

## SCRATCH DIALS

BY THE RIGHT REV. ABBOT HORNE, F.S.A.

A SCRATCH DIAL differs from an ordinary sundial in as much as it does not tell the time for the 12 day-hours, but only marks one or two of them. In fact, it is not a time-keeper, but an event marker. In construction a scratch dial is very simple. There is a hole, about the size of one's little finger, made in the church wall, and from it one or two lines, a few inches long, radiate. One line is fairly constant in all these dials, and it marks mid-day, for it runs straight downwards, immediately under the hole, and probably denoted dinner-time. The shadow that fell on these lines was caused by a peg which usually stood out at about right-angles from the wall.

Dials made as above must have been very inaccurate time-tellers, but exact time, as we know it to-day, was not of much consequence in the years when things were regulated by the scratch dial. Even at the present day, in some country parts of Italy and of the west of Ireland, if you ask a peasant: "What time is Mass to-morrow?" he generally looks a little surprised and then replies: "When the priest comes, of course!" Until quite recently our shepherds on the South Downs timed their lunch with a stick set upright in the ground and, when its shadow was shortest, had their mid-day meal. In parts of Italy a nail is often driven into the cottage wall and, when its shadow falls on a certain mark, the family has its meal.

In all these methods of fixing the time for some event it is obvious that there must be wide differences according to the time of year, as the sun's position is always on the change. After scratch dials had come into literature, a great deal of nonsense was written about them. Some persons seem to have treated them as if they were scientific instruments and tried to prove that many of the lines cut on them were laid out with a good deal of astronomical care. They could not understand the rule-of-thumb method on which they were constructed and evidently thought that the workman who made them in the Middle Ages was a very learned person.

To understand the method of using a scratch dial you must try and put yourself back into the times when they were in use and on no account must you seek an explanation from present-day knowledge or custom. There are accounts, in

print, of the absurdities into which the authors have been led who have treated scratch dials as if made for use to-day. Until 1917 there was no literature connected with these primitive dials, beyond letters to papers and an article or two in magazines, where attempts were made to give probable explanations of these incised marks on church walls. A writer in the *Warwickshire Field Club's Magazine* in 1888 finishes his description of scratch dials by saying that "although they are not sundials, they may possibly in some way symbolise the sun."

An early writer on the subject was the late Sir Henry Dryden and he read a paper on scratch dials in 1896 to the Oakham Architectural Society. He says, after a careful description of a large number of them: "Their use and the reason for their formation have not been determined." He finishes his excellent paper by saying: "It is possible that some may have been a sort of 'time-table' to indicate the service hours." Hence Sir Henry Dryden was the first writer to suggest that scratch dials might have been connected with church services. The late Dr. J. C. Cox, in an appendix to the *Churches of Norfolk*, sets on one side the ridiculous theory that these marks cut on church walls may have been "sexton's wheels" or that they were "protractors." He had found 40 dials on 27 churches he had visited in Norfolk and comes to the conclusion that they were really sundials of a kind and were probably used for telling the time for church services.

In 1909 the writer was advised by an antiquarian friend who was regarded as a first-class authority in his particular line to take up the study of scratch dials with the object of finding out exactly for what they were constructed. As there was no literature on the subject, the plan adopted was to photograph 15 or 20 examples and then arrange their portraits so that they might be compared. After a good deal of staring at them nothing whatever evolved and it was decided to take another group of photographs in another part of the county. One of the dials in this batch gave away the secret. It had only one line on it, which ran from the style-hole to the position where the figure eight is on a clock-face. By setting up out of doors a board facing south, it was found that a shadow cast by a nail driven into the board at a right-angle fell on the figure eight at about 9 a.m., the usual time for Mass in pre-Reformation days. In *Mediæval Services in England*, by Chr. Wordsworth, published in 1898, this is quite clearly

proved and, when numbers of photographs of scratch dials were examined in the light of this information, it became plain that the nine o'clock line was the important one. In many cases, while a number of the marks on a dial were roughly or carelessly made, the 9 o'clock line was cut differently from the others, being carefully made with a chisel and not merely scraped with the point of a knife. Since the discovery of a dial with only one line on it was made, correspondents have supplied photographs from different parts of England with other like examples. In Kent, for example, there are four or five dials so marked.

Besides the Mass line being well made, it is frequently longer than any of the others, and sometimes has a cross cut on the end of it or a small hole, as if to hold a peg.

The lines on scratch dials have misled many of the early inquisitors, who have often regarded every line as part of the original, forgetting how easily they can be added to by a boy with a knife and the temptation of a soft stone to work on.

The peg that stood out on the dial and cast its shadow on the lines was really as innocent of any exactitude as any of the rest of the dial. In the first place we have to remember that our old churches are rarely built exactly east and west. We don't know with any certainty how our forefathers settled the points of the compass when they were putting in the foundations of a church. It could be judged, of course, by the rising and setting of the sun, but this must have been but a vague guide in many situations. When tested with a compass the walls of our old parish churches are a good deal out of the line that they were intended to be in. When a peg is driven into a wall that does not face due south by many degrees and when that peg is often put into the wall at anything but a right angle, the resulting shadow would be most difficult to calculate. Hence in all probability the peg was fixed first and the lines drawn afterwards, their exact position being obtained, not by calculation, but by experience.

The multiplication of these dials on a church wall was often a difficulty in the early days of their study. Why four or five, often close together, were wanted was a puzzle, but it seems clear that there was not one reason that could be given for them, but many. Often a careful study would show that the extra dials were merely copies of the original one. Then, besides the multiplication for amusement, there was duplication

for real use. Something cut off the sunlight from the dial and it could no longer do its work. It might be the growth of the churchyard yew-tree that got in the way, or an addition to the church in the shape of a new side-chapel projected so far, that the dial for the future would always be in the shade. The duplication of scratch dials on a church has often been a clue to the date at which a piece of building was added to the old church and a new dial had to be made as the original one had been thrown out of use. Then it seems that sometimes two dials were in use, one being probably for summer time and one for winter, but these are rare.

Some of the early writers on scratch dials who were quite sure that they were not sundials in any sense tried to prove their point by producing evidence of these marks being by the side of an inner door that had a porch over it, through which no light from the sun could ever come! But the inner door was of the Norman style and the porch, added perhaps 200 years after, was Perpendicular, and frequently a scratch dial may be found on the newer porch, as the old one had been put out of use.

The scratch dial on our English churches was probably introduced after the Norman Conquest, as the dials were certainly in use in Normandy at that time and are common there to-day in a mutilated form on many country churches. There may have been Saxon sundials in many places, but, as the Normans destroyed the poor little Saxon churches, the dials went with them and so something was needed to take their place. Real clocks, such as the one at Westminster Abbey, did not come in until about 200 years after the Conquest and in the gap the scratch dial was found useful. When clocks became common on churches, these simple dials were no longer needed, but it would not be easy to fix a date when they may be said to have died out entirely.

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The writer of this note is well acquainted with the scratch dials of Huntingdonshire, some of which provide illustrations to the article so kindly contributed in his 91st year by the veteran antiquary, Abbot Horne. At Long Stow the dial is situated to the east of the doorway of the south aisle built about 1280. At a later date part of the aisle to the east of the dial was thrown outwards to form a chapel, with the

result that no shadow could be thrown on the dial until noon. The growth of trees too may have caused difficulties. Arriving at Brington at 11 a.m. summer time, the writer was prevented from photographing the dials (towards the east end of the church) by the shadow of a group of tall trees growing round the south-east angle.

Ingens ara fuit iuxtaque veterrima laurus  
Incumbens aræ atque umbra complexa penates.

At Keyston the eastern wall of the south transept has a buttress, on the northern face of which is a dial, that naturally never sees the sun. This dial, which contains seven heavy wedge-like incisions in the *upper* half of the circle, was of course re-set when the transept was built at the end of the fifteenth century and scratch dials no longer had use or message.

Middlesex owns but few scratch dials. There are two at Harefield, two re-set at Hayes, traces of one at Cowley, and two at the little old church of St. Andrew at Kingsbury, which also possesses a pre-Reformation treble bell, the oldest in Middlesex. Another dial is re-set in the brickwork over the entrance in the south-west porch at All Hallows, Tottenham.

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