When this is the case, the dial will be, as stated above, by the side of the entrance. But should the footpath have to pass some portion of the church before it reaches the doorway, in all probability the dial will be found somewhere on the way. At East Brent, for instance, the gate leading from the road is at the east end of the church, and the dial is on the south-east corner of the chancel, which is the first part of the

FIG. 1. STRATTON-ON-THE-FOSSE.

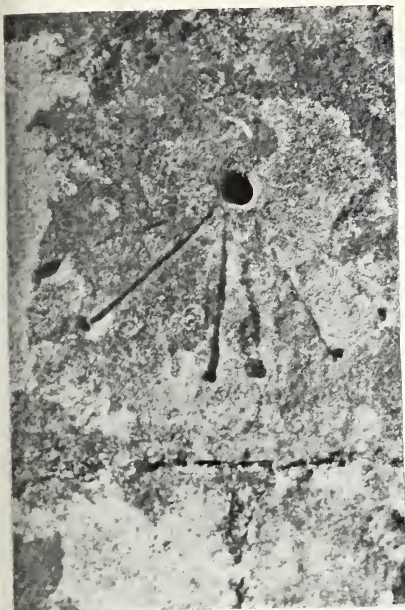


FIG. 2. LULLINGTON.

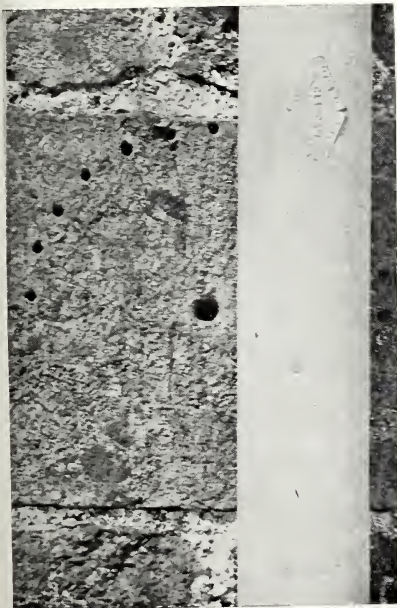


FIG. 3. UPTON NOBLE (Upside-down).

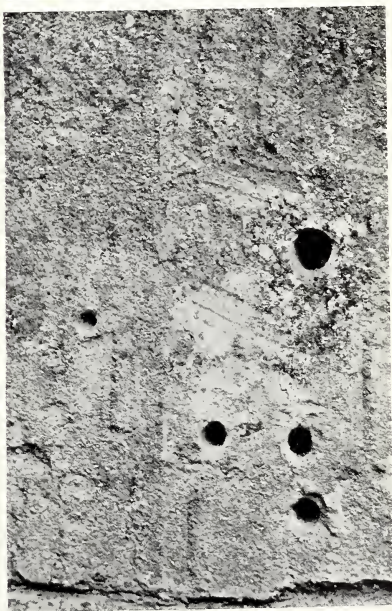


FIG. 4. MILTON CLEVEDON.

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building one comes to in walking to the porch. Tickenham Church is another example of the same arrangement. At Weare Church exactly the reverse occurs. There the churchyard is entered from the west, and the tower is the first portion of the building one passes on the way to the south porch. It is on the tower, therefore, rather high up, and composed of a semicircle of holes, that the dial is situated. When the entrance is on the north side, as at Compton Martin Church, the dial has to be on the other side of the building altogether. It is away from any door, for there is none on the south side, but here again it is only just round the corner, on the first buttress from the east end, and so it is at the nearest point to the north door at which it could be placed. At Doultong Church there was both a north and south entrance. The approach from the road is on the north, and to get to the south porch one has to pass round the west end of the church and turn to the left. Here on the left, on the very first buttress, is the dial, or rather dials, for there are two, one within the other. Sometimes a dial is in a position that seems quite off any beaten track. It may be round at the back of the church,—the entrance being on the other side,—and so far round and out of the way, that it does not seem a convenient place from any point of view. Yet perhaps a break in the churchyard wall clearly shows that ages ago there was an entrance there, but a road has been diverted, and the old way is no longer used. Sometimes too there are faint traces of a blocked up doorway near by a dial, which will account for its position. Through all these variations it is certainly curious to see how practical the dial maker usually seems to have been.

Noting the position of a dial will sometimes help us to fix the order in which different parts of a building were put up. At Cheddar Church, for instance, is a dial that must have been made before the chantry at its side was built, as the latter projects, and cuts off the sunlight except in the morning, and the dial is marked with some afternoon hours. The same

remark applies to the dials at Chew Magna Church (Fig. 6), which the south porch would appear to render useless at a fairly early hour in the day. It can be shown that the porches at Aller and Goathurst Churches must be more modern than the Scratch Dials that are underneath them on the inner door posts, and numberless other examples could be given where a dial betrays an ancient doorway or footpath long disused, or has itself become useless through a later addition to the building.

Another favourite place to find a dial is by the side of the priest's door into the chancel. Here, as in the case of the south porch, the right hand side is chosen far more often than the left. The existence of a dial close to each entrance to a church is fairly common, and seems to point to the fact that it was not merely to tell the bellringer when to ring, but it acted as a guide to both priest and people, to show when the service should begin.

But Scratch Dials are not found only on the south wall of a church, for restorations and alterations cause them not infrequently to be moved elsewhere. At Puxton Church a very ancient dial may be found let into a buttress on the north side of the tower, where it is used as a repairing stone. The church at Wanstrow has a fine dial stone on the chancel end, facing east, and Rimpton Church has one at the side of a window on the west end. Claverton Church had one looking east, but it has been recently restored to its rightful position, while the churches at Lamyat and Whitchurch have each one facing west. Sometimes the restorers allow the dial to remain in the south wall, but turn it upside down. At Upton Noble Church (Fig. 3) is an interesting and perfect hole dial which has been treated in this way, and it has a rain-water pipe carried across its face in addition. It is obvious, too, that the dial now on the left-hand side of the priest's door at Hutton Church was originally on the right, as it too is upside down.

The average height of these dials above the ground is about

five feet two inches. This was within easy reach for the carver to do his work, without the aid of a ladder or like help. The highest found, so far, are a little over eight feet, but it is certain that in one of these cases,—that at Lullington Church,—the dial has been rebuilt into its present position, while that on the church at Kingsbury Episcopi has also probably been moved. It is rare to find one so high as seven feet, and not many have been discovered as low as three. One of the lowest, and it seems in its original position, is at Tickenham Church, where an interesting hole dial is made at a height of only three feet five inches. But it may be taken as a general rule that where they are found over seven feet from the ground level, or under three, they have been translated at some time or other.

The size of these dials does not vary much, and perhaps, taken altogether, their tendency is to be smaller than in other parts of the country, notably in the eastern counties. The average length of the noon line is a little over four inches. Some dials have this line as long as six, and those on the churches at Doulting and Great Elm run to seven inches. At Radstock Church is a dial with its noon line apparently ten inches in length, but it has probably been added to, and the church at Stoke St. Gregory has a noon line carried down below the circle and ending in a cross. The part outside the circle is badly made and seems to be an addition. It would appear to be a copy of a cross on the top of this circle,—a decoration which renders this dial unique. The smallest sized dials found have a noon line of only two-and-a-half inches. Few are as small as this, and the example on the church at Swainswick is one of the best of its kind. It is a quaint, firmly made little dial which is quite unlike any other.

Mention may be made here of the duplication of dials. It is not uncommon to find two, three, and even four on the same church, and they are often quite close to each other. On the church at Stratton-on-the-Fosse are three dials.

One is on the south-west corner of the nave, the second is on the left-hand side of the south porch, and the third is on a buttress between the nave and chancel. One can only hazard a guess why so many were wanted for so small a church, and suggest that the one on the south-west corner of the nave was the first, and that it existed years before the beautiful Perpendicular porch at its side was built. Then the yew tree grew up and kept the sunlight away, as it does to-day. It need not have been this same yew tree, for it may have been one growing, according to their custom, from the roots of a still older tree. The failure of the first dial caused the carver to choose the buttress for the second attempt, as it was well away from the shade of trees, and likely to remain so. Finally, when, later again, the above-mentioned porch was built, a dial was made at its entrance, as being more convenient for the worshippers. Also it may be noted that the one on the buttress was probably not a success, as the stone proved soft and became badly weathered. To-day scarcely a mark can be found upon it, and it takes a good deal of searching to see it at all. Perhaps this is not an entirely satisfactory explanation, but it is offered to show in what manner, at least in some cases, a multiplication of dials was brought about.

Another cause was the alteration of the approach to the church. As was pointed out above, there seems to have been a desire to place the dial where there was the least trouble in seeing it, and hence a change in the path leading to the church might necessitate a new mass marker. It is also probable that as two exactly alike are never found side by side, the difference between them may be to register the time in summer and in winter. And once more: as it is difficult to obliterate a line cut deeply in stone, if there was any change made in the hours of service as the years went by, it would be better to cut a new dial, and less confusing, than to try to change an old one. But after all possible theories have been exhausted why there should sometimes be so many dials upon a church, there still

remains a good deal of mystery in the matter. Why, for instance, should Woolverton Church have as many as five, some of them quite close together, or the church at Tellisford require three, all at the entrance to the south porch?

A word may be said about these south walls on which the dials are cut. Using a compass, and making no allowance for the variations of the magnetic north, it is found that few of our church walls face due south. After a searching enquiry in the county of Hampshire, it was noted that a large number of the churches there have an orientation 20° north of east. Quite a large proportion of the churches in Somerset err by the same 20° from due east, and hence their south walls are incorrect to the same extent. This is not the place to discuss the theory of orientation, but a study of the way in which our Somerset churches were built with regard to this matter would not be without its interest. It is only necessary to say that in cases where this deviation exists, some rough correction had to be made by the dial cutter. Either the lines were put somewhat out of their true position, or the style was slightly bent until the shadow fell in the manner desired. It is this variation of orientation that makes it so difficult to compare dial with dial, or to be able to say with accuracy which line stands for any particular time within an hour or so.

III. THEIR MAKERS.

One of the questions connected with this subject that has a certain human interest is as to who were the makers of these little dials. They would appear to be nearly always the result of local talent, and not the work of professionals. When the services of travelling craftsmen were employed for stone or wood carving, we see their designs repeated from parish to parish, and we may frequently note the same hand at work, even when the design is different. But these Scratch Dials all differ from one another, and while preserving a general likeness, no set design can be traced in them. Again, their ex-

treme simplicity of construction shows that no professional aid was sought or needed, and hence we may conjecture with some certainty that they were usually the work of the parish clerk or the sexton. It is clear that the majority of Scratch Dials were made by persons who were not accustomed to the use of tools, and could not have had many at their command. It is not rare to find that when a somewhat hard stone has to be used, advantage is taken of a joint in the course above in which to insert the style. This avoids the difficulty of drilling a hole. Also for the same reason, vertical joints between courses are not infrequently used to save the labour of cutting hour-lines. This must have been because the dial maker was unable to cope with a difficulty that would easily have been overcome by a professional stone worker, and also because he lacked the tools. The dial on a buttress at Portbury Church (Fig. 5) is a good example. The hardness of the stone is attested by the tool-marks of the mason who dressed it remaining sharp and clear until to-day, and hence it was not an easy one to engrave. The style hole has been made at the junction of three stones, and advantage has been taken of other joints so that they may serve as hour lines. Subterfuges of this kind are frequently found, and they would seem to betray the work of an amateur.

IV. DISTRIBUTION.

Whether every church originally had its Scratch Dial it is now impossible to say, but it seems fairly clear that there was what may be called a fashion for them in places. In some parts of the county nearly every church has one, while in others they are to be found only here and there. Out of some thirty-eight churches that form the Taunton Union only four have dials, while six churches out of the fourteen that form the Keynsham Union possess them. Other causes besides fashion, or a habit of copying one's neighbour, may somewhat account for so great a difference as this. The quality of stone

used for building must, to a certain extent, affect the making of dials, as they cannot be cut on material that is soft and friable. Nearly all the churches in the Taunton district are built of a beautiful red stone that wears badly, and this probably accounts for the absence of dials upon them. The churches round Keynsham are made of a good hard stone that has resisted the wear of centuries, and hence the dials remain.

Another factor that undoubtedly influenced the distribution of Scratch Dials was the existence of a clock in the neighbourhood. It is worth noting that, in this county at least, these dials are never found upon the churches of any of our larger towns. No church in either Bath, Shepton Mallet, Wells, Glastonbury, Somerton, Wiveliscombe, Clevedon, or Frome, etc., has a dial. The reason is that, where a clock existed, it acted as timekeeper for places in its vicinity, much as it often does to-day. We can understand how the great clock at Glastonbury Abbey, which struck upon the bells, and could therefore be heard for miles around, regulated the time for the countryside. This may easily be the reason why the churches of the neighbourhood are without dials upon their walls.

It has been pointed out that Scratch Dials are of various designs. It cannot be found by comparison that any particular design is more favoured in one locality than in another. Those which have been called "hole dials" can be found in churches as wide apart as Tickenham and Seavington St. Mary, or Weare and Upton Noble. The existence of the circle, or its absence, is no more marked in one part of the county than in another. Only once has a likeness between two dials suggested that they were made by the same hand, or intended for copies. At Stanton Prior Church is a beautiful one of late design, measuring $7\frac{3}{4}$ inches in diameter, that also being the size of one on the church of Newton St. Loe in the adjoining parish. The construction of the two is also almost exactly similar.

V. THE LINES OR HOLES.

The perpendicular line below the style hole marks 12 noon. The line at right angles to it on the left side stands for 6 a.m., and the extension of this line on the right for 6 p.m. The most important line is one on the left, half way between the noon line and 6 a.m. It is situated in about the same position as the figure VIII is on a clock, and it is intended to mark 9 a.m. Referring once more to Fig. 1, it will be seen that this line stands out plainly, and is straight and clean cut. Where holes are used instead of lines the same remarks apply. The dial at Fig. 4 gives 12 noon and 9 a.m., while the dent above may be intended for 6 a.m. An example of a more developed specimen shown at Fig. 3 (upside-down) gives all the 12 day hours, but the hole opposite 9 a.m. is usually deeper, as will be explained later. No exact description can be given of the hours marked on any particular dial, as has been already said, unless the angle of the style and the aspect of the south wall are known. With regard to the style or gnomon, so far no example has been found of one still in its place. At Pawlett Church the shank is in the wall, where it is broken off nearly level with the face of the dial, and in one or two other places just the end of the style seems to remain at the bottom of a deep style-hole.

It has been said by those who have only had the opportunity of seeing a few specimens of the Scratch Dial, that they cannot be sundials, inasmuch as they do not record any known divisions of time. And the further objection is made that as many of them are in the shape of a wheel, it is conclusive against the claim, for as the sun can never shine upwards, the lines in the upper half of a circle cannot be for the purpose of telling time. The answer to the first objection is, that it is assumed that the office of these dials was to tell the time much as the parish clock does now. They do not appear to have been made for any such purpose, as their insignificant size and

position are sufficient to prove. Their office was to denote a church service, not an hour of the day. When the shadow fell upon the given line, then was the time for mass or vespers,—the exact hour was not of much consequence. It probably differed between summer and winter as much as twenty minutes, and at best it was never very accurate. Hence we must not expect to find in the majority of these dials,—and certainly not in the earlier examples,—anything approaching to the formal sundial, with its twelve day hours plainly divided and set out. A Scratch Dial is in reality a section of a formal sundial adapted to a special purpose, and hence it is not a time-teller but a mass-marker. It is quite true that some of the dials record more than the bare church service hours, but they are in a minority, and in most cases the lines referred to are clearly a later addition to the few that were on it originally. The dial on Langridge Church is a good example of this treatment, and the later lines are most easy to distinguish.

The second objection noticed above is, that as many of these dials are in the shape of a wheel they cannot have anything to do with a sundial. Fig. 8 is an example of this design from East Pennard Church. This objection would not be raised if a sufficient number of these ancient mass-markers had been compared. After a little experience it is not difficult to detect where extra cuts and scratches have been added. The primitive incisions are straight and cleanly made, while the additions are generally badly cut or merely scratched with a knife, and the lines waver and break. Where we find a number of spokes cut round the central style hole, we usually find the lines in the upper half of the quality described above. For example, the beautiful dial at Whatley Church has suffered in this manner, and a like fate has befallen those on the churches at Great Elm and West Cranmore. It is curious to notice how the dials on these three neighbouring churches have all been mutilated in the same way, and apparently by the same hand.

In some cases the Scratch Dial must have been in use right up to the Reformation period, and it is just possible, seeing the function these little mass-markers had, that they were obnoxious to the Reformers, and as they could not be obliterated, they were changed into another form. These wheel-dials are therefore merely mutilations, and their existence here and there proves nothing against the use to which the original part of them was put. They are not very numerous compared with those of the normal type, as, for example, in the Shepton Mallet district, out of thirteen dials, only two have been turned into wheels. Again, in the churches that form the Keynsham district there is only one wheel among seven, while in the Bath district none of its six dials has been mutilated in this manner.

VI. THEIR USE.

Although many of the details connected with this subject must necessarily be matters for conjecture, for lapse of time alone has made certainty impossible, yet the main purpose for which these Scratch Dials were constructed stands revealed with great clearness, when a sufficient number of them are examined. Their primitive object was undoubtedly to mark the hour for mass. In the majority of dials the mass line differs from all the rest, in some way or other, and it is often the only line. If Fig. 1 be examined, it will be noticed that the highest line but one on the left is sharper, straighter and more distinct than any of the others. At Chew Magna Church is a dial (Fig. 6), where the line corresponding to the above stands out almost by itself, and is made with a deep straight V-cut, the other lines being mere scratches of varying depth. At Fig. 5, Portbury Church, this same line is much deeper and wider than the others, and even in dials that contain a great number of badly weathered lines, such as that on the porch at North Stoke Church, it is not difficult to pick out the original line almost at a glance. One of the three dials cut upon Tellisford Church

FIG. 5. PORTBURY.

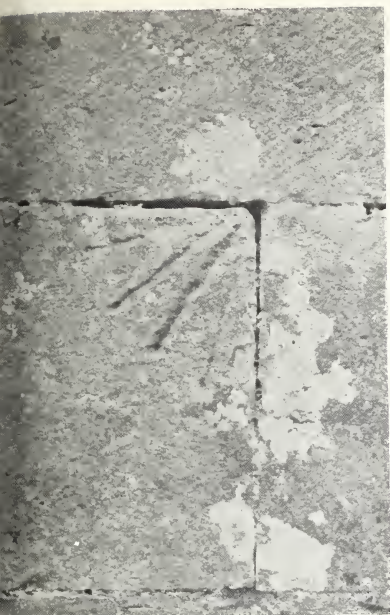


FIG. 6. CHEW MAGNA.

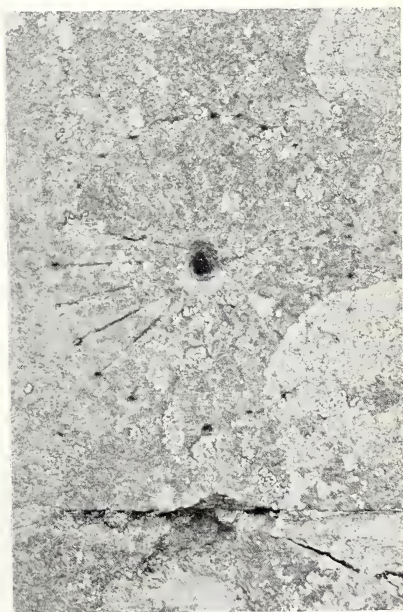
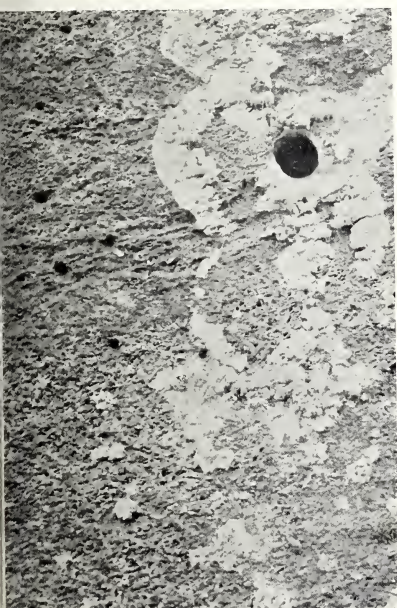


FIG. 7. WHITE LACKINGTON.

FIG. 8. EAST PENNARD.

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contains apparently but one line, as also does that on Kilmersdon Church, although in the latter case it is now almost invisible. These are both in the mass line position. The testimony from the hole dials is the same. At Tickenham Church, for instance, the hole corresponding to the aforesaid line is deeper than its neighbours, and may have been made to take a peg, while the dial at White Lackington Church (Fig. 7) has this same hole duplicated, there being one in front of the other. A compromise is effected at the church of Seavington St. Mary, where a hole is drilled upon this favoured line. The celebrated Saxon sundial at Kirkdale also has a line in the same position as the above, marked with a double cross,—a fact that seems to have escaped observation hitherto. -

In discussing which hours of the day the lines on a Scratch Dial represent, it has been shown (No. 5) that while noon will always be the line that is perpendicular (supposing the style to have been inserted in the wall fairly straight), the other lines may vary a good deal according to the way the wall is built, facing true south or failing to. Hence, unless these two factors are known,—the angle of the style, and the orientation of the church,—the lines on a dial cannot be interpreted with accuracy. But they can be read sufficiently to show that a line corresponding with the position of the figure VIII on a clock face will be 9 a.m. In most churches in pre-Reformation days this was the usual hour for mass.

But besides this 9 a.m. line, many dials contain others, as was shown above. The perpendicular or noon line is present in some form or other in every dial that has been examined. It is difficult to find any reason why this line is so constant. It has been suggested that it marked the time for the mid-day *Angelus* bell, but this almost certainly could not have been its use. The mid-day *Angelus* is quite a late development, and large numbers of these dials must have been cut some centuries before this devotion became general. At Cropredy in Oxfordshire in 1512 a bequest was made to “toll dayly the Avees

bell at vi of the klok in the mornyng, at xii of the klok at noone, and at foure of the klok at afternoon,” and it would appear to be the earliest mention of a mid-day *Angelus* that has been found. It seems, therefore, improbable that the noon line marked the 12 o'clock *Ave* bell on any but a very few of the latest dials.

One of the earliest accounts of the *Angelus* that we have is from the Statutes of Wells Cathedral, A.D. 1331, which direct that “three strokes should be struck at three several times upon the great bell in quick succession,” and this shortly before curfew. This evening *Ave* was said throughout Europe as early as the first half of the XIV Century, and it would usually be rung after sunset. This fact seems conclusive against the later hours, often found on Scratch Dials, being used to time the evening *Angelus*, as the sun would not have been shining when it was rung.

Many dials have a 6 a.m. line cut very distinctly, and it may be that in some parts of the year this line acted as a guide for ringing the early morning *Angelus*, but it is merely theory, and there are no facts that can guide us in the matter. The morning *Ave* was introduced next after the evening one, and it was said throughout at least one of the centuries that the Scratch Dial was in use. We find Archbishop Arundel ordering it to be rung in England in the year 1399. Other lines which are fairly constant on dials, are those that fall about 2 or 3 p.m. Here we are on surer ground than when speculating about the *Angelus*. The usual time for vespers would have been in the early hours of the afternoon,—the exact time being probably earlier in winter than in the summer. Among the dials which appear to record these hours with clearness are those on the churches at Doultling, Wellow, Lamyat, Swainswick, Stratton-on-the-Fosse, and many more.

In spite, therefore, of the ill-treatment so many of these primitive dials have suffered at the hands of the idle boy with a knife, in spite of the church restorer who has tried so fre-

quently either to fill the lines with cement or obliterate them with a scraper, in spite too of some centuries of wind and storm, enough evidence exists to show conclusively that the original object of the Scratch Dial was to mark the hour for mass. And if it had a further use, it was probably to tell the hour for vespers as well, but that with regard to denoting the time for any of the three *Angelus* bells, the likelihood that such was its office is extremely slight.

VII. THEIR AGE.

The last question is perhaps the most difficult to deal with. First of all we may lay it down as fairly certain, that if a church possessed a clock, it would not be likely to use a Scratch Dial by which to regulate its services. Some of our parish churches, even those in comparatively small places, had clocks from an early date. Tintinhull Church had to supply a new rope for its clock weights in 1448, and the churchwardens seem to have replaced this timekeeper with another in 1541. The parish accounts show that money was spent on the Croscombe Church clock in 1483, and Pilton Church had one in 1511. Clocks came into use in Europe in the XIII Century, and one of the earliest in this country was put up by the Benedictines at Westminster in 1288. The Canterbury monks, not wishing to be outdone by their London brethren, made a clock for the cathedral in 1292, and we find the St. Alban's community following with one in 1326. The Glastonbury clock is another example of Benedictine enterprise in this direction, and they all go to prove that timekeeping with an instrument was fairly common, at least in the greater religious houses during the XIII and XIV Centuries.

But clocks were probably not much used in ordinary parish churches until the middle of the XV Century, and Tintinhull and Croscombe are examples of this. Now the custom of having sundials on church walls is known to be much older

than the earliest mention of clocks, and we have the celebrated Saxon dials at Kirkdale and Great Eadston in Yorkshire, and several others, in proof of this. For a rough guide then as to age, we may say that the Scratch Dial was probably first used between the time when the Saxon sundial went out of vogue, or was destroyed, and the date when the clock became common. There were two causes that brought about the disuse or the destruction of Saxon sundials. The first was the change of style in church building that followed from the Norman Conquest. The small Saxon buildings must have been largely superseded all over the country by churches of the newer type, and with the change or restoration the old dials would have been destroyed, as they were cut immediately on to the stone. And secondly, the system of dividing the day into four "tides" of three hours each was out of date, and a new method of reckoning the hours was being everywhere adopted. Hence the Saxon dials were of use no longer. It has been said that all these Scratch Dials are of Saxon origin, either because they were made in Saxon times, or because they continued to divide the hours in a like way. If a Scratch Dial is compared with either of the Yorkshire examples mentioned above, it will be seen that there is scarcely any similarity between their markings, for one records not times, but services, and the other is intended to be a parish clock that will tell all the day hours.

That we may be able to fix with certainty a later date than the Saxon period for the dials we are dealing with, there is another consideration which shows that they cannot have come down from so remote a time. Many of them—perhaps a large majority in Somerset—are carved upon stonework of the Perpendicular style. Now it is incredible that stones with these poorly scratched dials on them should have been treasured through so many changes and vicissitudes, and then rebuilt into churches in the XIV and XV Centuries. If they were, they must first have been pulled out of their original site, then

perhaps built into a church of Norman design, and supposing this lasted until the latter part of the XIV Century, they would be again rebuilt in a Perpendicular church. Add to this the fact that, as in several cases the dial is cut upon two or even three stones, all these stones would have to be carefully fitted together if re-set in a new wall. And all the while the dials so saved would be recording time in a manner that had gone out of use for centuries. A paper will be found in Vol. XXXIV of these *Proceedings*, part i, 50, and part ii, 127, giving an account of the discovery of a "Saxon sundial" on North Stoke Church. If this dial be compared with that on Wellow Church, it will be found scarcely to differ from it in design, and dozens more like it could be produced in the county. The Wellow example is cut on fairly late Perpendicular work, and there is nothing to show that the North Stoke dial is any older. Several more instances could be given where Scratch Dials have been described in learned publications as dating from Saxon times.

It would, therefore, seem safe to say that none of the now existing Scratch Dials can have been made before the XII Century at the very earliest. Only one has been found in Somerset that is actually cut upon XIII Century work, and this is situated by the side of a Decorated Norman capital at Aller Church. Of course this is no proof that the dial is as old as the stone on which it is situated, but at least it cannot be older. Quite the majority, as has been said above, are on masonry that dates from the latter half of the XIV Century. They were probably made also throughout the XV Century in the more out-of-the-way places, and they ceased altogether at the change of religion. When and where clocks became common they were no longer necessary, but they would still remain upon the walls, as obliteration was almost impossible. We may therefore date Scratch Dials as being in the main the production of the XIV and XV Centuries, while one here and there may be somewhat earlier.

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VIII. CONCLUSION.

In conclusion it may be asked whether this subject is worth the time and trouble expended on it, for the dials are uninteresting as works of art and insignificant in themselves. While quite admitting that they are not of first-class importance, yet, as they have never been collected before, what has been done will prevent them disappearing from history altogether. Some hundreds must have been destroyed already in this county alone, both by time and church restorers, and probably about half of those now existing will have vanished before another fifty years have passed.

And there is a certain human interest attaching to them as well. Village life in the Middle Ages revolved round the parish church to a very great extent, and its feasts and services fixed the date and set the time for things temporal as well as spiritual. In most country places the church services were undoubtedly regulated by these Scratch Dials, and so from this point of view they played a not unimportant part in their day. They are few and feeble now, for the winds and storms of five or six centuries have nearly worn them out, but the remnant seemed worth saving for the sake of the story that they tell.