

ANCIENT SUN-DIALS.

Especially certain Irish Examples of Ecclesiastical use ; as illustrated by notices and drawings by the late Mr. GEORGE V. DU NOYER, M.R.I.A.

THE investigation of the means employed by the nations of antiquity for measuring time, and the earlier forms of the dials or other horological instruments with which they were acquainted, presents a subject well deserving of the consideration of the antiquary. A few examples of Roman dials have been preserved, none, however, it is believed, have been brought to light in the British islands, unless the curious specimens found at Dover and lately published in this Journal may be regarded as a relic of the Roman period.¹ Dials of early mediæval date are also of great rarity, and a brief notice of certain ancient sun-dials in Ireland cannot fail to prove interesting to the archæologist, no special attention having hitherto been directed to this curious class of Irish antiquities.

It may obviously be supposed that, in mediæval times, before the general introduction of those more complicated productions of mechanical construction with which we are now familiarised, the requirements of daily life, and especially the necessity of ascertaining the stated periods of the daily services of the church in their regular course, must have led to the construction of numerous dials or other contrivances for indicating the lapse of time. It is indeed probable that on or adjacent to many of our earlier ecclesiastical structures, some such appliances must, from a very early period, have existed, although now rarely to be found. The student of church architecture will not have failed to notice on the buttresses or in other portions, on the southern sides of many churches in England, especially of the later periods, the frequent occurrence of vertical dials, mostly of rude and unskilful workmanship, which however may doubtless have sufficed to indicate the appointed canonical hours prescribed by the ancient rituals. Of such dials those best known,

¹ Archæol. Journal, vol. xxi. p. 261.

probably, exist at Kirkdale in the North Riding of Yorkshire, and at Bishopstone in Sussex: the latter has been figured in this Journal. An account of these and of other early examples in England, is subjoined to the following description of certain dials in ancient cemeteries in Ireland, which seem to have been unnoticed.

The examples of dials of comparatively early date hitherto noticed by writers on the Ecclesiology of the Middle Ages, in the British Islands, are of the greatest rarity; they claim more careful investigation than seems to have been devoted to so interesting a subject of archæological investigation. Amongst the earliest and most remarkable of these examples may be noticed the vertical sun-dial, to which a date as early as Anglo-Saxon times has been attributed, placed over the door of the south porch at Bishopstone church, Sussex. It has been figured in this Journal, from an accurate drawing by the late Mr. W. Figg, F.S.A., of Lewes. The church presents some indications of Anglo-Saxon masonry, as we are informed by Mr. Parker, in the appendix to his recent edition of Rickman's Architecture. The dial may be assigned possibly to as early a period as the tenth or eleventh century; it is ornamented around the upper margin with the *mæander* or Greek fret, found frequently in Anglo-Saxon decoration, and the Saxon name²—EADRIC—is introduced in the space under this ornamental bordure. The letters, however, seem to partake more of Norman than of Saxon forms, and it has been supposed by some antiquaries that the name may possibly have been inscribed on the dial subsequently to its construction. Mr. Edmund Sharpe, whose knowledge of ecclesiastical architecture and constructive details is well known to readers of this Journal, made careful examination of the structure in his survey of the churches of Sussex previously to the meeting of the Institute at Chichester in 1835. He observes that the dial is probably one set up at the time of the Norman or transitional additions to the church at Bishopstone, more probably the latter; and the name which occurs on it, *Eadric*, may be that of the early founder thus commemorated.³ The dial is not formed of the

² Ibid. vol. xi. p. 60.

³ The Rev. D. Haigh, in his memoir on the Saxon Cross at Bewcastle, on which a dial is to be seen, attributes the example at Bishopstone to the seventh century,

and suggests that Eadric may have been a prince of the South Saxons, son of Egberht King of Kent, who killed his uncle Hlothari, A.D. 685; *Archæologia Æliana*, vol. i. 8vo. series, p. 179.

rough, yellow sand-stone of which the Saxon long-and-short work of the porch and west end of the church is constructed, but of Caen stone.⁴

This dial indicates prominently five of the seven great canonical divisions of the day, namely, matins (6 A.M.), none (9 A.M.), sext or mid-day, undern or tierce (3 P.M.), and vespers (6 P.M.);⁵ each of the intervening spaces being again subdivided into three hours, thus making up the twelve hours from 6 A.M. to 6 P.M., in accordance with the old Jewish division of time called "the old unequal planetary hours," which the early Christian Church universally adopted.

There exist other early examples of vertical dials of similar character, of which the most remarkable is to be seen over the south porch of Kirkdale church in the North Riding of Yorkshire, as noticed in this Journal in the account of the dial at Bishopstone before cited. The Kirkdale dial is accompanied by a Saxon inscription, which has been explained as commemorating the purchase and rebuilding of the church of St. Gregory by Orm the son of Gamal, in the days of Edward the Confessor and of Earl Tosti. It is supposed to have been constructed between the years A.D. 1056 and 1065; an inscription under the dial records that it was wrought by Hawarth and Brand the *presbyter*.⁶ In this instance each of the spaces intervening between the principal divisions is subdivided by a single line instead of by two, as at Bishopstone. If these minor lines are equidistant from those which are considered to indicate the five great canonical hours, the dial at Kirkdale would mark the following divisions of time:—

6 A.M.	.	.	Matins.	1½ P.M.	
7½ A.M.	.	.	Lauds.	3 P.M.	Tierce.
9 A.M.	.	.	Nones.	4½ P.M.	Compline.
10½ A.M.	.	.		6 P.M.	Vespers.
12	.	.	Noon.		

⁴ See also Sussex Archæol. Collections, vol. ii. p. 279; vol. viii. p. 322; and Mr. M. A. Lower's account of Bishopstone church, *Gent. Mag.*, 1840, vol. xiv., N. S., p. 496, where likewise the dial is figured. It is there pronounced to be of Saxon workmanship.

⁵ Lauds, which intervene between

matins and nones, may have been indicated by one of the minor divisions between the lines which mark those periods. Compline, between tierce and vespers, may also have been denoted in like manner.

⁶ See a memoir by Mr. J. C. Brooke, *Archæologia*, vol. v. p. 188, plate xiv.;

At the church of Edstone in Yorkshire, near Kirby Moorside, and about two miles distant from Kirkdale, a similar semicircular vertical dial, attributed to Anglo-Saxon times, exists over the south door. It appears to have been noticed only by the historian of Whitby, the Rev. G. Young, who has given a representation of the stone. The divisions are in this instance similar to those on the dial last noticed; the lines radiating from the gnomon being seven in number. Over the semicircle there is an inscription which has been read + ORLOGIU . . . ATORYM., (possibly *orlogium viatorum*) and on the left + LOTHAN ME WROHTEA.⁷

A semicircular dial of the same description is introduced amongst the elaborate interlaced and other ornaments on the obelisk or cross in the churchyard at Bewcastle, Cumberland, a monument regarded by archæologists with so much interest on account of the inscriptions in Runes which it bears, and the curious sculptures covering each of its sides. The dial is to be seen on the south side, at a height of about ten feet from the ground. The radiating lines are now somewhat indistinct, owing doubtless to the action of the weather on the stone; the semicircle was divided, however, as in the examples already described, into four principal segments; the intermediate divisions are not now distinctly seen. A representation of this remarkable cross has been given from a drawing by Lysons in his *Magna Britannia*,⁸ and a plate has recently been prepared from a drawing by the Rev. J. Maughan, rector of Bewcastle, for the work on Northern Runic Monuments by Professor Stephens of Copenhagen. The Rev. Daniel Haigh, to whose patient investigation of the inscriptions we are indebted for a very curious dissertation published by the Society of Antiquaries of Newcastle, has sought to prove from the Runes that the Bewcastle monument was erected to the memory of Alcfrid, son of Oswiu king of Northumbria; it is supposed that he died A.D. 664.⁹

Three ancient dials which exist in Hampshire have been

Camden's *Britannia*, ed. Gough, vol. iii. p. 330; Pegge's *Sylloge of Inscriptions*, p. 20; Young's *Hist. of Whitby*, vol. ii. p. 741—746.

⁷ Young's *Hist. of Whitby*, vol. ii. p. 747.

⁸ *Hist. of Cumberland*, p. cxcix. The

Bewcastle obelisk is figured also by Cardonnel, *Picturesque Antiqu. of Scotland*.

⁹ *Archæologia Æliana*, 8vo. series, 1857, vol. i. p. 149; the Runes on the cross are there figured, and explanations given, p. 169. See a notice of the dial, *ibid.*, p. 177.

described and figured in a memoir by Mr. Haigh in the *Archæologia Æliana*, and in the Transactions of the Archæological Association. Of these, one is in the south wall of the church of Corhampton, a structure assigned to the Saxon period, and supposed by Mr. Haigh to have been erected by St. Wilfrid, the apostle of the South Saxons; another is to be seen at Warnford, where the church was rebuilt by Adam de Portu in the twelfth century on the site of an earlier fabric erected by St. Wilfrid; the third is in the south wall of St. Michael's church, Winchester.¹ These dials are all of the same general type, a circle with foliated ornaments issuing saltire-wise beyond its verge, the lower moiety of the circle being divided by lines radiating from a central gnomon; in the two examples first named the divisions are only four; on the dial at Winchester there are ten, three of the radiating lines being marked by crosses, as at Kirkdale and elsewhere; the tenth, on the left side, is drawn beyond the line which in all these vertical dials marks the diameter of the circle.

Several other relics of this curious class and of early date might doubtless be found. Mr. Haigh has noticed a small, plain dial at the church of Headbourne Worthy near Winchester, in which portions of ancient work exist; there is also a dial in the south wall of the Saxon tower of Barnack church, Northamptonshire, and another may be seen in the south wall at Swillington, Yorkshire, in which instance the circle is complete, the lower moiety being marked for the dial. Of later date is a semicircular dial at Old Byland in Yorkshire, which bore the maker's name . . . TIDEMAN . . . ME FECIT.²

It is scarcely needful to remind the reader how commonly there are to be found on the southern sides of village churches in all parts of England, and especially on the vertical surfaces of the buttresses, rudely traced dials, some of them probably of considerable antiquity. Certain horological relics, also, of a different description are probably to be found not undeserving of the consideration of the archæologist. At the annual meeting of the Kent Archæological Society at Canterbury in 1858, Mr. Beresford Hope brought before the assembly a decorative tile forming a sun-dial,

¹ *Arch. Æliana*, *ut supra*, p. 177; see also Transactions Brit. Arch. Assoc.,

Winchester Congress, 1845, pp. 408, 410.
² *Archæologia Æliana*, *ut supra*, p. 179.

found near St. Ethelbert's Tower at St. Augustine's Abbey. It has been placed in an oak frame and deposited in the museum of the college that now occupies the site of that monastery.³

It is probable that mural sun-dials are also to be found on churches in foreign countries not less deserving of notice than the examples that have been thus briefly described; we are not aware, however, that any special attention has been given to the subject by antiquaries in France, Germany, or other countries, who have investigated so fully the details and accessories of ecclesiastical architecture. One example of some interest occurs to our remembrance. On the south side of the Minster at Freiburg in the Breisgau, a fabric commenced in the middle of the twelfth century, but mostly of the later part of the thirteenth, a figure in secular dress is to be seen, introduced in a niche on the crocketed pinnacle that surmounts one of the buttresses, namely, that nearest to the south transept.⁴ This personage, sometimes regarded traditionally as the builder of that portion of the church, is represented as holding in his left hand a semi-circular vertical dial, precisely similar to some of the early examples above described as existing on churches in our own country.

To the kindness of a lamented friend, the late Mr. George V. Du Noyer, an acute investigator of ancient relics in the sister kingdom, and by whose skilful pencil the pages of this Journal have on many former occasions been enriched, we are indebted for the following notices of ancient Irish sun-dials, and also for the interesting illustrations that have been prepared from his drawings.

“There exist in Ireland certain dials apparently of considerable antiquity, that differ from those familiar to the antiquary in England, which are mostly formed, as at Bishopstone, Sussex, Kirkdale, Yorkshire, and elsewhere, on the southern walls of churches, the usual position being over the south door. The Irish examples which have come under my notice occur on flat, erect slabs, placed like head-stones

³ *Archæologia Cantiana*, vol. i. p. lxxii.

⁴ The south aisle, the part of the Minster in which the figure above noticed occurs, may be of about the same period

as the admirable spire, commenced, it is believed, in 1283, and finished in 1330. See Moller's *Denkmaler*.

in ancient cemeteries. These objects will doubtless prove of interest to the archæologist, since to the present time attention has not been directed by antiquaries in Ireland to this particular subject of investigation.

The first dial, of which a representation is here given (fig. I.), is from the graveyard of the ancient ecclesiastical structure, now in ruins, on Inishcaltra, or Holy Island, in Lough Derg in the Shannon. It is on the top of a slab measuring 5 ft. in length by 16 in. in breadth, and intended, like the other Irish dials hereafter noticed, to be placed erect in the ground. These, with one exception, consist of a simple semicircle divided by radiating lines, so as to indicate the hours from six in the morning until six in the evening, according to the usual construction of an erect south dial. On the dial at Inishcaltra, the semicircle is divided into four nearly equal parts by five lines deeply cut; the perforation at the centre is large, and intended possibly to receive a gnomon of wood which, being shaped to a point, threw a slender shadow on or near to the circumference of the semicircle beneath. Each of these lines branches, as shown in the woodcut, with lateral strokes where it touches the semicircle, with the exception of that at the western end of the horizontal line, which has only one branch, while the horizontal line in its extension east of the gnomon has also, as will be seen by the woodcut, a branch on its upper side diverging beyond the limits of the semicircle.⁵ It is probable that the small terminal branches to the principal lines of the dial had a certain significance, and they may have marked certain times before or after the five important



Fig. I.—Dial at Inishcaltra.

⁵ This dial was discovered by the Earl of Dunraven, who gave to Mr. V. Du

Noyer a rubbing from which the accompanying woodcut has been prepared.

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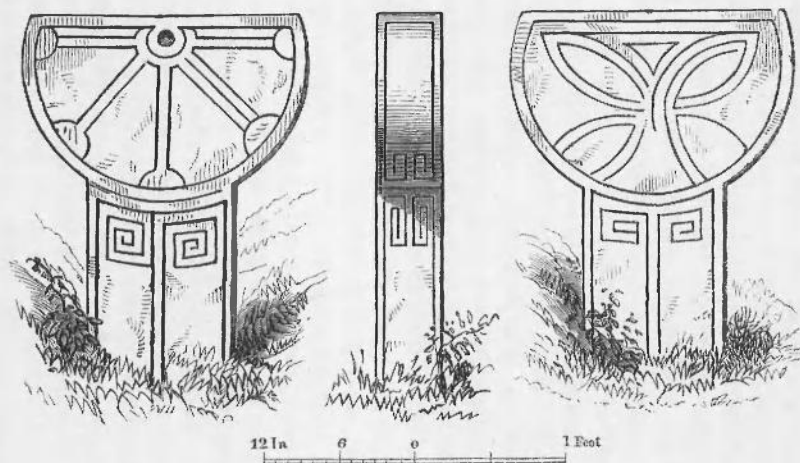


Fig. II.—Sun-dial in the graveyard of the Church of Kilmalkedar, co. Kerry.
From a drawing by the late Mr. George V. Du Noyer, M.R.I.A.

"It is cut out of a thick slab of grit, and now stands about 2 ft. 6 in. above the ground. Its form is that of an inverted semicircle resting on a massive rectangular shaft. Like the former dial, it indicates the five great canonical hours, but by double lines; the third hour, or tierce, being indicated by three lines. All these branch off into small semicircles, touching the outer rim of the dial. If we are to suppose that the points of the dial touched by these small semicircles were intended to mark time, we have apparently the same periods indicated as those on the Inishcaltra dial, and possibly an extra hour, or period, before matins, as the eastern end of the horizontal line has its small diverging stroke, and the triangular termination, extending above that line. It is worthy of observation, that the outline of this dial is more than a semicircle, approaching to the horse-shoe form; and it might be of interest to know what resemblance it may bear to those sun-dials called *Khaphir*, stated to have been introduced amongst the Arabians by Abul Harian, about the beginning of the thirteenth century, and so called from their resemblance to the hoof of a horse.⁷ This shape in the Kilmalkedar dial is clearly intentional, and suggests the notion that the maker may have intended the gnomon to mark a period before the hour of matins, and after that of vespers. The reverse of this dial is ornamented by the interlacing of four parts of circles, the lines being in one instance four times repeated, and the pattern thus bearing evidence of not having been finished. A flower-like cross is in this manner indicated; but if we look only to the spaces intervening between the segments, we get another cross of a different type, namely one of eight points, a form recognized by Irish antiquaries as characteristic of periods prior to the tenth century, and found in connection with Ogham inscriptions.

"The shaft and the sides of this dial are ornamented with the Greco-Irish fret occasionally found on sculptured doorways and arch-mouldings in early churches in Ireland. Dr. Petrie gives, in his *Inquiry into the Origin of the Irish Round Towers*, an example of this peculiar ornament, from capitals at the church of the Monastery at Glendalough. He observes, that the decoration in question does not occur

⁷ See the article *Dialling* in the *Encyclopedia Britannica*.

on any other capitals in Ireland, but that it is very common on Irish tombstones of the ninth and tenth centuries, and in manuscripts of a still earlier age.⁸ He has also figured tombstones at Clonmacnoise, commemorative of persons who died about the close of the tenth century, and on which appear ornaments of a similar type, somewhat modified.⁹ This fret, it should be observed, occurs with the remarkable knot supposed to have been used as a symbol of the Trinity, namely, the *triquetra*, which appears in Irish MSS. as early as the sixth century, and also on tombstones of the ninth and tenth centuries. Dr. Petrie observes that he had seen no example of it on such sepulchral monuments after that period, the latest being on a tombstone at Clonmacnoise, the memorial of Maelfinnia, who is supposed to have died about 991.

“The opinion of so competent an authority in all matters connected with Irish antiquities cannot fail to be received with confidence, and in Dr. Petrie we have a safe guide in the endeavour to determine the age of the curious relic at Kilmalkedar.

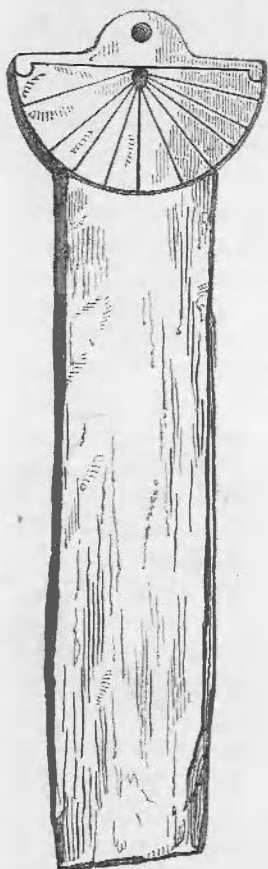
“The old church at that place is one of the most remarkable and perfect of its class in Ireland; the internal decoration, which consists of stunted pilasters forming blank arcades along the walls, renders it in some respects unique, and second only in architectural interest to Cormac’s chapel at Cashel. Its date may be assigned to the early part of the twelfth century. The western doorway is semicircular, headed and ornamented with zigzag carving. At the distance of some yards stands the dial above described, occupying probably its original site, although it now faces east and west, and it has been converted to the purpose of a head-stone in the grave-yard. The quaint form and ancient aspect of this relic, hitherto, however, overlooked by the antiquary, has doubtless caused it to be regarded with a certain degree of veneration. In times past, it has been unskilfully copied, to form head-stones of various sizes. The surrounding grave-yard is thickly set with imitations of this

⁸ Ecclesiastical Architecture of Ireland, p. 254.

⁹ Ibid, pp. 323, 324. The varieties of the fret-pattern in early MSS. are numerous, and it is found combined with other types of ornamentation. A good

example of the fret resembling that upon the dial at Kilmalkedar, but somewhat more complex in design, has been given by Mr. Westwood in this Journal, vol. x. p. 288, in his memoir on Early English and Irish Ornamentation.

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1 FOOT.

Fig. III.—Dial from the old church at Clone, co. Wexford.

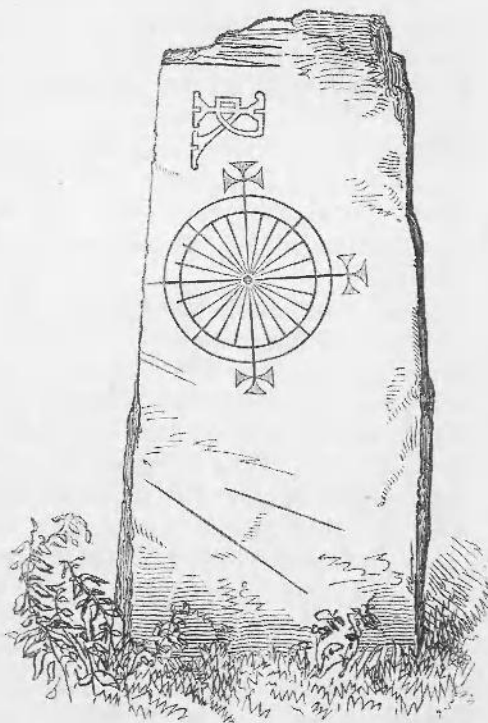


Fig. IV.—Dial at Kells, co. Meath.
Diameter of the outer circle, $12\frac{1}{2}$ in.

From drawings by the late Mr. George V. Du Noyer, M.R.I.A.

curious dial-slab, and even the hole, intended in the original to receive the gnomon, has in some of these memorials been roughly imitated, by a notch at the top of the head-stone.

“The third example which I proceed to describe (fig. III.), is an ancient dial on the south-east side of the old church of Clone, near Ferns, in the county Wexford. In general shape this dial resembles that at Kilmalkedar; but the gnomon, as it would appear, was intended to be formed with a diagonal brace or support attached to the point of the erect rod which was fixed in the stone at the central point from which the hour-lines radiate. A projection which is formed on the upper edge of this dial seems to have been perforated for the insertion of this brace (see woodcut, fig. III.). The hours indicated on this dial, as determined by measurement of the spaces between the radiating lines, appear to be as follows :—

A.M.			P.M.	
6	.	Matins.	1 $\frac{1}{4}$	
7 $\frac{1}{2}$.	Lauds.	2 $\frac{1}{2}$	
9	.	Nones.	3 $\frac{1}{2}$	Tierce.
10			4	
11			5	Compline.
12	.	Noon.	6	Vespers.

“The old church of Clone has been destroyed, with the exception of the west gable and doorway, the jambs of which converged, the narrow opening being considerably wider at the bottom than at the top, and terminated flat, with a space or tympanum, over which, doubtless, there was a semicircular ornamented moulding; but the stones, or voussoirs, of which it was formed, not being bonded into the wall, have entirely disappeared. Around the exterior margins of this semicircle were placed, at equal distances apart, five projecting stones carved to represent human heads, probably intended as portraitures. That at the crown of the arch bears a low pointed mitre; and may represent a bishop or an abbot; the face is smooth, and seems to bear the impress of earnest thought. Below, on the north side, is a male head, with a narrow flat cap or fillet and long moustaches; and, at the corresponding place on the south side, the head of a female with a somewhat similar fillet; these may have represented the lord of the territory and his

wife, benefactors probably to the fabric ; both are expressive of indolent and luxurious ease. Below the female head, and where the springing of the arch commenced, there is a male head, which, from a certain air of grotesqueness, with the shaven crown, and lines starting upwards from the root of the nose, after the fashion of a modern pantomimic clown, and the wide mouth, suggests the supposition that it was intended to pourtray the jester or fool. On a stone just over this head is carved a greyhound or slender dog in relief. The head which corresponded to this last, at the opposite springing of the arch on the north side of the doorway, is wanting ; it may now be seen over the wall of St. Edan, or Moque, at Ferns, to which place it was brought some few years since, when the masonry over the wall was reconstructed. It represents a male head of fair proportions and mild expression. It may have been the portrait of the architect of the church.

“From the general style of this doorway and its decorations, its date may be probably assigned to the early part of the thirteenth century ; and there appears no reason why the sun-dial associated with this church may not be of equal antiquity.

“I now proceed to notice another curious example of mediæval gnomonics in Ireland, namely, a dial incised on a slab of grit-stone (see fig. IV.), now serving as a head-stone in the grave-yard of the church of Kells, co. Meath. Although comparatively less ancient than the dials previously described, this specimen may be worthy of record as it seems to form a connecting link between the dial at the old church of Clone (fig. III.), and those commonly constructed as late as the last century. At first sight, the object of giving to the dial at Kells its circular form, and dividing the circle into twenty-four equal parts, is not apparent. If it was intended to place the slab erect, the lower moiety of the circle would obviously have sufficed ; whilst if placed in an horizontal position, the upper semicircle would have answered the required purpose. I can therefore only suppose that the maker, the initials of whose name may have been indicated by the peculiarly ornamented R so conspicuously engraved on the slab, was required to construct a dial which might be used either in a horizontal or a vertical position. If we place the slab

so that the letter R is in its right position, we must regard the dial as intended to mark the time by the horizontal shadow ; the lines dividing the circle into four parts, and terminating in crosses, may be supposed to have pointed north, east, and west. That such was the intention may, moreover, appear to be indicated by the absence of such distinctive mark, where, according to this supposition, the southern end of the meridional line should be found, unless, indeed, the edge of the slab may in that part have been cut away.

“The canonical hours prominently marked upon this dial would thus be, Matins (6 A.M.), Nones (9 A.M.), Prime, or Noon, Tierce (3 P.M.), and Vespers (6 P.M.); the intermediate lines indicating the other hours of the day. A portion of the original iron gnomon remains affixed by lead in the centre of the circle. The lines cut diagonally on the face of the stone seem to be accidental. The cruciform terminations of the principal lines can scarcely be recognized as indicating by their fashion the date of this dial, but it may perhaps be approximately shown by the initial R found at its side, and bearing a certain resemblance to the letters of the Elizabethan, or of a somewhat earlier style. In printed books of the beginning of the sixteenth century, letters of similar character are to be found, as we see in the *Hand-Book of Mediæval Alphabets*, by Mr. Henry Shaw, Plates 17, 19. The like peculiar fashion may be also seen in letters from Salisbury Cathedral, dated 1554, and figured in that useful Manual ; and it is shown, slightly varied, in a remarkable inscription of earlier date, namely, the original foundation-stone of Wolsey’s College at Ipswich. That memorial, bearing the date 1528, is now preserved at the Chapter-house of Christ Church, Oxford.¹

One more of the peculiar and primitive sun-dials to which I have been desirous to invite attention, remains to be noticed. Its existence came under my observation very recently, some years after I had examined the specimens that have been described, and prepared the drawings from which the wood-cuts that accompany this memoir have been executed. The dial in question (fig. V.) is to be found in the graveyard of the old church of Saul, co. Down, which is

¹ *Memorials of Oxford*, by Dr. Ingram, vol. i. p. 63.

perched on the summit of a knoll, near the little village of Raholt, the spot where, according to tradition, St. Patrick first landed in Ireland on his transit from Scotland. This is now an inland hamlet at the extremity of a long, narrow slip of alluvial land, from which the sea is at the present time kept back by an artificial embankment. This dial, here figured, is carved on a head-stone measuring about 19 inches in breadth. The length of the slab may origin-

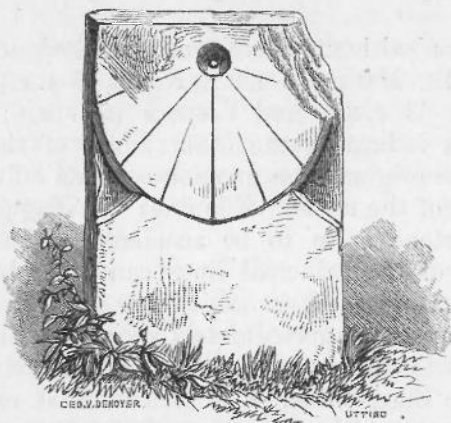


Fig. V.—Dial near the old church of Saul, co. Down.

ally have been considerably greater than at the present time. It will be observed that the space on which the dial is formed is not semicircular, as in the other examples before described, but escutcheon-shaped; the radiating lines have suffered considerable injury, and that for the hour of 6 A.M. is wanting.”

Very shortly after we received from our talented friend, then resident at Antrim, and engaged on the important work of the Geological Survey in Ireland, the particulars last stated, accompanied by drawings of the dial that he had found near the village of Raholt, on August 18th in the last year, the sad intelligence of his untimely decease through a sudden attack of fever reached us. It is with painful interest that we place before our readers these last contributions of so valued and intelligent a coadjutor; the peculiar skill and facility with which he delineated relics of antiquity are well known to us through the admirable Pictorial Catalogue

of the Museum of the Royal Irish Academy, that attracted so much attention in the Museum formed during the Meeting of the Institute at Edinburgh, and also on other occasions.

In concluding these notices of ancient horological appliances, a singular object of stone, found in 1816 in ploughing within an entrenchment near Cleobury Mortimer, Herefordshire, claims consideration. The spot is near an old road leading to Clee Hill and Ludlow, and about four miles from Titterstone. The relic in question was exhibited at the meeting of the Cambrian Archæological Association at Hereford in 1867, and by their courtesy we are permitted to place before our readers the accompanying illustration, given in their Journal with a short memoir by the Rev. Dr. Wilson.²

This object, of coarse sandstone, is flat on one side and convex on the other; the dimensions are $3\frac{1}{2}$ in. by about $3\frac{1}{4}$ in.; the thickness about $1\frac{5}{8}$ in. It will be seen that it is perforated by a hole cut with considerable regularity, from which, on both sides, lines are drawn radiating towards the circumference. There are also seven perforations of smaller dimensions, apparently intended to be equidistant; and towards these some of the radiating lines appear to be drawn; an eighth possibly existed in a part of the stone that has been broken off. There is, moreover, a perforation passing through the thickness of the stone transversely, possibly adapted for some purpose of suspension; of this hole, one termination only on the right hand edge of the stone is shown in the woodcut. Two rudely fashioned stone whorls, the "fairly mill-stones" or "pixy grind-stones" of some localities, possibly to be regarded as fastenings of dress rather than, as frequently supposed, the *verticilla* of the spindle used in spinning, were found at the same time in the encampment before noticed.³

No satisfactory suggestion had been offered in regard to the intention of the larger of these stone relics, namely, that first described. It was conjectured that it might have been worn as an ornament of the neck suspended by a thong or cord that passed through the transverse aperture, and that such

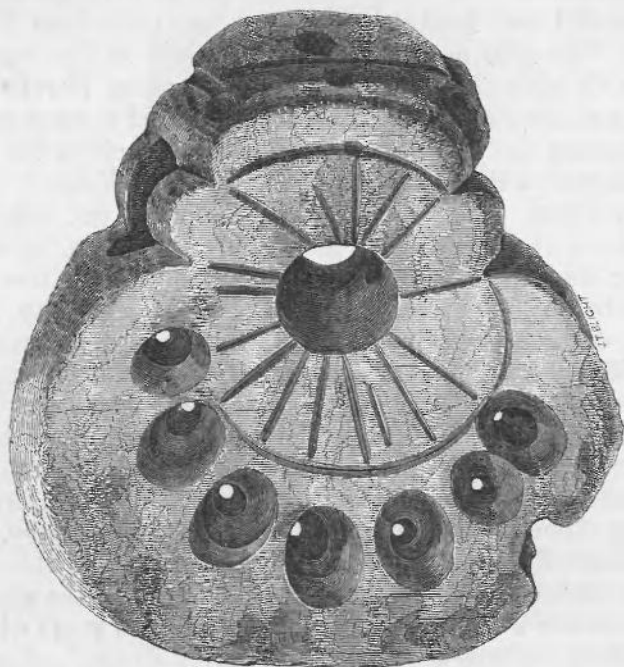
² Archæologia Cambrensis, third series, vol. xiv. p. 446.

³ One of these whorls, diam. about $1\frac{1}{2}$ in., is figured *ibid.*, p. 447. See some

remarks on the whorls so frequently found on sites of early occupation in this Journal, vol. xxiv. p. 249; Archæologia Cambrensis, *ut supra*, p. 413.

appendages as the smaller relics, resembling rudely fashioned beads, might be attached to the lesser perforations.⁴

Our lamented friend, Du Noyer, very shortly before his death suggested that this singular relic might have been a portable sun-dial. In a communication that he addressed to the Cambrian Archæological Association, he states his opinion that its date cannot be later than the twelfth cen-



Ancient relic of stone found in an encampment in Herefordshire. Greatest diameter $3\frac{1}{4}$ inches. In possession of E. Whitecombe, Esq., Cleobury Mortimer.

tury, and that it was intended to denote the seven canonical hours, namely, Matins, 6 A.M. ; Lauds, 8 A.M. ; Nones, 9 A.M. ; Prime, Noon ; Compline, 2 P.M. ; Tierce, 3 P.M. ; and Vespers, 6 P.M. Of the mode of use he gives the following explanation : ⁵—“The gnomon was a short conical piece of wood fitting into the central orifice. Let us suppose the gnomon

⁴ A drawing of a somewhat similar relic, of soft sandstone, has been sent to us by Mrs. Stackhouse Acton, of Acton Scott, Church Stretton. It is a flat pear-shaped object, measuring nearly 3 in. by 2 in., thickness 1 in. ; it has a central

perforation, diameter nearly three quarters of an inch, and five smaller holes around the broader portion of the edge of the stone. There are, however, no radiating lines.

⁵ Archæologia Cambrensis, third series, vol. xv. p. 87.

to be inserted in its proper position ; if the instrument were then allowed to hang from the string passed through the transverse orifice at the narrow end, a short plummet attached to the base of the gnomon would enable the operator to cause the central line of the dial to be vertical, and, therefore, in a position to catch the shadow thrown by the sun at twelve o'clock. If the dial were used horizontally the central line just alluded to would, of course, represent the meridian, in which direction it should be placed to catch the shadow thrown at twelve o'clock ; and then the shorter transverse lines at right angles to it would point due east and west, and mark the hours of 6 A.M. and 6 P.M. Each half of the circle is seen to be divided by radiating lines into four principal spaces ; an intermediate extra scratch on the west side, and a double line on the east at the six o'clock mark, being, I think, of no account in the true subdivision of the dial into eight spaces. That such was the true significance of the lines radiating over the northern half of the dial, or between the meridian line and that striking east and west, is established by the presence of the seven small holes counter sunk and drilled through the stone around the outer periphery of the circle, and directly opposite the termination of each of the radiating lines. I believe that the extra scratches on the southern end of the dial are possibly mere ornamentation, to fill up a vacant and supposed unsightly space, as, with the exception of the prolonged meridian line, they do not radiate from the common centre at the gnomon orifice ; these lines, however, may have a significance the true explanation of which we cannot now arrive at."⁶

It is probable that the reader may feel, as I have done, some hesitation in accepting this ingenious suggestion offered, in default of any probable explanation of the object found in Herefordshire. I must, however, observe, that I am indebted to the Rev. Richard Gordon, of Elsfeld, for accurate drawings of both sides of the relic in question, and that the reverse presents a circle with radiating lines of greater regularity than those traced on the face here figured ; more conformable also to the disposition of hour-lines on the examples to which our attention has been called by Mr. Du Noyer.

ALBERT WAY.

⁶ The letter, from which an extract is here given, was dated from Antrim, 5 Dec., 1868.