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EDITORIAL

Just as the June *Bulletin* was going to press we heard the very sad news of the death of Chris Daniel, eminent diallist, founder member of the BSS, and our very long-term Chairman.

John Davis has, with input from others, written a fulsome obituary which draws our attention to many aspects of Chris's long life.

Again with others, he has written an obituary of another noted early member, Tony Wood, who is especially remembered for reviving the Mass Dial Group.

John Davis has also co-authored the lead article in this issue. This updates us on the known works of Thomas Wright.

With the death of Chris Daniel we lost our President and, for a time, the Society had a Patron (Mark Lennox-Boyd)

and a Vice-President (Fred Sawyer) but no President. The Trustees had the option of appointing Fred Sawyer as President but this word is understood somewhat differently in North America! Accordingly, it was decided to invite Fred to be a second Patron and we are very pleased that he has accepted. The inside back cover reflects the changes.

Another change reflected in the back cover is that Chris Williams has resigned as Secretary and Ben Jones has agreed to be a Nominated Trustee. Ben will stand for election as an Elected Trustee at the AGM at Newbury in September. Further details are given in the Newsletter and in the AGM papers.

This issue contains the fortieth, and last, part of Dennis Cowan's remarkable series on Thomas Ross. The Editorial Team and, no doubt, many other readers will miss these quarterly instalments.

Frank King

THOMAS WRIGHT'S HORIZONTAL DIALS: AN UPDATE

JOHN DAVIS and DARIUS PANAHY

Thomas Wright was one of the most important London mathematical instrument makers in the first half of the 18th century. Details of his horizontal dials and the construction of a large replica were described in a *Bulletin* article in 2004.¹ At that time, nine dials by Wright had been recorded but since then others have been discovered, either in gardens or offered for sale in auctions. One of these was sold by Bonhams² in 2021 and prompted this update: it seems, though, that Wright dials are like London buses as during the research for the article another dial was also offered for sale and further searches uncovered other examples. As a result, the revised listing of Wright dials now shows 27 examples (see Table 1, below and opposite).

The Old Warden Dial – Description

This dial (Fig. 1) was sold by Bonhams in 2021 and probably commissioned by Samuel Ongley for Old Warden Park in Bedfordshire. It is 335mm in diameter and made of copper alloy measuring 5mm thick. The gnomon is in Wright's later style with an elegant curved back edge and it is attached to the dial with two large hand-cut screws from the underside into truncated pyramid side supports as well as being located by two pins into the blade (Fig. 2).

The features of the dial include most of the elements that became standard on Wright's later dials with the exception of the transversals and the 'geographical' rings which would have required a larger diameter. Decorative features, such as the elegant 'bobbins' at the ends of the main



Fig. 1. General view of the Old Warden dial by Thomas Wright.

chapter ring, the details of the compass rose, and the use of running oak-leaf borders between the elements as described in the earlier article are all present.

The Equation of Time ring runs clockwise as on all of Wright's dials despite facing outwards, with the result that

Table 1 (opposite). Listing of known horizontal sundials by Thomas Wright. The list includes dials which have been stolen: not all the dials have been seen by the authors.

* Signature forms:

- A. Made by Tho Wright Instrument Maker to His Royal Highness ye Prince of Wales 1726
- B. Made by Tho Wright / Instrument Maker to his moft / Excellent MAIESTY
- C. Tho Wright Fecit
- D. Made by Tho Wright Instrument Maker to His Majesty GEO IID
- E. Made by T. Wright Instrum^t Maker to His MAIESTY
- F. Made by Tho Wright Instrument Maker [to the] Prince of Wales 1724
- G. Thos Wright Instrument Maker to his Royal Highness
- H. Tho Wright, London
- I. Tho Wright Londini fecit / Sereniss^o, Mag: Britanniae Regi / in Mathematicis instrumentis / Peritissimus Artifex.

† The dial is no longer at the location stated on the Historic England website but remains the property of the Trustees of the Thoresby Settlement and is currently erected outside a private house on the Thoresby Estate.

No	Dial (location)	SRN/ Inventory	Diam (mm)	Gnomon	EoT	Trans- versals	CoA	Geogra- phical	Sign- ature*	Comments
1	Lacock Abbey (NT), Wilts	SRN 0140	451	Triangular	Y	Y		Y	A	Shown in Ref. 1
2	Private collector, Wilts	SRN 1910	453	Curved, pierced	Y	Y	<i>Erminois, a bend azure</i> (not identified)	Y	B	Outward facing numerals
3	Godshill, IoW	SRN 2723	320	Triangular	N	N		N	C	Shown in Ref. 1
4	Private collection	SRN 4249	449	Curved, stepped tail	Y	Y	Rudge family (quartered)	Y	D	[51;10] Shown in Ref. 1
5	Chilham, Kent	SRN 1710	368	Curved	Y	N	Colebrook family (?)	N	D	
6	Manchester area	Private garden	330	Triangular	N	Y		N	A	
7	British Museum	CAI/2461	447	Triangular	Y	Y	Alexander Hulme, 2nd Earl Marchmont	Y	A	Lat 55;43;30, Long 2;25;20 W in time 9m 41s, Elevation of dial above sea level (feet)
8	NMM, Greenwich	AST1149	382	Curved	Y	N	Quartered, Viscount, Cockayne (sinister)	N	D	[51;30 Higton, Ref. 3]
9	Belton House (NT), Lincs	SRN 0619 (stolen)	330	Triangular, with aperture	?					Stolen. Nat Trust item No. 436789
10	Toovey's Auctioneers, 3/12/2010	lot 2602	?	None	Y	N	None	Y	D	
11	Auction 2/3/2011		450	Replaced	Y	N	Dixon of Essex & Durham	N	D	
12	Bellmans auction 15/6/2018	lot 1274	450	Pierced	Y	Y	Earl Cork & Orrery	Y	E	Exhibited at Mathematical Tower, Wrocław University, Poland 2019/21
13	'Old Warden'	lot 179	330	Curved	Y	N	Samuel Ongley	N	E	Bonhams auction 7/7/2021 £3187 inc premium
14	'Wrexham' Private collector	2021-5	328	Triangular	N	N	None	N	F	eBay 1/12/2021 £75. Scroll ends not bobbins
15	Wrangle, Lincs	SRN 7763	216	Curved	N	N	None	N	C	Church dial. Reported by Ian Butson. Epoxy on gnomon Lat 53:06
16	London	SRN 1294	605	A Henry Wynne dial restored by Thomas Wright						
17	Sheepwash area, Devon	SRN 2748	330	Triangular	Y	Y	Bradshaw of Halifax	N		Dated 1754. N53;40 on back. Motto "Qui Vive Content Tient Assez"
18	Foy, Heref & Worcs	SRN 2463	178	Pierced 'S'					C	A different Wright?
19	Bettws Ceddwain, Powys	SRN 3500	225	Curved					H?	52° 35'
20	Chastleton Hse (NT) Oxon	SRN 4116	Stolen							Replacement
21	Auction		301	Curved	N	N	None	N	H	For West Indies. Ref. 25
22	Bonhams auction 10952, 2004	Lot 491	255	Triangular with side braces		N			G	50;40. 1722. Three 'ears' on dialplate
23	Ushaw College, County Durham		460	Curved, stepped tail	Y	Y	Sts Peter & Paul	Y	I	Lisbon College, 38:50
24	Sold by Wiederseim Associates Inc. Phoenixville, US		375	Missing	Y	N	<i>Double-headed eagle, azure, on a bend (unclear). Canton (hand)</i>	N	D	Auction, 15 Feb 2014. Sold \$1000
25	Linton Park, Kent			Missing	Stolen				D	On British Listed Buildings website
26	Thoresby Hall, Notts	Historic England List Number: 1157251							D	Thoresby Estate† On original (?) ashlar baluster pedestal
27	Zuylenburgh Planetarium & Collection		254	Curved	Y?	N	None	N	D	



Fig. 2. The gnomon attachment of the Old Warden dial. Note the alignment pin at the top and the punch marked screw to the right.



Fig. 4. The Ongley coat of arms as interpreted by Wright on the Old Warden dial.



Fig. 3. Close-up of part of the EoT scale on the Old Warden dial, showing the values to 30-s intervals (here numbered in 2-minute steps) for August.

the names of the months run rather awkwardly against the scale direction.³ See Fig. 3. It seems that he was rather stuck in his ways as other makers at this period soon adopted a counterclockwise scale. Although it is divided into intervals of 30 s, the relatively small size of the dial means that the values of the extra seconds at the maxima/minima have not been added so reverse engineering for the data source has not been attempted.

The engraving follows a standard style for his simpler dials with a compass rose in the centre, an Equation of Time ring, an hour ring with fleur-de-lys half hour markers and a minute ring.

The signature on the north side reads:

*Made by T.Wright
Instrum^t maker
To His MAJESTY*

The coat of arms on the south of the dial, engraved to be read from the north (inside), is in quite reasonable condition and the ‘tinctures’ (colours) are shown by the standard ‘*Petra Sancta*’ scheme of shading (Fig. 4). They can be blazoned as *argent, three piles gules, and in base a mount vert; on a canton azure a sun in splendour*. However, in the absence of a motto, arms can usually be traced most

quickly by the crest on top of the shield which, in this case, can be described as a bird of some sort with spread wings. By searching through the illustrations in *Fairbairn’s Crests*,⁴ this was identified as probably belonging to either Baron Ongley or the Henley-Ongley family and is properly blazoned *out of a mount vert, a demi pelican, wings elevated and expanded, holding a fireball in its beak* which could then be matched in Papworth⁵ to the blazon for the shield. In later versions, though, the bird is described as a phoenix. (The missing motto would have been *Mihi cura future*, ‘I am careful for the future’.)

The Old Warden Dial – Provenance and History

Given the likely date of the dial, the coat of arms is probably for Sir Samuel Ongley⁶ (1647–1726), a linen draper originally from Cornhill in the City of London who made a fortune through involvement with the East India Company and the South Sea Company.

In 1698 he purchased Old Warden Park, Bedfordshire from the Earl of Bolingbroke (Fig. 5).⁷ His monument in Old Warden Church shows his coat of arms above him (Fig. 6). He was knighted by Queen Anne in 1712, coinciding with the end of his first term as Deputy Governor of the South Sea Company, when he presumably chose the arms. Unlike many investors, he was financially shrewd enough not to be



Fig. 5. An illustration of the eighteenth-century mansion at Warden Park. It was demolished in 1875. (Courtesy of The Shuttleworth Collection.)



Fig. 6. Sir Samuel Ongley's monument in Old Warden Church and close-up of the coat of arms.

ruined by the collapse of the South Sea Bubble in 1720. On his death in 1726, his estate including Old Warden Park was inherited by his nephew Samuel (1697–1747),⁸ who shall be referred to as Samuel II. Returned as MP for New Shoreham in 1729, in 1734 Samuel II changed seats to Bedford and was MP there until his death in 1747.

In the late 1950s, Sir Samuel's commonplace book was found in a loft and is now held at the Bedford & Luton Archive Service.⁹ He started it on becoming active at Old Warden and in it he notes down all sorts of things including lists of possessions, estate matters and copies of letters, including some written to his nephew Samuel II.

Sir Samuel's commonplace book has a copy of a letter written in 1723 to a friend that mentions "I doubt not but you have seen in the public prints the account of my misfortune of having had half of my house at Warden burnt down, so that I doubt I must be at the trouble and charge of building a New one". There is no further mention of rebuilding, so it is unsure whether these works were carried out by Sir Samuel or after his death by Samuel II.

The dial can be dated after 1727 when Wright changed his signature from referencing the "Prince of Wales" to "His Majesty..." on his accession as George II, so it was finished after the death of Sir Samuel. Samuel II appears to have also kept Sir Samuel's coat of arms as shown under his name in a 1736 map of Bedfordshire shown in Fig. 7. Old Warden Park is located at latitude 52.08° N, closely

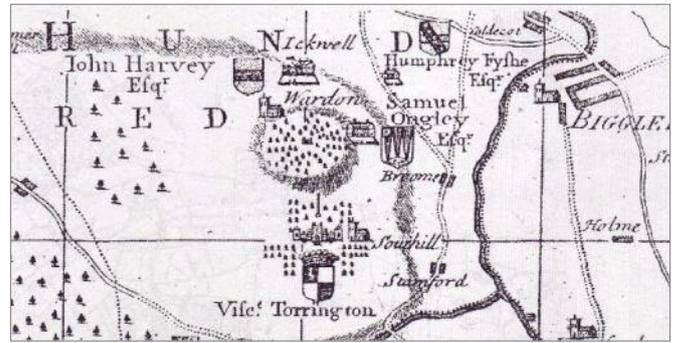


Fig. 7. A map of Bedfordshire from 1736 shows Samuel Ongley (II) using the same coat of arms as on the dial. Reproduced courtesy of Bedfordshire County Archives.

corresponding to the 52.0° N engraved on the dial, so it is probable that Samuel II commissioned the dial on inheriting Old Warden, perhaps as part of renovations to the house.

On Samuel II's death in 1747, Old Warden was inherited by his niece's son Robert Henley who took up the name and became 1st Baron Ongley in 1776. The estate remained in the family until it was sold in 1872 to Joseph Shuttleworth.

No further trace of the dial has been found to date until it surfaced in 2021 in the Bonhams sale of items removed from Moggerhanger Park which lies a few miles north of Old Warden.

Whilst it is not certain where the sundial was located at Old Warden, an engraving of nearby Southill Park (Fig. 8) shows what is probably a sundial on a pedestal on the lawn in front of the house, and the dial could well have also been placed on the lawn at Old Warden.

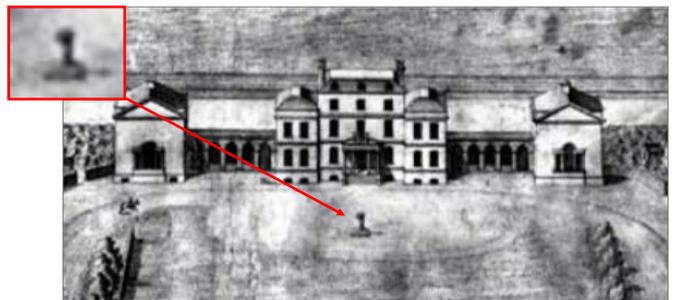


Fig. 8. Engraving of the lawns at Southill with a horizontal dial at the centre. Inset: a magnified view of the dial. Courtesy Bedfordshire County Archives.

Online searches for references to sundials at Old Warden showed a cube dial that was located on a multi-section pillar at the main road entrance to the park (Fig. 9).¹⁰ The column is made up of a series of square blocks, then what looks like an 18th century sundial pedestal, then a cube with two visible gnomons and topped with a globe. Could the pedestal have been reused from the original sundial? The cube sundial was removed in 1948 so further investigation is not possible.¹¹ The likely reuse of a horizontal dial pedestal in a cube dial pillar has also been observed elsewhere.¹²



Fig. 9. The pillar/cube dial at the entrance to the Shuttleworth Estate, now demolished. Note the section just below the cube dial looking like the pedestal of a horizontal dial.

The Wrexham Dial

The dial shown in Fig. 10 was offered for sale by a second-hand shop in Wrexham. The owner explained that it had been brought in by one of the “scrap lads” that he deals with and that they had attempted to discover the maker’s name using a rather crude mechanical removal of the patina in the area to the south of the gnomon: having failed and in keeping with the general poor condition, the dial was sold for a low sum. However, the shape of the gnomon was instantly recognisable as being due to Thomas Wright or, just possibly, John Rowley.¹³ On closer inspection after purchase, the inscription could (just) be read as

*Made by Tho. Wright
Appointed Instrument Maker [to?]
[the?] Prince of Wales 1724.*

This date is relatively early in Wright’s career and before the Prince of Wales became George II in 1727. The dial is 328 mm (a nominal 13”) in diameter and is clearly at the budget end of Wright’s range as it has no EoT scale or coat of arms and the chapter ring ends were simple scrolls rather than Wright’s characteristic ‘bobbins’. On the back of the dial, there is number “52.40” (Fig. 11) which is obviously the design latitude and as Wrexham is 53.04° N the dial was probably made for a location nearby, possibly in the Leicester area. The back also has some trial engraving in the form of a capital W and part of a cartouche.

The most interesting feature of this dial is the rather uncharacteristic gnomon fixing (Fig. 12). It has two close-fitting tenons (as was standard on most small 17th century dials) which finish flush with the back of the dial plate. The end of each tenon has been drilled and tapped for a small, hand-cut cheesehead screw which is fitted with an oversized, roughly circular, washer. In addition to this, two much larger screws (one with a punch mark to match with the appropriate hole) are inserted into holes in the side supports of the gnomon. This ‘belt-and-braces’ scheme is certainly secure but it would have been a lot of work so it is

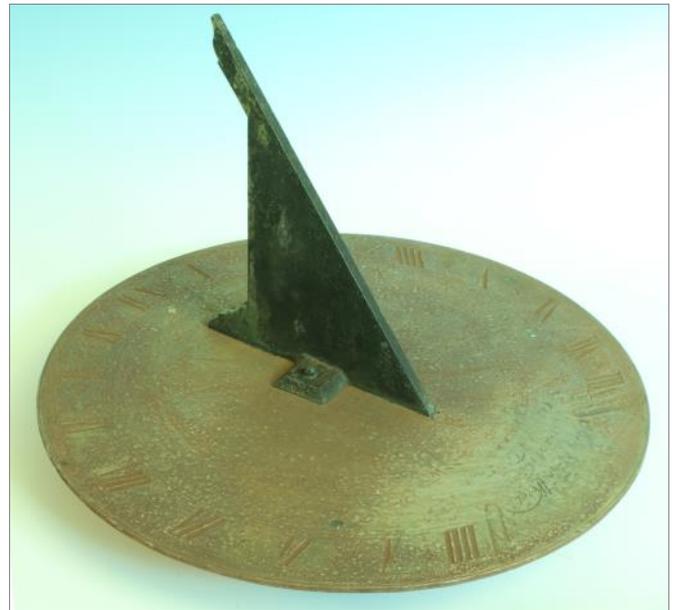


Fig. 10. General view of the Wrexham dial.



Fig. 11. The engraved latitude on the back of the ‘Wrexham’ dial. Note that the patina has been stripped giving a coppery surface.



Fig. 12. The gnomon profile of the ‘Wrexham’ dial with its fixings in position.

unsurprising that Wright’s later dials adopted simpler methods.

The dial came complete with three original pedestal fixings still attached. This raised some suspicion that the dial might have been removed illegally but no stolen dial with this description is recorded. The fixings are formed from trapezoid bases and a threaded stem which is virtually invisible on the face of the dial.

Area	Cu	Zn	Sn	Pb	Ag	Ni	Fe	As	Sb	Bi	Comments/ Others
Front (S)	73.8	21.8	0.42	2.80	0.12	0.055	0.39	0.57	0.05	nd	Semi-cleaned
Front (E)	81.5	8.23	0.71	7.49	0.20	0.66	0.91	0.80	0.08	0.02	Uncleaned
Back (S)	74.8	20.5	0.43	3.05	0.12	0.048	0.42	0.63	0.05	nd	Cleaned
Gnomon base	74.6	20.3	0.51	2.65	0.30	0.073	0.71	0.72	0.08	nd	Cleaned
Large screw (head)	73.0	23.6	0.54	2.24	0.08	0.066	0.40	nd	0.04	nd	Cleaned
Washer	74.7	22.0	0.65	1.60	0.08	0.074	0.33	0.58	0.03	nd	Cleaned
Pedestal mounting	74.5	17.7	0.64	5.00	0.13	0.061	0.90	0.77	0.10	0.017	Cleaned

Table 2. Metallurgy of the components of the 'Wrexham' Wright dial as measured by X-ray fluorescence (XRF). All values in wt.%; nd = not detected.

The metallurgy of this dial was investigated by X-ray fluorescence (XRF) using the methods described previously¹⁴ and the results are summarised in Table 2. Ignoring the result from an uncleaned area on the front of the dial where the heavy encrustation indicates a very high level of dezincification, all the components of the dial show a very similar cementation brass quite typical for the era.¹⁵ The dial has subsequently been cleaned slightly more thoroughly and the chemistry of the patination (removed as a fine powder) explored: this will be reported separately. The gnomon and the dial plate appear to be castings of the same material with a medium-to-high lead (Pb) concentration. The large screw seems to have been worked from a very similar alloy whilst the washer, which is quite thin and probably cut from hammered plate, has a lower lead concentration as might be expected. In all these cases, the levels of the minor components, which are mainly a function of the original source of the copper ore, are basically the same. The trapezoid block which anchors the dial into the pedestal is significantly different, being of a slightly lower zinc (Zn) concentration with quite a high lead component. Associated with this is a relatively high antimony (Sb) content with a measurable amount of bismuth (Bi) associated with it.¹⁶ This rather unimportant and unseen accessory might have been bought-in in bulk or cast from scrap brass lying around with added lead for economy and good flow qualities when casting.

The Lisbon College Dial

Ushaw College, near Durham, was founded in 1808 by scholars from the Catholic English College at Douai who had fled France after the French Revolution. It currently operates as a visitor attraction and in the Library and Exhibition Hall there is an excellent and previously unrecorded dial by Wright (no. 23 in Table 1; Fig. 13 and front cover).¹⁷ Ushaw College traces its origins to Cardinal Allen's Douai Seminary founded in the Spanish Netherlands in 1568 to harbour young dissidents of the Anglican religion who wished to receive a Catholic education outside England. The success of Douai caused it to become the 'Mother House' of other similar institutions in Rome, Valladolid, Seville and subsequently Lisbon.¹⁸



Fig. 13. General view of the Lisbon College dial, now at Ushaw College near Durham. Note the low gnomon angle. Reproduced with kind permission of the Trustees of Ushaw Historic House Chapels & Gardens.

Apparently, the sundial was commissioned by John Manley, the President of the Pontifical English College of Sts Peter and Paul – Lisbon (Lisbon College), who asked their agent or 'London procurator' John Shepperd (or Shepherd) to acquire it.¹⁹ Shepperd was based in Hammersmith and responsible for procuring all sorts of materials for three successive Presidents of the College, his *alma mater*.²⁰ The dial was later transferred to Ushaw when Lisbon College closed in 1973, presumably because of the historical links between them. The dial is a large one (460 mm) with all the 'bells-and-whistles' that are associated with the largest Wright dials. It can best be compared with the Lacock Abbey dial (no. 1 in Table 1) but is in excellent condition, almost pristine.

As an aside, a slightly later President, the Anglo-Portuguese Jerome Allen (1730–1815; a client of the Marquis of Pombal) attempted to build an observatory on the college's third floor: this 'observatory' was built in the 1790s and reflected a healthy interest in scientific learning that flourished in the college at the time. Correspondence from Allen to Nicholas Williams of London (20 November 1792) details his request for a sundial for the Bishop of Porto as a gift from the college.²¹ It is unclear if this dial was actually delivered and, if so, where it is now.

The signature on the north side of the Ushaw dial is in Latin instead of the usual English and reads:

*Tho Wright Londini Fecit
Sereniss^o. Mag: Britanniae Regi
in Mathematicus instrumentis
Peritissimus Artifex*

On the south side is engraved cross keys and sword, the keys representing the keys of the office of St Peter and the sword is the symbol of St Paul and the engraving thus matches the full name of the Lisbon College. There is also an inscription:

*Ex Dono
Ioannis Shepherd
– 1732 –*

The latitude of $38^{\text{D}} 50^{\text{M}}$ is engraved on the south side: this value is very close to the true latitude of Lisbon ($38^{\circ} 43'$). The Equation of Time ring is also inscribed in Latin (*Horol: Sole tardius/celerius.*) whereas the place names in the ‘Geographical’ ring and months are in English as are the abbreviated compass directions. The EoT ring is in Wright’s standard clockwise form with 30 s intervals but it does give the exact values at the maxima and minima. The values indicate that Wright was still using the data from John Flamsteed published by John Smart in 1710: this dataset can also be found on dials by Wright’s master, John Rowley.²² Note that the scale is for the old Julian calendar. Although England did not adopt the Gregorian calendar until 1752 (after the dial was made), most Catholic countries had accepted the change much earlier with Portugal being amongst the first group on 4 October 1582.²³ Perhaps Wright (or John Shepherd) did not realise this.

Other Dials

Table 1 now shows the 27 Thomas Wright dials that have been reported. Not all of these have been viewed by the authors and sometimes the photographs available, combined with obscuring patination, have made the details difficult to discern. The latest version of Jill Wilson’s *Biographical Index*²⁴ has entries for both of the dial-making Thomas Wrights with most of the dials from Table 1 but also, unfortunately, some by Thomas Heath in error. It also has an entry for a dial which is signed “Gregory and Wright” but this is almost certain to be by Gabriel Wright working with Henry Gregory. There was another ‘Thomas Wright’ (see below) who is said to have made dials at the same time and who is generally known as Thomas Wright of Durham: he was principally an astronomer. It can sometimes be difficult to decide which Thomas Wright made a dial especially if it does not have all the characteristic features of the dials listed in Table 1 and this is often the case for at least two dials made for the West Indies (e.g. no. 21 in Table 1).²⁵

Another unusual example is a dial design which is signed “Thomas*W: Fecit, lat 53:15’” and was attributed to

Wright the Mathematical Instrument Maker by the Smithsonian Institution:²⁶ it is engraved on the back of the rete of a medieval ‘Chaucerian’ astrolabe²⁷ but the attribution is likely to be wrong. The astrolabe, which was almost certainly made in England and was once owned by Derek de Solla Price, is now in Washington: it has a single stereographic projection for 52° , rather different to the sundial design latitude. A likely scenario is that the astrolabe belonged as a ‘curiosity’ to one of Thomas Wright of Durham’s wealthy patrons with a country seat in the Sheffield area which served as one of several extended stops on his long journeys to London and back.²⁸ The maker was clearly practising on a ‘spare’ piece of brass as there is no gnomon although there are two possible fixing holes for one.

Thomas Wright Dials and Biography

In the previous article,²⁹ the problem of identifying the correct Thos Wright for making sundials was covered but the confusion still continues and Thomas Wright of Durham (1711–86; usually described as an astronomer) is frequently and erroneously attributed to many dials including the one described above. This is possibly because he left an unhappy clockmaker’s apprenticeship in Durham, arriving in London in the summer of 1730 where he worked for the instrument makers Thomas Heath and then John Sisson who happened to be near neighbours of ‘our’ Wright. The restless Wright of Durham left London and

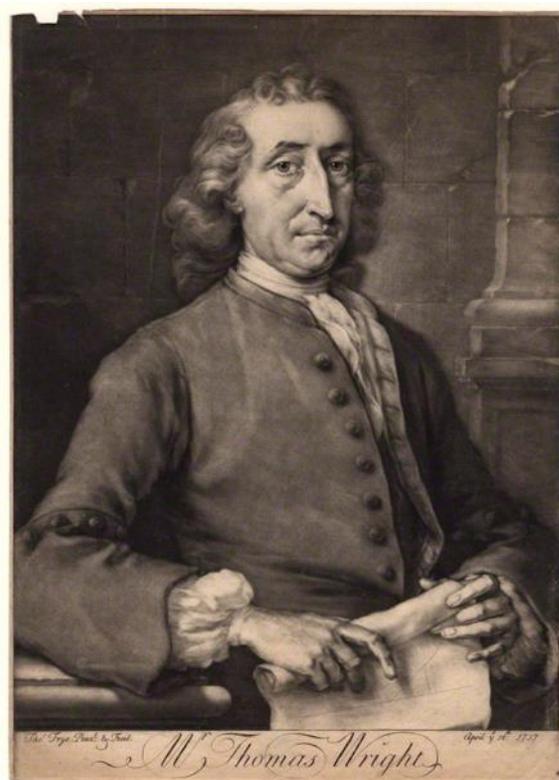


Fig. 14. Mezzotint of “Mr. Thomas Wright” signed “Tho: Frye Pinx^t: & Fecit” and dated “April y^e 18th: 1737”. Courtesy of the British Museum, 1902.1011 (Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0).)

returned to the North in the winter of 1730 so he would not have been able to make many dials and anyway, as a journeyman, he would not have been allowed to sign them.³⁰

One of the dials which has been wrongly attributed is the Ushaw College instrument made for Lisbon, where the College museum display run by Durham University and its associated website³¹ confidently attribute the dial to Wright of Durham (perhaps because he was local and more famous) and even the august British Museum³² conflates the two men by giving Thomas Wright the Mathematical Instrument Maker to the King ('our man') a birthplace of Durham. There are a number of portraits of 'Thos Wright' in existence and it is clear that there is more than one man: the differences were accurately described by Eileen Harris in 2011.³³ One portrait that is quite often wrongly described as being of Thomas Wright of Durham is shown in Fig. 14.³⁴ It is dated 1737 when Wright of Durham would have been 26 years old but it is clearly of a much older man and does not look remotely like the man in other images shown by Harris. Although it cannot be certain that it is 'our man', the drawing which he is holding shows a mathematical or engineering drawing which makes it quite likely.

The Thomas Wright who was mathematical instrument maker to royalty was born c.1693 as the son of a Southwark clockmaker.³⁵ He started his apprenticeship with the great John Rowley in 1707 as one of a small group of apprentices which included William Deane, John Coggs and Benjamin Scott.³⁶ After becoming free in the Broderers' Company in 1715 he took over Rowley's premises and, as Rowley was 'promoted' to be 'Master of Mechanicks to George I', he seems to have taken over his role as the premier mathematical instrument maker in the country. The dials of all Rowley's apprentices have a similar style which includes features such as the 'truncated pyramid' side

support to the gnomons. Rowley and Benjamin Scott both have double horizontal dials of great quality but at the moment none is known by Wright.

The British Museum biography for Wright (correctly) gives his address as "at the Orrery and Globe near Salisbury Court, Fleet Street, London", the same address as his Master, John Rowley, who had made a very early orrery to the design of the clockmaker George Graham who lived above the shop. This address appears on a tradecard for "Thomas Wright" which prominently features an orrery and is dated 1718, when Wright of Durham would have been seven years old! (See Fig. 15(a).) On another tradecard, for Richard Cushee with Thomas Wright (Fig. 15 (b)) the same address is given for Wright the MIM: Wright of Durham never worked with Cushee.

Wright was certainly still working in 1743 as he appeared as a witness at the Old Bailey trial of someone who had offered a stolen dial for sale which Wright recognised as his work.³⁷ He also restored a dial in the Inner Temple which had originally been made by Henry Wynne in 1707: it is still on public view today.

Wright died in 1767. His will³⁸ describes him as "Citizen and Embroiderer of London, and by trade a Mathematical Instrument Maker" and was written on 14 May 1763 and proved on 19 June 1767. It mentions his wife Susanna but no children. Since he is said to have retired in 1747/8,³⁹ this would indicate a 20-year period of retirement which would be most unusual in the 18th century. There is a dial in Devon (Table 1, no. 17) which seems to be dated 1747 but which has an EoT ring in the Gregorian calendar which casts some doubt on this.

ACKNOWLEDGEMENTS

We would like to thank: Simon (The Secondhand Shed, Wrexham); Maciek Lose (Wroclaw, Poland); John Foad (BSS Registrar); The Shuttleworth Collection for



Fig. 15. Tradecards for (a, left) Thomas Wright dated 1718 and (b, above) Richard Cushee and Thomas Wright. Both give the "Orrery and Globe" address but Wright of Durham was never associated with Cushee. Courtesy of the British Museum, 1902.32 (Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0).)

permission to reproduce Fig. 5; Bedfordshire Archives for permission to reproduce Figs 7 and 8; The Shuttleworth Collection for permission to reproduce Fig. 9; Caroline Stanford of the Landmark Trust for help with details from the Queen Anne's Summerhouse History Book; Ian Stubbs (contacts at Ushaw College); Claire Marsland (curator, Ushaw College); Irene Brightmer; Martin Jenkins.

REFERENCES and NOTES

- J. Davis: 'Thomas Wright's horizontal sundials', *BSS Bull.*, **16**(iv), 135-143 (Dec. 2004).
- Bonhams, London, 7 July 2021, lot 179. (£3187 inc. premium).
- The Wright dial in the National Maritime Museum (no. 8 in Table 1) is described in Hester Higton, *Sundials at Greenwich. A catalogue of sundials, horary quadrants and nocturnals in the National Maritime Museum, Greenwich* (Oxford, OUP; 2002), pp. 59-60 as having half the EoT scale running CW but the other half CCW but this is an error as can be seen in the online image at <https://www.rmg.co.uk/collections/objects/rmgc-object-201041>
- James Fairbairn: *Fairbairn's Crests of the Families of Great Britain & Ireland*, New York, Bonanza Books. Revised by Laurence Butter, Seal Engraver in Ordinary to the Queen for Scotland (1986).
- Papworth: *Papworth's Ordinary of British Armorial, reproduced from the original edition of 1874*, Tabard Publications (1961).
- <http://www.historyofparliamentonline.org/volume/1690-1715/member/ongley-sir-samuel-1647-1726>
- <https://bedsarchives.bedford.gov.uk/CommunityHistories/OldWarden/TheOngleyFamily.aspx>
- <http://www.historyofparliamentonline.org/volume/1715-1754/member/ongley-samuel-1697-1747>
- Further information on the history of Old Warden, the Ongleys and the commonplace book can be found in the history album. <https://www.landmarktrust.org.uk/search-and-book/properties/queen-annes-summerhouse-13986/#History>
- <http://www.amphillimages.com/Media/OldWarden-Gall/pages/1939%20Scenic%20View%2005.html>
- <http://www.amphillimages.com/Media/OldWarden-Gall/pages/1948%20Sundial%2005.html>
- Dennis Cowan: 'In the Footsteps of Thomas Ross. Part 38: The West Coast Obelisks', *BSS Bull.*, **34**(i), 14-19. (Mar. 2022). See Fig. 20, the Ardgowan pillar. Dennis Cowan (personal communication) confirms that the reuse is likely.
- For a Rowley dial with this shape of gnomon, see the dial at Hampton Court Palace (actually originally signed by Thomas Tompion although the dial currently on display outdoors is a modern hand-engraved replica) where the vertical edge serves to cast a shadow on an azimuth scale.
- J. Davis: 'A Quality Dial by Joshua Springer', *BSS Bull.*, **29**(iv), 2-5 (Dec. 2017).
- Compare, for example, with the results of the John Sill dial from Cumbria, *ibid.*
- The correlation of bismuth and antimony of copper alloys and their use in tracing sources of copper ore in the medieval period is discussed in J. Davis: 'Small Details Matter. The search for medieval astrolabe workshops', *Bulletin of the Scientific Instrument Society*, **153**, 7-14. (June 2022).
- <https://religioncollections.wordpress.com/2021/02/20/ushaw-historic-house-chapels-and-gardens/>
- For the later history of the college, see Simon Johnson: *The English College at Lisbon from 1622 to 1761: A missionary college from the Reformation to the Age of Enlightenment*, Ph.D. thesis, Durham University (2006). Online at <https://theses.whiterose.ac.uk/11004/>. John Shepperd features heavily but there is no mention of a sundial.
- John Shepperd (1678-1761) was a Lancastrian who attended Lisbon College from 1694 until 1706, when he sailed back to England as a missionary. See Michael Sharratt (ed.) *Lisbon College Register 1628-1813* (Catholic Record Society: 1991), p. 178.
- Personal correspondence from Claire Marsland, quoting Simon Johnson (now Head of Heritage at Downside Abbey), March 2022.
- ibid.*
- J. Davis: 'The Equation of Time as Represented on Sundials', *BSS Bull.*, **15**(iv), 135-144 (Dec. 2003).
- J. Davis (ed.): *BSS Sundial Glossary and Sourcebook of Dialling Data*, 3rd edition, BSS Monograph No. 13 (2020), Appendix xxiv, p.81.
- Jill Wilson: *Biographical Index of British Sundial Makers from the 7th century to 1920*, BSS Monograph no. 12 (2019), pp. 134-36.
- Maciej Lose: 'A West Indies Dial by Thomas Wright', *BSS Bull.*, **25**(i), 8-14 (Mar. 2013).
- Probably by Sharon Gibbs.
- The astrolabe is IIL (International Instrument List) #2006 and is described in Sharon Gibbs and George Saliba: *Planispheric Astrolabes From The National Museum of American History* (Washington, Smithsonian Institution Press; 1984), p.153 and Figs 16, 20 & 28. It can be seen online at https://collections.si.edu/search/detail/edanmdm:nmah_997134
- Thomas Wright of Durham's early diary, originally written in the first person, is now British Library Add. MSS 15627. A precis is in Hughes, n. 30.
- Davis, n. 1.
- E. Hughes: 'The Early Journal of Thomas Wright of Durham', *Annals of Science*, **7**(1), 1-24 (1951).
- <https://religioncollections.wordpress.com/2021/02/20/ushaw-historic-house-chapels-and-gardens/>
- <https://www.britishmuseum.org/collection/term/BIOG168949>
- Eileen Harris: 'The Right Wright vs the Wrong Wrights', *The Georgian Group Journal*, **XIX** (2011), 186-89. We are grateful to Irene Brightmer for bringing this to our attention.
- The picture is a mezzotint by the Anglo-Irish artist and engraver Thomas Frye (1710-62). Frye was born in Dublin but came to England at an early age. A copy of his portrait of Thos Wright was sold by Campbell Fine Art (<https://www.campbell-fine-art.com/items.php?id=392&m=#view>) and their description of it inevitably describes it as being of 'our man', the MIM! The image has previously appeared in the *Bulletin* article by Lose (n.25).
- Gloria Clifton: *Directory of British Scientific Instrument Makers 1550-1851* (London, Zwemmer; 1995), p.306.
- For a detailed description of a Ben. Scott dial, see J. Davis: 'A Benjamin Scott Horizontal Dial', *BSS Bull.*, **22**(iii), 18-22 (Sept. 2010). He also made at least two double horizontal dials, see J. Davis & M. Lowne: *The Double Horizontal Dial - and associated instruments*, BSS Monograph No. 5. BSS, London (2009).
- J. Davis: 'A Just Punishment?', *BSS Bull.*, **17**(ii), 65 (June 2005).
- PRO Prob/11/950, image 476.
- Gloria Clifton: *Directory*, n.35.

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CHRISTOPHER ST JOHN HUME DANIEL MBE

13 November 1933 – 17 May 2022

With the very sad death of Christopher Daniel in the early hours of 17 May, the BSS lost the last of its four founder members and it thus brings the first era of the Society to an end.

Chris was born in November 1933 in his maternal grandfather's house, in Sydenham, Kent, 'over the tunnel' of the Southern Railways electric line. This was part of the electrified system for which his grandfather, a civil engineer, had been responsible some years earlier. Indeed, it was understood that his grandmother had 'driven' the first electric train for a few yards out of Lewisham station! Before the Second World War, the family had bought a house in Esher, where Christopher and his elder brother Timothy went to 'kindergarten', but in 1939 and with the early demise of their mother, the brothers experienced a difficult period when they were obliged to stay with different aunts and uncles scattered around the country. However, their father remarried and rented a property in Sussex which became their home for most of the war.

At the age of seven, Chris joined his brother at Tre Arddur House, a preparatory school on the rocky coast of Holy Island in Anglesey, North Wales, run by his stepmother's brother-in-law, who was the headmaster. Here he had seven happy years of school life by the sea, and with the excitement of the eight-hour steam train journey for the holidays in Sussex.

In 1947, Chris went to public school at Pangbourne Nautical College, near Reading in Berkshire, where he enjoyed the naval discipline, acquired an interest in submarines, particularly German U-boats, and reluctantly learned the rudiments of navigation – a subject which, just a few years later, was to become close to his heart. However, at the time he preferred the study of the humanities, contributing 'poems' to the college magazine. He went to sea at age eighteen as a cadet for the Clan Line at a salary of £7-10s-0d (£7.50) per month or £90 gross a year!

In 1955, after taking his initial professional examinations, Chris joined the great passenger line the P & O Steam Navigation Company with the rank of 4th Officer, and at about the same time he joined the Royal Naval Reserve, with the rank of 'Probationary Acting' Sub-Lieutenant. In these capacities he sailed the world in various cargo and passenger ships – mainly on the Australian run, but also to the Far East – and in warships, including coastal minesweepers and frigates. During this time, his home was



Chris and Doreen presented with tokens of thanks for long service on the occasion of his official retirement as BSS Chairman.

at Brenchley in Kent but he enjoyed his life at sea and developed his interest in navigation, even 'inventing' a tropical revolving storm protractor for plotting the estimated courses of these dangerous meteorological phenomena. In 1959 he was married to Jennifer, a medical doctor by profession, settling in Trinity Church Square in London, and in due course they had two daughters, Shirena born in 1963 and Andrea born in 1965. In 1962 he had taken his final professional examinations and qualified as a Master Mariner.

After his thirteen year career at sea, in 1964 Chris joined the staff of the National Maritime Museum at Greenwich, in the Department of Navigation & Astronomy. From 1967 besides being in charge of the Museum planetarium, he was encouraged by D.W. Waters to make a particular study of sundials and dialling literature. Being in London at that time, before the invention of Internet bookshops for historical texts, he was able to build a library of useful sundial texts. In 1972 he undertook his first 'sundial' design – the armillary symbol of the newly established Nautical Institute – which was to set him on course for a later third career in sundial design. Also, in this same year, he published his first small contribution to dialling

literature: *Sundials – The Common Vertical* in *N.W. Kent* (1972).

Granted sabbatical leave by the Museum, he returned again to the sea briefly (1973–75), joining the reconstruction of Francis Drake’s famous ship, the *Golden Hinde*, as second-in-command. During the course of the voyage from Plymouth to San Francisco, he used copies of period Tudor navigation instruments, carrying out a programme of observations in the Atlantic and on passage up the Pacific seaboard to San Francisco. The journey later proved the source of many after-dinner stories and also gave rise to a valuable publication (with colleague Alan Stimson) on *The Cross staff: historical development and modern use*.

In 1976, following his return to the National Maritime Museum, he was given responsibility for Education Services and in 1979 he became Head of the Department of Museum Services. In 1977, Chris designed the now well known ‘Dolphin’ equinoctial mean-time sundial at Greenwich, celebrating the Queen’s Silver Jubilee, and, in 1979, this was followed by a sculptured vertical sundial for the new premises of the Marine Society and the Nautical Institute at Lambeth. In 1980, he delineated the horizontal sundial which was presented by the VC & GC Association to HM The Queen Mother to celebrate her 80th birthday, and which was set up in the Doll’s House garden of the Royal Lodge at Windsor.

In 1986, after twenty-two years, he took early retirement from the Museum, pursuing his third career as a sundial designer, author and lecturer. That same year his most lasting and evidently popular contribution to dialling literature was published, which was his Shire album *Sundials*. In 2004, this little album was upgraded to a more substantial book in full colour and ten years ago had sold some 26,500 copies and is still selling. Then in 1988, on the death of Noel Ta’Bois, he took over as the regular author of ‘The Sundial Page’ in *Clocks Magazine*, producing monthly articles (since reprinted as a compendium of some 240 articles) on many aspects of dialling. Early topics which he particularly enjoyed and promoted were stained glass dials and noon marks and analemmas.

The story of how, in 1988/9, he joined with Andrew Somerville, David Young and Charles Aked to form the British Sundial Society has been told before (see *BSS Bulletins* 13(ii), 14(i) and 15(i)). Just as the Society was beginning to get going, the founder Chairman, Andrew, tragically died and it was Chris who stepped in and then skilfully guided the Society through its formative and expansion phases until he finally handed over to Frank King in 2011. He didn’t abandon the Society, though, as it retains the logo he designed and of course he was promoted



The Faversham Times announces the award of an MBE to Chris: he was presented with it at Buckingham Palace by HRH Prince Charles, with Chris in a full naval stance.

to the position of President which he retained until his death.

In the Queen’s Birthday Honours of 2013, Chris was awarded an MBE “For services to the history of marine navigation, timekeeping and sundials”. His local newspaper, the *Faversham Times*, knew a good headline and proclaimed “Sundial designer scoops MBE”.

My personal contact with Chris began in the early 1990s when I joined the BSS. From a distance, his nautical background and manner could look a little intimidating but as I got to know him I found him friendly and very



Chris and Tony Wood at the 2012 BSS Conference.



With Marj Folkard of Sundials Australia at the 2010 BSS Conference.



Chris took the role of auctioneer at several Conferences – this example is from 2012 – selling items of ‘invaluable’ dialling trivia.

encouraging, being keen to get as many people as possible involved in all aspects of the Society. He wanted to promote research into all types of dialling and was generous with material such as boxes of professionally-taken dial photographs and unpublished typescripts which would be helpful. Watching him chair Council meetings was an education – everyone got a chance to speak but the business got done in good time and decisions got made. In theory, we were competitors in offering our services as dial designers but he was always helpful in passing work my way. When the nomination for his MBE was being (secretly) arranged, I found letters of support from diallists around the world easy to solicit and it was clear that he had been able to build links with people of many different backgrounds.

Other BSS members happily remember Chris (and Doreen) as congenial hosts and guides to the dials around Faversham and for organising a memorable lunch on board HQS *Wellington*, moored at Temple Stairs on the Embankment.

Other than the sundial designs already mentioned, Chris’s most notable works include the four sundials on St Margaret’s, Westminster (only three now visible!); the reconstructed ‘17th century’ vertical sundial at HM Tower of London; the vertical declining mean-time noon-mark sundial at Green College, Oxford, celebrating the bicentenary of the Radcliffe Observatory; the ‘Nelson’ vertical declining sundial at Chatham, which ‘tracks’ the Battle of Trafalgar on 21st October, indicating the time of Nelson’s death; the Sir Francis Drake commemorative stained-glass sundial in Buckland Abbey, in Devon; the 17th century-style stained-glass sundial in the Merchant Adventurers’ Hall in York; the equinoctial stainless steel armillary sundial, marking the centenary of the Savoy; and many others: one of his final designs was fittingly a noon mark for the town hall in Faversham. He served as Deputy Master of the Honourable Company of Master Mariners for the year 1989/90, during the period when HRH the Prince

of Wales was titular Master, and he designed the Company’s commemorative ‘human’ analemmatic sundial for the National Memorial Arboretum at Alrewas, in Staffordshire.

The BSS owes a great deal to Chris and he will be sadly missed by us, his daughters Shirena and Andrea and of course by Doreen, his partner for over 41 years.

John Davis with input from Doreen Bowyer, Anthony Turner and John Foad

Summer Solstice in Fleet Street



Piers Nicholson took this colourful photograph of the sundial in Fleet Street on the day of the summer solstice, 2022. It is good to see the dial in full sun.

ANTHONY OLDFIELD WOOD November 1935 – April 2022

I was sad to hear of the death of Tony Wood at a home in Kent on 20 April. I knew that he had been unwell for the past few years and was no longer able to contribute to the *Bulletin* but his loss marks the demise of another member from one of the notable line-ups of BSS officials during the Society's expansion phase.

Tony was born in Morley, Yorkshire. He grew up in Gildersome where his father was the headmaster of the local primary school and his mother taught at the same school. He was an only child but undertook the normal schoolboy activities of cricket, plane-spotting and listening to Dick Barton – Special Agent. At school he excelled at mathematics and Latin (useful later for sundial mottoes!). He studied engineering at Imperial College, London, where he met his wife-to-be, Angela Davison. They married in 1958 and, as his parents had both died a few years previously, they were able to set up home in Harpenden close to Tony's work at Hawker Siddeley where he was an aeronautical engineer. His three children, Julia (1960), Susanna (1964) and then John (1967) were born in their first house. In between domestic DIY, Tony liked to go gliding, make model aeroplanes and to play mah-jong, as well as tennis and later table tennis which continued into his 60s.

When Hawker Siddeley asked him to design missiles, Tony stood by his pacifist principles and left, taking up a post in Canterbury teaching mathematics at the independent St Edmund's School. He continued to teach maths at various schools around Kent (including at a convent in my hometown of Broadstairs, though our paths did not cross at that stage). Eventually, he took another job in engineering, moving to Churchdown in Gloucestershire, which is where he lived through his active sundialling period. He had other consuming interests too, particularly with steam trains: he had shares in a steam engine that was being renovated at



John Davis

the Gloucestershire and Warwickshire Steam Railway and his children took him for a ride on a steam train for his 80th birthday. He also had some exotic cars at various times, including at one stage a dark green Bristol 405 with orange seats and later a rather more comfortable Mercedes. In the early days of the Internet, he risked using eBay to buy a Mazda MX5 which was rather sporty for a pensioner!

It is unclear how Tony first became interested in sundials but he joined the BSS in 1996 as member no. 820 and quickly made a mark and energised the moribund Mass Dial Group, making it a much more important part of the Society's activities. He arranged mass dial safaris and encouraged members to record details of mass dials as well as ordinary sundials. His enthusiasm was infectious and even those who struggled to see the merit in scratched dials took an interest, to the extent of articles on them appearing in the *Bulletin*. He became a Trustee, with a special responsibility for mass dials but also an avid recorder of all types of dials – he kept successive Registrars busy with his reports which at the last count ran to 1,609. Many of the dials reported were found when visiting private gardens open under the Yellow Book scheme, often in the company of the late Jill Wilson. An afternoon wasn't complete without a slice of cake and at least one dial to record, even if it was of indifferent quality although many were of significant importance. He contributed some 76 articles and letters to the *Bulletin*, sometimes short – he could be relied upon for a filler piece – but some longer ones were the sound basis for further research by colleagues. He also wrote another nine articles with a variety of co-authors –



John Davis

Tony and John Foad at Newbury in 2005.

always a sign of someone thoroughly integrated in the dialling community.

Tony would sometimes meet up with other BSS members for local sundial hunts and it was then that his energetic and thorough approach was apparent, together with his ability to reach out to the public and inform or advise them of local dials. Together with Jill Wilson and Ian Butson, he undertook a major survey of all the smaller museums in the country which had one or more sundials in their collections and the resulting monograph has proved of significant value for other researchers.

Tony referred to his home as his “one-bedroom rabbit hutch” with all the rooms stacked from floor to ceiling with shelves overflowing with books, magazines and mass dial reports, often together with a rescued cat. Later, with much effort and the help of others, the mass dial records were transferred to computer but, in a great success for the continuation of the project, he arranged that all the base

data would be stored at the York Centre for Medieval Studies after he had convinced the curators of their academic utility. The many large ring-binders of information absolutely filled Irene Brightmer’s car when they drove them to York for storage at the impressive library and archive facility.

In his later years, Tony was an enthusiastic steward at the Nature In Art gallery for works by wildlife artists in nearby Twigworth and he funded a monumental sundial by Ben Jones for its garden which has appeared in the *Bulletin* (27(iii), 30-33) and of which he was justly proud.

Tony was a well-liked character who was knowledgeable, friendly, always cheerful and very approachable. He will be missed by many in the Society as well as his relatives.

John Davis with major input from Julia Alabaster and help from John Foad, Ian Butson, Irene Brightmer and Jackie Jones

Postcard Potpourri 60 – St Helier

Peter Ransom

It is always good to have a real photograph postcard, because a high-resolution scan then allows some detail to be seen without the need of a magnifying glass. This postcard of the Royal Square at St Helier, Jersey, features the dial on The Picket House, which is SRN 4509 in the Fixed Dial Register. The shadow of the gnomon in the detail of the dial shows the picture was taken at 2:30 pm solar time. The dial has both Arabic and Roman numerals, with an unusual O where XII would normally reside. The dial declines to the west.



According to the Jersey Walk website (<https://www.walkingbritain.co.uk/walk-5006-description>) the picket house was a military guardhouse, formerly the meat market. The sundial is by Elias Le Gros, local mapmaker, mathematician and teacher, from the time of George III.

The postcard is postally unused, produced by J. Salmon, Sevenoaks and numbered 7433. J Salmon Ltd, founded in 1880, was a UK-based printing and publishing firm, and is recognised as the oldest established postcard and calendar publisher in Britain. It withdrew from publishing in 2018. A history of this well-known postcard firm can be found at <http://www.jsalmon.com/aboutus.htm>.

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IN THE FOOTSTEPS OF THOMAS ROSS

Part 40: The End of the Journey

DENNIS COWAN

For around ten years now I have been walking with Thomas Ross (Fig. 1), travelling all over Scotland, with a short detour into England, looking for the sundials that he catalogued mostly in volume 5 of *The Castellated and Domestic Architecture of Scotland*¹ way back in 1892. In all, he identified around three hundred sundials and I have followed in his footsteps looking at many of them.

It has been a tremendous journey and I have been to places that I would not otherwise have been, and on the way met Lords, Ladies, Knights of the Realm and Clan Chiefs as well as many other owners who were keen to show me their sundials. Many of these monumental sundials could only be afforded by the wealthy who owned estates worthy of displaying them, some of which are now in the care of the National Trust for Scotland. Of course, as we have seen, many other sundials are in public places such as on mercat crosses and churches.

So who was Thomas Ross? He was born, the son of a farmer, in 1839 near Errol in Perthshire. When he was around sixteen years old, after he was found to be very

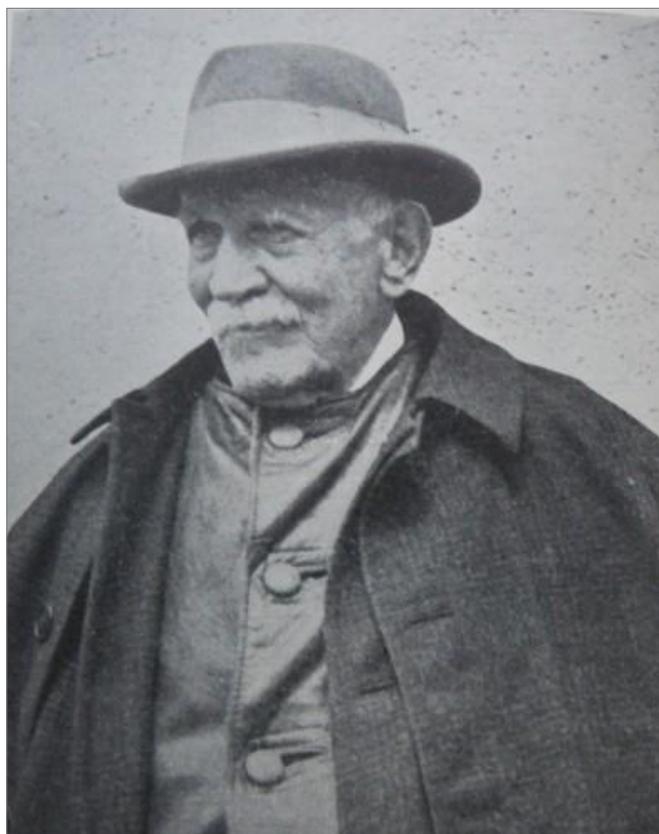


Fig. 1. Thomas Ross in 1925 at the age of 85.
Photo courtesy of the Dictionary of Scottish Architects.



Fig. 2. MacGibbon and Ross's premises at 92 George Street, Edinburgh, still occupied by a firm of architects.

good at drawing, he moved to Glasgow to work as an assistant to architect Alexander Kirkland before moving across the city to the architectural office of Charles Wilson. In 1862 he secured an appointment in Edinburgh as an assistant to David MacGibbon, becoming a partner in the firm of MacGibbon and Ross ten years later. It was around this time that he married Mary MacLaren, eventually having a family of two sons and two daughters.

In his early years in Edinburgh, Ross's closest friend was Alexander Graham Bell of telephone fame, a distant relative, with whom he remained in touch until Bell's death in 1922.

Ross worked in Edinburgh's New Town² originally at MacGibbon's office at 89 George Street, then across the road to 92 George Street (Fig. 2), before moving to 65 Frederick Street in 1890. It is interesting to note that a firm of architects still occupies the first floor of 92 George Street.

His last home was at 14 Saxe-Coburg Place, also in the New Town, and where his two daughters Johanna and Elizabeth, who were unmarried, lived until their deaths in 1963 and 1967 respectively. His two sons, Thomas and James, both moved to London to further their careers; Thomas as a doctor and James as an architect like his father. James served in the Royal Engineers during the First World War, and was awarded the Military Cross in 1915 for conspicuous gallantry.

The first two volumes of Ross and MacGibbon's most famous work, *The Castellated and Domestic Architecture of Scotland*, were published in 1887. Volume 3 followed in 1889, after which the Society of Antiquaries of Scotland published *The Ancient Sundials of Scotland*³ in 1890. This was after it was suggested to Ross by his publisher David Douglas that he should make use of the significant amount of detail on sundials that had been collected. Volumes 4 and 5 followed in 1892 when the original *Ancient Sundials of Scotland* article, with only a small number of additions and omissions, made up a large part of volume 5. One wonders if David Douglas made his suggestion because they were short of material for the final volume! In any case, we owe him a great debt of gratitude.

This major work was followed four years later by *The Ecclesiastical Architecture of Scotland*⁴ with volumes 1 and 2 being published in 1896 and then the third and final volume the following year. Although both partners are credited with these two major works, the majority was carried out by Ross, as MacGibbon spent lengthy periods in France due to family circumstances, before he died in 1902.

As we have seen, only sketches were included in these works even though photography was in place at this time and MacGibbon was known to be a keen photographer. This was quite possibly because cameras were bulky and heavy in those days and most of their trips were carried out at the weekend by train or bicycle. In any case as was said earlier, the majority of the work was carried out by Ross.

Probably as a result of these two significant works, commissions flowed in, mainly for restoration work or extensions to existing buildings, many of which were related to schools, hotels, banks and churches. Ross's last commission was in 1916 after which he closed the practice and worked from home only on work which interested him.

In 1908 he was appointed as a founder Commissioner of the Royal Commission on the Ancient and Historic Monuments of Scotland (RCAHMS), an organisation that continued until 2015 when it merged with Historic Scotland to become Historic Environment Scotland. It was while working on Commission business in 1915 studying Rossend Castle in Fife that he was arrested for sketching in a prohibited area, probably because of its proximity to the approaches to Rosyth Dockyard. He was subsequently found guilty and fined five shillings.

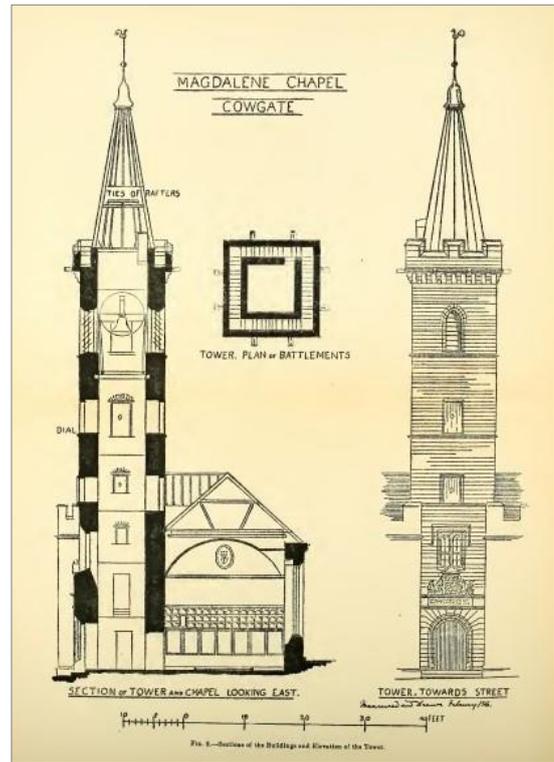


Fig. 3. Plan from 'The Magdalen Chapel' showing the location of the sundial.

Almost certainly, Ross's last involvement in sundials came in 1915 when he collaborated with Gerard Baldwin Brown, who was also a Commissioner with the RCAHMS, on a 78-page article on *The Magdalen Chapel*⁵ in Edinburgh for the RCAHMS and which was published by the Old Edinburgh Club in 1916.

"There is a sundial on the western side of the Tower below the belfry stage [Fig. 3], the existence of which has only recently become known. It has its gnomon still in position and the well-cut figures and lines are quite distinct. The feature is shown in [Fig. 4]. This means of marking the time would be useful to the bell-ringer supposing it to have been constructed before the Tower was furnished with a clock."

The date of the sundial is unknown. As Ross said, it had been forgotten about and had only recently been rediscovered. The chapel itself dates from 1541 and the



Fig. 4. The Magdalen Chapel sundial as it was in 1915.



Fig. 5. The old wooden ladder giving access to the tower.



Fig. 6. The Magdalen Chapel bell dating from 1632.

tower was added in around 1620, so the sundial must be after that. A clock was added to the tower in 1642, replacing a small one which was subsequently sold. Clocks were notoriously unreliable at this time, so it was likely that the sundial would have been used to calibrate the clock, as well as indicating the time to the bell ringer. It was said that during the 17th century, the many churches in Edinburgh all rang their bells at different times, owing to the inaccuracy of the clocks, causing much confusion to the citizens.

Access to the tower is not easy. A very long old wooden ladder (Fig. 5) has to be used to get to the trapdoor leading to the tower. On my first visit, I had only heard that there might a sundial there but did not know where in the tower it might be located, and was not even aware of Ross's involvement. I certainly wasn't properly equipped and had neglected to take a torch with me, not realising that the window openings were all boarded up with no lighting in the tower, and so consequently it was no surprise that I did not find the sundial.

I did, however, find the very large early 17th century bell (Fig. 6) inside the tower when I inadvertently stood on a lever which rang the bell very loudly indeed! Magdalen Chapel has not been used as a place of worship since the early 19th century and, according to the representative of the Scottish Reformation Society who own the building, this was the first time that the bell had been rung in a very, very long time.

After I left, I suddenly saw what turned out to be a protester living in a tree house opposite the chapel (Fig. 7) whom I

had not seen earlier when I entered the building. He was protesting about a plan to build a hotel on the waste ground there. For a brief moment I had the idea of asking him if I could join him in order to get a better view of the tower and possibly see the sundial. But only for a moment!

It was after this first visit, when I did further research, that I found the article by Ross and Brown, so was able to pinpoint the position of the sundial as it was in 1915. So a return visit was required, but the coronavirus pandemic in 2020 and 2021 put paid to this for a good while.

On my second visit, late in 2021, I realised that I was about the same age as Ross was when he was here in 1915, a fitting end to my trip to his final sundial. Unfortunately



Fig. 7. The protester in the tree house opposite Magdalen Chapel tower.



Fig. 8. The location of the sundial, which was nowhere to be seen.

although I knew precisely where it was located, I still could not find the sundial (Fig. 8). Although the gnomon was probably gone, the immovable shutters must have been covering the numerals and hour lines, or else the stones on which it was carved had been removed. That was a real disappointment for me in that I wasn't able to see it. I did search the other windows just in case, but no luck.

On a brighter note, one of the great highlights for me on this journey was when I found out that Ross's personal annotated copy of *The Castellated and Domestic Architecture of Scotland* was held in the archives of the National Trust for Scotland. Due to Covid, it took me eighteen months to arrange a visit to view his copy. Just picking out two examples, Fig. 9 shows his inserted comment regarding the obelisk sundial at Barnbougle

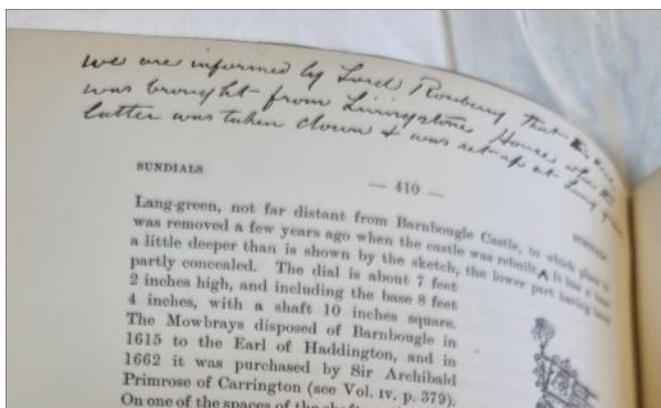


Fig. 9. Ross's note regarding the obelisk sundial now at Barnbougle Castle.

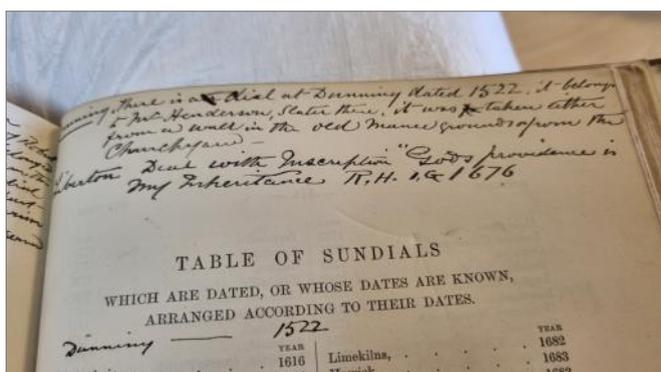


Fig. 10. Ross's comment on the 1522 sundial at Dunning.

Castle ⁶ "that we are informed by Lord Roseberry that this dial was brought from Livingstone House when the latter was taken down and was set up at Lang Green". Secondly, on his Table of Sundials, he tells us that "there is a dial at Dunning dated 1522, it belongs to Mr. Henderson, slater there, it was taken either from a wall in the old manse grounds or from the churchyard" (Fig. 10). This comment certainly requires further investigation, as the date of this sundial is far earlier than any other dated Scottish sundial, if in fact it is correct.

It was a great honour to have handled and examined Ross's own copy and I am indebted to Ian Riches of the National Trust for Scotland who facilitated my visit to their archives.

Thomas Ross died of a strangulated hernia on 4 December 1930 at the age of 91 and my last walk in his footsteps was to his final resting place at Comely Bank Cemetery in Edinburgh. He was buried alongside his wife Mary, who had died three years earlier, and his sister Catherine who, like Thomas, died in 1930.

As with some of his sundials, I didn't know exactly where to find his burial place and on entering the cemetery I had three choices. I could go left, right or straight on. For no particular reason, I chose to go left. My luck was in as I found his gravestone within ten minutes. Unfortunately it was broken and had toppled over (Fig. 11), but on the plus side, it had fallen the right way and the inscription was facing upwards (Fig. 12). If it had fallen the other way, I would never have found it. His stone reads:

IN MEMORY
OF
MARY MACLAREN
WIFE OF
THOMAS ROSS LLD.
DIED 20TH JULY 1927.
THOMAS ROSS
LLD., F.S.A. SCOT.
ARCHITECT
DIED 4TH DECEMBER 1930.
CATHERINE ROSS.
HIS SISTER
DIED 8TH MARCH 1930.



Fig. 11. Ross's toppled gravestone at Comely Bank cemetery.



Fig. 12. At least it has fallen the right way and we can still read the inscription today.

I sat down beside his gravestone for ten minutes or so, and reflected on my many journeys over the last ten years in which I had been spiritually in his company. So thank you Thomas Ross, I have enjoyed every minute of our journey.

ACKNOWLEDGEMENTS and NOTES

I owe an enormous debt of gratitude to Thomas Ross and to the many sundial owners who allowed me to see and photograph their sundials and welcomed me into their sometimes private gardens.

Very many thanks to my wife Evelyn who accompanied me to many of the sundials, even though she sometimes forgot who the expert was and tried to take over some of the conversations with the owners.

Some of the detail of Ross's life was obtained from the Dictionary of Scottish Architects website www.scottisharchitects.org.uk and the rest by my own genealogical research.

I am very grateful to the Scottish Reformation Society for twice giving me access to Magdalen Chapel's tower and for not being upset when I rang their bell, and to Ian Riches of the National Trust for Scotland for facilitating my visit to their archives.

And finally but certainly not least, I must thank the editors of the *Bulletin*, in particular John Davis for his enthusiasm for my initial idea and to both him and Christine Northeast for turning my words and photographs into professional articles.

REFERENCES

1. D. MacGibbon and T. Ross: *The Castellated and Domestic Architecture of Scotland – Volumes 1-5*, David Douglas, Edinburgh (1887-92).
2. https://en.wikipedia.org/wiki/New_Town,_Edinburgh
3. T. Ross: *The Ancient Sundials of Scotland*, The Society of Antiquaries of Scotland, Edinburgh (1890).
4. D. MacGibbon and T. Ross: *The Ecclesiastical Architecture of Scotland – Volumes 1-3*, David Douglas, Edinburgh (1896-1897).
5. T. Ross and G. Baldwin Brown: *The Magdalen Chapel, The Book of the Old Edinburgh Club – Eighth Volume*, Edinburgh (1916).
6. D. Cowan: 'The Hidden Dials of South Queensferry', *BSS Bulletin*, 25(i), 16-18 (March 2013).

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Polar Dial at Bat Galim, Haifa

Geoff Parsons sent us these photographs of a modern polar sundial beside the beach in the Bat Galim district of Haifa, Israel. It is made of polished basalt, including the gnomon, which is 4-5 cm thick. The dial carries information about the time in various places around the world – Geoff was particularly interested to see that these



included Portsmouth and Newcastle. The design is simple but very good, and the execution is of high quality. For notes on this and other sundials in Israel, see Shaul Adam: 'Sundials in Israel', *BSS Bulletin*, 97.3, 3-7 (July 1997), from which these details were taken.

CHN

A HAT FOR THE SUN

A Visual Tour of Corniced Sundials in Europe, Part 2

MANUEL PIZARRO

Part 1 of this article (*BSS Bulletin* 34(ii), 2-7 (June 2022)) introduced corniced sundials, and described six of the ‘hat’ type. Part 2 continues with six more ‘hat’ sundials, and concludes with a section on the type with curved cornices.

Hat Sundial from Serramazzone (Italy; Figs 8a and b)

Location: 44° 25' 21.2" N, 10° 47' 22.1" E
(<https://goo.gl/maps/xGCunTuPe9UmVwPh8>)
Address: Strada Provinciale 21, 4, 41028 Serramazzone
(Emilia-Romana, Italy)
Inventory: SAF SER0301; Sundial Atlas IT015066

The sundial is located on a corner of Strada Provinciale in the town of Serramazzone, 35 km from the city of Modena. It was designed by Gianni Ferrari and made in 1998 by Valter and Nino Giovannini, starting from a square pillar of local sandstone from the northern Apennines, although it

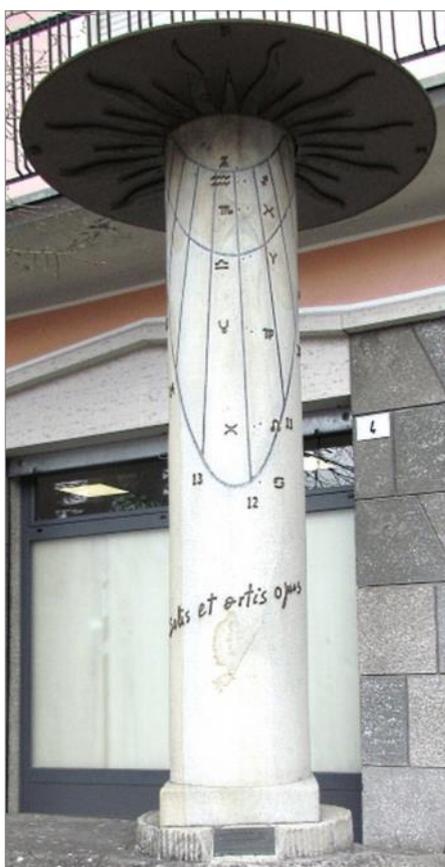


Fig. 8a. Sundial with hat from Serramazzone (Photo: Giuseppe De Donà. Sundial Atlas: <http://sundialatlas.net>).



Fig. 8b. Photograph of the opening day of the hat sundial from Serramazzone; the dial's designer is at the front left (Photo: Gianni Ferrari).

was not installed in its present location until 2002. Copper strips were inserted into hourly and diurnal lines and a circular iron plate (thickness around 1 cm, diameter around 120 cm) was made on which pieces of copper were applied in the shape of a flaming sun. The column has a diameter of 40 cm and a height, below the cap, of about 2 metres.

It is perhaps the only sundial of this type built in Italy in the last 50–100 years.

Hat Sundial of the ‘Olympiaturm’ in Munich (Germany; Figs 9a and b)

Location: 48° 10' 29.2" N, 11° 33' 13.6" E
(<https://goo.gl/maps/De2R1fESXufa6nP48>)
Address: Olympiaturm. Spiridon-Louis-Ring 7, 80809 München (Bayern, Deutschland)
Inventory: Not included or provided; Sundial Atlas DE002692. Missing dial

This sundial, designed by the artist Blasius Gerg, was inside Restaurant 181 of the Munich Olympic Tower, a television tower located in the Olympic Park. The peculiarity of this restaurant, 181 metres above the ground, is that it can rotate around the axis of the tower, achieving a



Fig. 9a. General view of the “Olympic Tower” in the Olympic Park in Munich (Germany) (Source: Wikimedia).



Fig. 9b. Photograph of the hat sundial in ‘Restaurant 181’ of the Olympic tower in Munich (Germany) (Source: ‘Detail’ magazine, personal archives of R. Krieglner).

complete revolution every 49 minutes, thus allowing visitors a 360-degree view of the panorama.

Between 2006 and 2007 the restaurant was completely renovated and the sundial design was completely removed from the cylindrical interior wall. Luckily, a work published in an architectural magazine shows what it looked like and how it worked when it was designed: the restaurant’s ceiling forms a kind of hat that casts its shadow on the time lines, with analemmas for each hour, drawn point by point in the declination lines of the calendar that are indicated for every 10 days. The highest point of the paraboloid is the point of measurement of time and date.

It would be interesting to carry out a new project to restore the sundial with the authorisation and approval of the

management company of the establishment, to recreate this ingenious dial.

Bibliography: Vvaa (1987). Munich Television Tower. Reconstruction of the Revolving Restaurant. *Detail*, 3: 255-259; Casalegno, G. (2018). Un orologio solare ‘a cappello’ ormai scomparso. *Orologi Solari*, 16: 16-19; Casalegno, G. (2018). A ‘Hat’ Sundial Now Unfortunately Disappeared. *The Compendium*, 25 (4): 23-24.

Marian Column in the ‘Marienmünster’ Monastery (Germany; Figs 10a and b)

Location: 47° 56' 54.7" N, 11° 05' 47.6" E (<https://goo.gl/maps/61g5JorEb7gabp829>)
Address: Marienmünster. 86911 Dießen am Ammersee (Bayern, Deutschland)
Inventory: Not included or provided; Sundial Atlas DE001599

Located opposite the ‘Marienmünster’ monastery in Dießen am Ammersee in Upper Bavaria, Germany is an unusual ‘mariensäule’ (Marian column). It includes an intricately styled sundial with supporting arms in gilded metal that function as a ‘hat’, and whose shadow is cast on top of the column to mark the hours. Features include time zone true solar time indications, analemma with noon mean time curve, declination curves, equinoctial line, and horizon line in gold colour.

Funerary Monument of the Cemetery of Unterweissach (Germany; Figs 11a and b)

Location: 48° 55' 45.4" N, 9° 28' 53.5" E (<https://goo.gl/maps/3NxqTuunRhDvwu6p9>)
Address: Friedhof Unterweissach. 71554 Weissach im Tal (Baden-Württemberg, Deutschland)
Inventory: DGC 12317; Sundial Atlas DE002693



Fig. 10a. Marian column in the ‘Marienmünster’ Monastery (Germany) (Photo: Fabio Savian. Sundial Atlas: <http://sundialatlas.net>).



Fig. 10b. Detail of the 'hat' – formed by a hoop and other supporting arches – and of the noon line with the mean time curve engraved on the Marian column in the 'Marienmünster' Monastery (Germany) (Photo: Fabio Savian, Sundial Atlas: <http://sundialatlas.net>).

This sundial was made of stone by Hugo Krautter in 1999, as a funerary monument for his deceased wife. It is located in the Unterweissach cemetery, in the town of Weissach im Tal, in the metropolitan region of Stuttgart in Germany. In the shape of a 'mushroom', it presents a disc in a hat on a truncated cone where the time lines and calendar lines are engraved. This hat is adorned with various motifs on its upper part, as well as with the signs of the zodiac protruding from its surface in small conical ornamental projections with the symbol towards the outside.

The brim of the hat is inscribed in relief with the motto: "Vom Ausgang der Sonne bis zu ihrem Niedergang sei gelobet der Name des Herrn! – Psalm 113.3" (From the rising of the sun to its setting, blessed be the name of the Lord!). On the column, the signs of the zodiac have also been engraved next to the noon line, and the numbers of the hours in Arabic numerals inside a circle from 5 am to 7 pm. At its base, there is a heraldic or family coat of arms and on the opposite side of the 12 o'clock line, inside an oval surrounded by a pentagram, the lyrics of a song written by Franz Liszt with a poem by Johann Wolfgang Goethe titled "Der du von dem Himmel bist..." (You who come from heaven...).

It is apparently in a good state of preservation and has not suffered any type of vandalism, being found in the cemetery grounds.



Fig. 11a. Funerary monument of the Unterweissach cemetery (Photo: Peter Lindner. <http://www.sonnenuhren-lindner.de/sundials.html>).



Fig. 11b. Detail of the back of the funerary monument in the Unterweissach cemetery (Photo: Peter Lindner. <http://www.sonnenuhren-lindner.de/sundials.html>).

Bibliography: Sonderegger, H. (2009). Sonnenuhren auf Zylinderoberflächen. *Rundschreiben*, 37: 3-8; Sonderegger, H. (2009). Sundials on cylinders. *The Compendium*, 16 (4): 7-14.

Hat Sundial from Pleidelsheim (Germany; Figs 12a and b)

Location: 48° 57' 15.5" N, 9° 11' 51.6" E
(<https://goo.gl/maps/whraY7ohAYbsgDt89>)
Address: Max-Eyth-Straße 36. 74385 Pleidelsheim (Baden-Württemberg, Deutschland).
Inventory: DGC 11709; Sundial Atlas DE002694

The expert gnomonist Hugo Krautter painted this sundial in August 2000 on a concrete advertising column with a metal plate as a hat that casts its shadow on the hour lines (marked in Roman numerals from 5 am to 7 pm). Along with the noon line, the signs of the zodiac have been drawn



Fig. 12a. Advertising column with hat clock in Pleidelsheim (Germany) (Photo: <https://www.pleidelsheim.de/freizeit-kultur-tourismus/pleidelsheim-entdecken/kunst>).



Fig. 12b. Detail of the hat, the hour lines and the calendar lines of the sundial on the advertising column of Pleidelsheim (Germany) (Photo: <https://www.pleidelsheim.de/freizeit-kultur-tourismus/pleidelsheim-entdecken/kunst>).

between the calendar lines, which appear in bands of colours from blue (winter solstice) to orange (summer solstice).

Around the column, a clever saying in German has been painted: "A sundial shows the time. A beautiful woman lets it be forgotten." And on the part of the column opposite the noon line, the coat of arms of the municipality of Pleidelsheim appears next to a morning cockerel.

The drawing is deteriorating on the entire surface of the sundial and has also suffered the effects of vandalism with graffiti on the column. Its restoration and the placement of a panel that informs about its operation is recommended.

Sundial with 'Filtering Hat' of the Port of Barcelona (Spain; Figs 13a and b)

Location: 41° 22' 01.7" N, 2° 11' 20.3" E
(<https://goo.gl/maps/vFvx2KFdxGxYAtBr5>)
Address: Marina Vela, Passeig de Joan de Borbó, 103, 08039 Barcelona (Cataluña, España)
Inventory: SCG 6513; Sundial Atlas ES003975

Designed by the engineer Rafael Soler Gayá and built in fine calcarenite from Santanyi, it was inaugurated on 17 December 2018. The surface of concentric revolution of the vertical axis is not a cylinder but a truncated cone, which offers certain complementary advantages: it helps to facilitate the placement of numbers, legends and zodiacal signs; and the obliquity of vision by the observer is attenuated.

The dial is quite complex in its design because it presents, in addition to the hour lines (dark blue from 5 am to 7 pm;

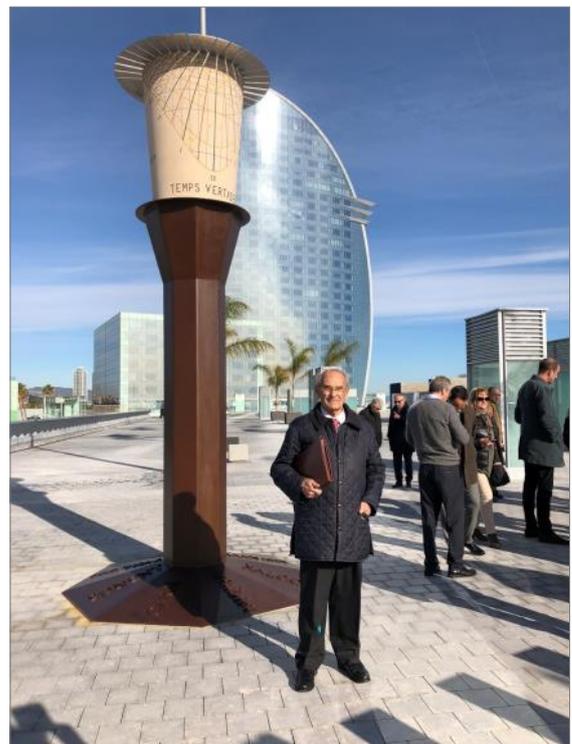


Fig. 13a. The engineer Rafael Soler next to the sundial in the Marina Vela in the port of Barcelona (Spain) (Photo: Conxita Bou. SCG).



Fig. 13b. Detail of the 'filtering hat' of the sundial in the Marina Vela in the port of Barcelona (Spain) (Photo: Miquel Cartisano. <http://totbarcelona.blogspot.com>).

half-hour lines in red) and declination lines (yellow, also having the corresponding zodiacal signs and dates indicated), azimuth lines (from -10° to $+10^{\circ}$ painted brown) and Sun altitude lines (also brown and with a scale of -10° to $+10^{\circ}$). The reading point is indicated by the maximum height of the shadow cast by a sheet metal cap. The slots present in the 'hat' or 'cap' are not essential but are useful to find the correct identification of this point between the two lines of light filtered with opposite inclinations.

Bibliography: Soler Gayá, R. (2018). Quadrant de capell filtrant de la Marina Vela. *La Busca de Paper*, 91: 14-16.

B. SUNDIALS WITH CURVED CORNICE

As mentioned above, this type of dial differs in its operation from the previous ones in that the time reading is done with the time line distant from the tangent shadow projected by the cornice. This cornice can be circular, elliptical, parabolic, etc. Although, theoretically, they can be designed on a multitude of shapes or locations (horizontal, vertical, semi-cylindrical, hemispherical, ...), at present, we only know of one existing dial in the world with this 'particular' way of reading the time.

Castillon Dam Sundial (France; Figs 14a, b and c)

Location: $43^{\circ} 52' 42.1''$ N, $6^{\circ} 32' 14.2''$ E
 (<https://goo.gl/maps/TVy5shRiWxsVVqxW8>)
 Address: Barrage de Castillon Demandolx. 04120
 Castellane (Alpes-de-Haute-Provence, France)
 Inventory: SAF 0406902; Sundial Atlas FR000046

On 20 June 2009, on the occasion of the World Year of Astronomy and the 400th anniversary of Galileo's first observations of the sky with a telescope, an extraordinary sundial drawn on the wall of the Castillon hydroelectric dam was inaugurated. Covering an area of approximately $13,000 \text{ m}^2$, it is the largest dial in the world. It was designed by Denis Savoie and Roland Lehoucq, with the



Fig. 14a. Aspect of the hourly design on the wall of the Castillon dam (France) (Photo: Denis Savoie).

collaboration of Gérard Baillet, who chose this structure for its accessibility criteria, its 'pure' wall and its orientation to the south.

To carry out the calculations, a precise survey of the surface of the wall and the profile of the cornice that crowns the dam was necessary. This complicated operation was carried out by EDF's topography department using lasergrammetry techniques. Subsequently, and independently, to ensure that no errors crept into the results, the gnomonicists determined the shadows cast by this cornice according to the time and day of the year. They found that during a fixed hour all the shadows during the year have an envelope that is a curve tangent to all these shadow lines.



Fig. 14b. Detail of the sundial cornice at the Castillon dam (France) (Photo: Denis Savoie).



Fig. 14c. Indication of 2 pm (solar time) on the sundial of the Castillon dam (France) (Photo: Ricardo Anselmi. Sundial Atlas: <http://sundialatlas.net>).

The originality of this dial lies in the fact that the time reading is done with the hour line that is distant from the real shadow. For example, it is 10 h solar time when the shadow of the cornice is tangential to the corresponding timeline. Finally, the hour lines (which indicate the true

solar time from 6 am to 6 pm) were covered with enamel plates (ochre for the morning hours and green for the afternoon hours) to make them more aesthetic and durable over time.

Bibliography: Baillet, G. (2009). Cadran solaire sur un barrage. *Cadran Info*, 19: 14-18; Savoie, D. (2009). Cadran solaire sur barrage de Castillon. *Cadran Info*, 20: pp; Berni, S. & Boscher, S. (2010). Cadran solaire géant sur le barrage de Castillon: La topographie au service de l'astronomie. *Revue XYZ*, 122: 39-50; Fadel, K. (2010). À l'heure des barrages. *Découverte*, 368: 54-63.

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A PREVIOUSLY UNRECORDED EARLY CHRISTIAN MONASTIC DIAL IN IRELAND

MICHAEL J. HARLEY

"In the years following St Patrick's conversion of the people of Ireland to Christianity, monastic settlements, both large and small, were established throughout the land. The early Irish Christian monks established their communities well away from the towns and villages so that they could follow their monastic rules and live contemplative lives in isolation. In order to properly regulate their times of group prayer and, to a lesser extent, mark the passage of time for secular purposes, each monastery would have had a sundial to mark the appropriate prayer times. These stone sundials were always set into the ground in open areas, within the boundaries of the monasteries, well clear of all shadows, with their faces orientated due south".¹

Until recently only twelve of these ancient sundials were recorded in Ireland (Fig. 1). Nine are *in situ*; three others have been 'lost', but were recorded by the geologist/antiquarian/artist George V. Du Noyer in the 1860s to whom diallists are indebted (Figs 2 & 3). Two others have survived in Wales² and a fragment of another is to be found on the Isle of Man.



Fig. 1. Map showing the locations of the Early Christian monastic sundials in Ireland.

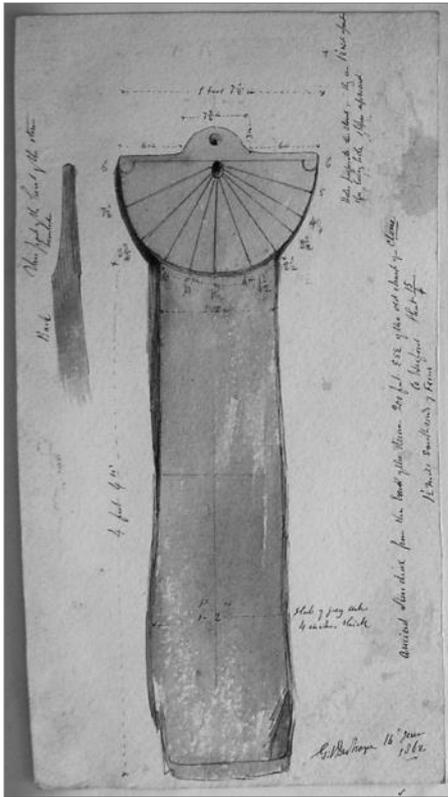


Fig. 2. Drawing by George V. Du Noyer of a dial at Clone Co. Wexford 16 June 1862.³



Fig. 3. A modern photograph of the same dial.

In addition to the detailed dimensions of this typical early monastic dial at Clone, Du Noyer's notes on the drawing read "Ancient Sun dial from the bank of the stream 200 ft ESE of the old church of Clone Co. Wexford. Sheet 15/4"; "1½ miles Southeast of Ferns"; "Back. This part of the stone bevelled"; "Holes perforate the stone 1½ inch apart. The lower hole slopes upwards"; "Slab of grey cist 4¼" thick".

The remote graveyard of Molua in Emylgrennan Co. Limerick (Fig. 4) has the ruins of an old church, some simple field stone grave markers, and other more modern engraved headstones and a previously unrecorded early Christian monastic sundial. There is a nearby holy well also dedicated to St Molua. It is said that the stones from the old St Molua monastery were used to build part of the wall



Fig. 4. Google Maps image of the Molua graveyard.

around the graveyard in the 19th century. No other traces of the monastery are visible.

The sundial was identified as part of a community graveyard survey and has been given a mortuary monument number as part of the survey.³

As part of the survey, archaeologist John Tierney took a photograph of this previously unrecorded sundial (Fig. 5) and sent it to me.

St moLua (St Lua the 'mo' is Gaelige for 'my' – an affectionate way of referring to someone) was an Irish monk who lived in the late 6th / early 7th century and who like Columba and Gall before him trained in the monastery at Bangor, County Down. A fervent follower of monastic life and fired with missionary zeal, he left his native land to preach to the pagans of Scotland. He landed on the island of Lismore, in Loch Linnhe, where he converted the people of the island to Christianity.

There are nine other examples of this type of dial in Ireland, dating to the early medieval period 7th–10th centuries. The eroded dial face of this dial (Fig. 5) is obscured by lichens, as is the reverse side (Fig. 6), but it would have had at least four equal sections divided by grooves that radiate from the gnomon hole. Other timelines may have been cut/painted on the dial face. The shadow casting gnomon is missing. The engraved temporal lines (Fig. 7) on these sundials were designed not to measure the passing hours but to mark the times when canonical prayers should be said viz Dawn (Prime), Mid-morning (Terce),



Fig. 5. Sundial side. Photo courtesy John Tierney ©

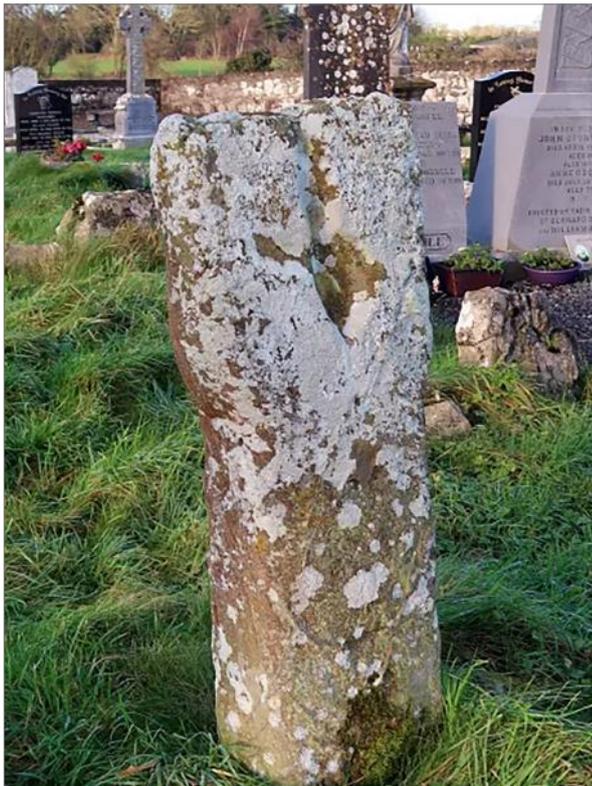


Fig. 6. Reverse side. Photo courtesy holywellscorkandkerry.com©

Mid-day (Sext), Mid-afternoon (None) and Evening (Vespers).

The lichens on the sundial make it difficult to see the prayer line grooves from a photograph (Fig. 5). Until such times as I can visit the graveyard we will have to make do by marking on a copy of the photograph what

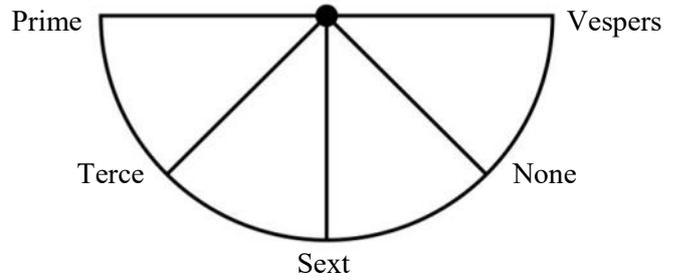


Fig. 7. Monastic prayer times.



Fig. 8. Sundial with overlays.

can be seen in magenta and overlaying the dial face with a classic Monastic layout in blue (Fig. 8).

I can now confidently add this find to my database of early Christian Monastic Dials.

ACKNOWLEDGEMENT

Many thanks to John Tierney for drawing this dial to my attention. Visit his website at www.eachtra.ie

REFERENCES

1. Mario Arnaldi: *The Ancient Sundials of Ireland*, The British Sundial Society (1999).
2. David Scott & Mike Cowham: *Timekeeping in the Medieval World*, BSS Monograph No. 8 (2010).
3. See <https://historicgraves.com/graveyard/st-molua-s/li-stml>

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A DANISH DESKTOP SUNDIAL

MARTIN JENKINS

At the BSS 2019 conference in Bath, I made a purchase and with it came a ‘freebie’ in the form of a small desktop sundial (Fig. 1). It is an equatorial-type dial, total height 230 mm. The dial has an hour ring of 85 mm diameter. The base comprises three pieces of onyx alabaster total height 95 mm.¹ There is what I assume to be a date inscribed on the back of the hour ring in the form 21 – 11 – 55. The onyx alabaster base has a printed-on motto on one side in Danish; “Gør som jeg tæl kun de lyse timer” which translates as “For I count only the sunny hours”.

The dial is very nicely made in brass with some nice detail enhancements, such as the turned end knobs on the rings and the pressed detail on the hour ring. One slightly odd aspect is that the gnomon is set for a latitude of 50°, not correct if the dial was designed for Denmark, an angle of 55° being more appropriate for a ‘general’ use dial in Denmark.

Periodically, I would peer at the little dial sitting on the bookcase and wonder where it had come from, who made it, and what its history was. Sometimes while ‘online’, I would search for information but nothing ever turned up, no matter what key search words were used.



Fig. 2. Polish sundial.



Fig. 1. Danish desktop equatorial sundial, Bath 2019.

I was intrigued by several aspects of the dial. It was not only well made but of materials suitable for outside use, yet was relatively small for an outside dial which seemed contradictory. The motto text also appears ‘fired in’ to the surface of the onyx alabaster to ensure its permanence, as indicated by the fact that firm scratching has no effect upon it. Ink or paint would be easily scratched off from a polished stone type surface. The ‘fired in’ process is known as sublimation whereby special glazing inks are used, and then high temperature baking is applied to ensure that the image is permanent and suitably weatherproof. There is no maker’s name indicated, either on the dial itself, or on the onyx alabaster base.

If it was an ornament, with a date inscribed on it, my next idea was: did it commemorate a particular event in Denmark? No, nothing of significance happened in Denmark in November 1955.²

Recently, while still searching for information, I found five similar dials for sale on various Internet sites! Why they

Fig. 3. Polish sundial, plaque with motto.



have recently appeared is a mystery. Maybe with Covid-19 lockdowns, house clearances have become a big thing?

The first one I discovered is in Poland, dated as between 1960 and 1969.³ However, whereas mine has the motto printed on it, the Polish one has the motto, in Danish, on a small attached plaque (Figs 2 & 3). The onyx alabaster base is slightly different, as the second piece is of much thinner material. This could be a result of ‘waste not’ to maximise the use of the onyx alabaster available.

Next was one similar to mine, in Ukraine with the same printed-on Danish motto and dated as 1970s (Fig. 4). The brass base part is different and the onyx alabaster base consists of only two parts.⁴

I then located another one in the Netherlands. It too had the same Danish motto on a plaque, as per the Polish dial. This



Fig. 4. Ukraine sundial, printed motto.



Fig. 5. Netherlands sundial.

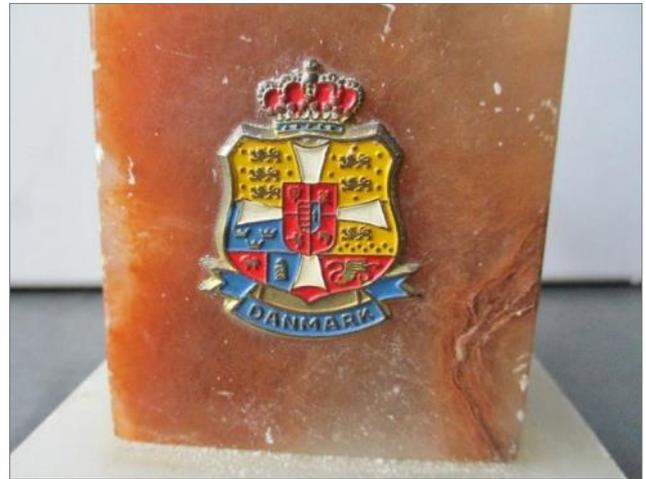


Fig. 6. Netherlands sundial, Danish coat of arms.

was dated as from the 1950s, and in addition to the motto had a Danish coat of arms on the opposite side to the motto plaque (Figs 5 & 6). Again, the brass base is slightly different, but more noticeable is that the gnomon ‘arrow ends’ are different.⁵

Finally, two were located on one other website. One had an identical motto plaque, as per the others, and was dated as 1950–74 (Figs 7 & 8). This was very like the one in Poland, the only real difference being the colour and striations of the onyx alabaster base.⁶ The other sundial, just to be completely different but using the same dial unit, was on a conical metal base and dated as from 1940–50.⁷ It too bears the same metal plaque as per others (Figs 9 & 10). The location of these latter two sundials is unknown.

All of the sales sites give the dials as being Danish but none contains any maker’s information in the product descriptions. Although the seller’s dates for all of the dials discussed vary considerably, I would venture to suggest that they were all made between 1950 and 1970. This was clearly a commercial desktop sundial and although I have



Fig. 7. Unknown sundial, similar to Polish sundial.



Fig. 9. Conical base sundial.



Fig. 8. Unknown sundial, plaque with motto.



Fig. 10. Conical base sundial, plaque with motto.

discovered these five in addition to mine, it is still a very small number from what I suspect would have been a considerable production quantity over the years. I cannot prove it, but I suspect that they were made in India for a Danish distributor, probably in the giftware trade. Why do I think India? Well, India has a strong manufacturing base in onyx alabaster and brass work. Had they been manufactured in Denmark, during the dated period, it is most likely that they would have carried not only a manufacturer's name but also a country-of-origin mark.

It may only be a commercial desktop sundial, but it is a nice little dial with an intriguing background. If any member has any more information, then I would appreciate hearing from you.

REFERENCES and NOTES

1. Onyx Alabaster is also known as onyx marble. It is softer than marble and is good for ornamental stonework.
2. [wikipedia.org/wiki/1955-in-denmark](https://www.wikipedia.org/wiki/1955-in-denmark), accessed November 2021.
3. Pamono.com, 'Vintage design, a sundial made of brass on a marble base', 1960-1969, Poland, \$345.
4. Ebay.com, 'Danish sundial marble brass, made of onyx vintage Scandinavia ultra-rare, late 20th century', Ukraine, 1970s, \$43.
5. Etsy.com, 'Desk/table sundial originating from Denmark', Netherlands, vintage from 1950s, £31.81.
6. Catawiki.com, 'Antique sundial desk ornament 26cm high – copper, marble', location unknown, 1950-1974, Euro 20.
7. Catawiki.com, 'Danish sundial – desk/table model', location unknown, 1940-1950, Euro 30.

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A BELGIAN PORTABLE ALTITUDE DIAL

SUE MANSTON

The BSS Help and Advice Service was sent photographs of this little Belgian sundial by François Juge; he wanted to know how it works. We can usually answer this sort of question quite quickly, but this time we were presented with rather more of a challenge.

The dial was acquired from a Belgian collection after the death of its owner, Victor Rasquin. It is thought to be from the 18th century and made for the area around Brussels or Liège. Made of painted wood, with a cord and bead on one long edge, it measures 52 mm by 72 mm, and was described as ‘missing its gnomon’.

Fig. 1 shows the dial with an hour scale, from 4 to 8, at the top and another set of hour markers, from 4/8 to 12, at the bottom. The upper scale has a curved groove, and there are three small dots which indicate the centres for the three arcs. The cord and bead suggest it might be an altitude dial, but how to use it is still a bit of a puzzle.

Fig. 2 shows the reverse side of the dial which has the following information:

- ‘Levez du soleil pour 50½ deg.’ (sunrise for latitude 50½ degrees)

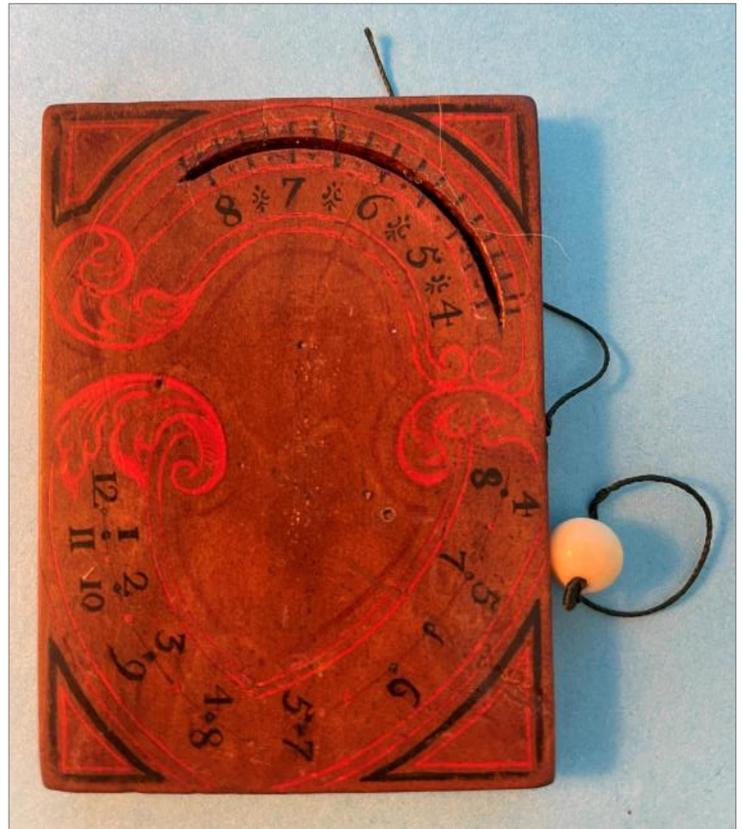


Fig. 1. The front of the dial. Photo courtesy of François Juge.

- Columns 1 and 6 are headed ‘M’ for mois (months)
- Columns 2 and 5 are headed ‘I’ (J) for jours (days)
- Column 3 is headed ‘H’ for heures (hours)
- Column 4 is headed ‘Q’ for quart d’heure (quarter hours)

With this table, on a given date, the user can find the time of sunrise to the nearest quarter of an hour. Returning to the front of the dial, it appears that the hour scale at the top might be the time of sunrise. By placing the cord on the time of sunrise, holding the dial vertically and then tilting the top edge of the dial towards the Sun, the time of day can be read from the hour scale at the bottom.

For example, at sunrise and sunset the Sun’s altitude is zero, so the top edge of the dial is horizontal. The cord hangs down to the appropriate hour marker on the bottom scale (see Fig. 3). As the day progresses and the Sun’s altitude gets higher, the dial is tilted so the top edge points

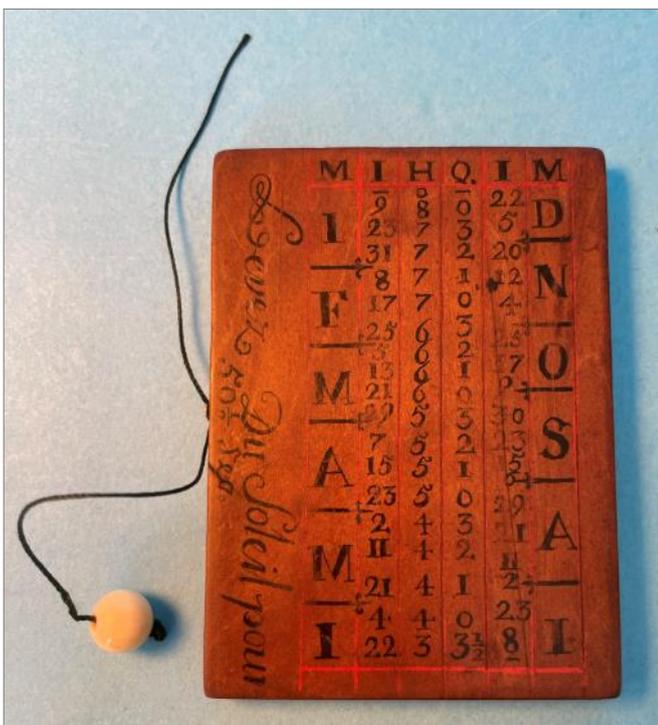


Fig. 2. The reverse side of the dial. Photo courtesy of François Juge.

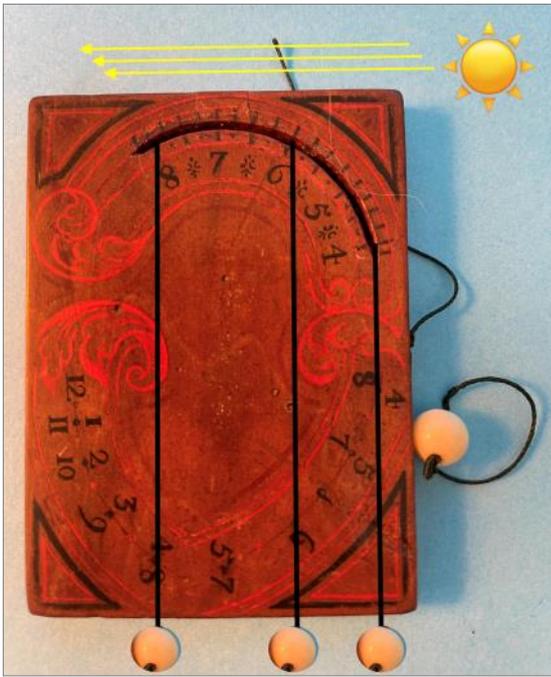


Fig. 3. Placing the cord on the sunrise scale at 4 am, 6 am, and 8 am shows the correct time on the hour scale below when the Sun's altitude is zero.

to the Sun and the cord moves around to 12 noon (see Fig. 4).

Altitude dials often make use of two sights to point to the Sun, but there is no evidence of such sights on this dial. The user would need to hold the dial vertically, move it until both vertical sides are in shadow, then tilt it so the top edge moves in and out of shadow. At the same time, the cord would be held at the correct place on the sunrise scale (using a finger or possibly a peg) and the time can then be read on the bottom scale.

This may be a bit fiddly to use, and not very accurate, but there are other concerns too. If the dial is meant to be held with the short edge at the top, why are the hour numerals at the bottom oriented on their sides? If we want to view the hour numerals the right way up, then the long edge with the cord and bead should be at the top. The cord is fixed to the dial at the centre of a long edge, but if the dial is used as suggested above it does not matter where the cord is fixed. Could the cord be held in place on the upper scale by wedging a peg into the groove?

I asked François if there was any evidence of something being fixed to the front of the dial, such as an alidade or pointer of some kind. He assures me there is no sign of

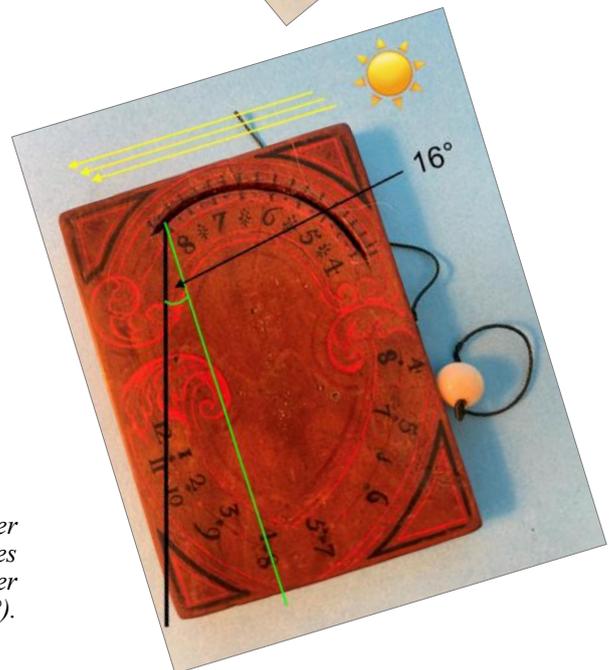
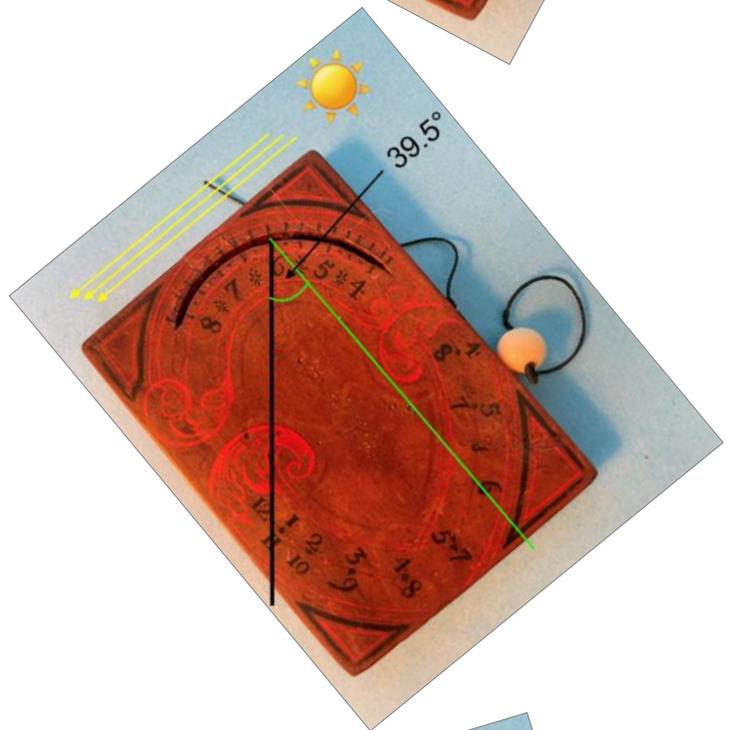
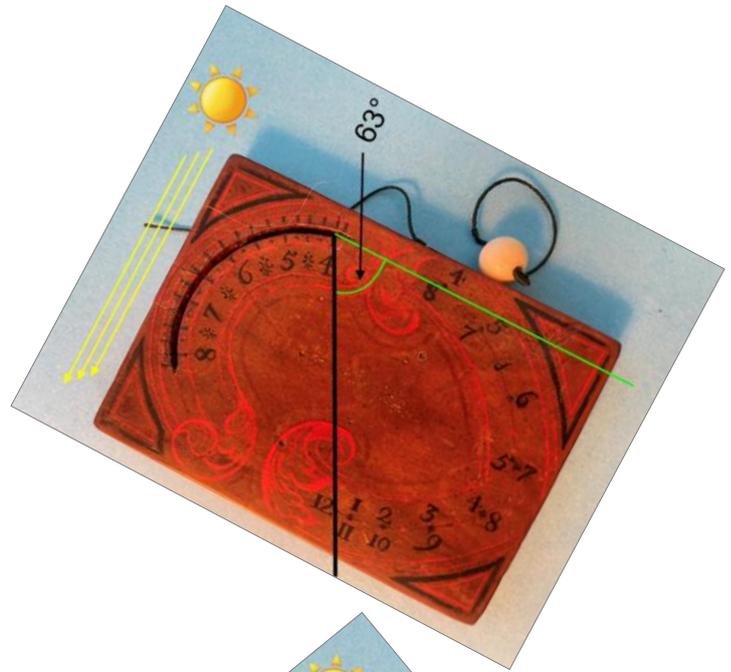


Fig. 4. The cord indicates noon at the summer solstice (top; Sun's altitude is 63°), at the equinoxes (middle; Sun's altitude is 39.5°) and at the winter solstice (bottom; Sun's altitude is 16°).

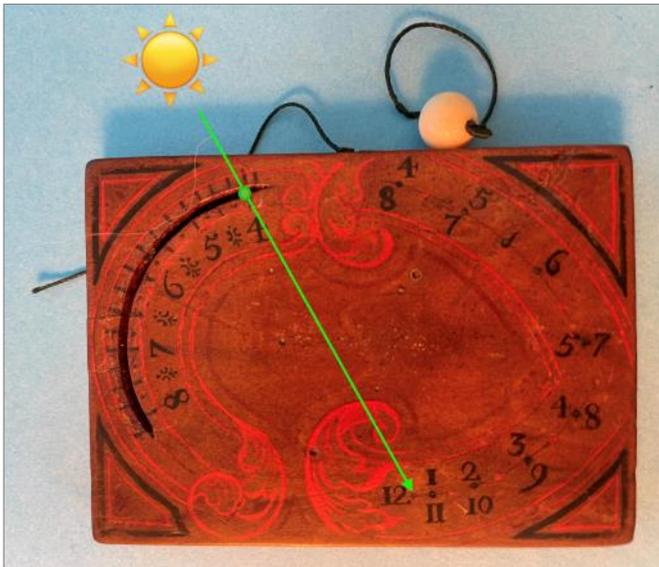


Fig. 5. Using an alidade to find the time. The alidade is represented by the green arrow which points to noon at the summer solstice.

anything like that – there are no screw holes for example. Perhaps an alidade sliding along the groove is a possibility. The alidade could be positioned, with its axis in the groove, at the time of sunrise. The dial would be suspended by the cord with the long edge of the dial horizontal (see Fig. 5). One end of the alidade would point to the Sun and the other end would indicate the time. Such an alidade might extend beyond the edge of the dial and could perhaps be folded when not in use. One disadvantage with suspending the dial with a cord is that it will spin round in the breeze.

The dial is charming and easy to keep in a pocket. I have suggested two possible ways to use it; if anyone has other ideas, please do let me know.

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NEW RESEARCH ON MEDIEVAL SUNDIALS

MARIO ARNALDI, KARLHEINZ SCHALDACH and DENIS SCHNEIDER

September 2021 marked the 50th anniversary of the founding of the Fachkreis Sonnenuhren in Germany. It was the first association in the world to deal exclusively with sundials. From their inception their tasks included recording and researching of sundials. This happened in continuation of the work of Ernst Zinner, the pioneer in the field of international gnomonics. Zinner had made a name for himself because he catalogued all the manuscripts on astronomy that he could find and all the fixed sundials in Europe. Between 1920 and 1960 he had travelled more than 300,000 km by train and car across Europe and visited more than 6,000 sites. Throughout his travels he found over 5,000 sundials in about 3,000 European locations.

In the meantime, one can assume more than 50,000 pieces exist in the whole of Europe. The exploration of such a large number of objects cannot be managed without specialisation of responsibilities. One area includes medieval and early modern dials. Unlike modern sundials, arthistorical and religious considerations are paramount here, while mathematical calculations are of limited use.

In France, Denis Schneider and in Italy, Mario Arnaldi have been working on medieval sundials from the 7th to the 15th century for many years. In Germany, Karlheinz Schaldach, following in the footsteps of Herbert Rau and

with the help of Peter Jacobs and Willy Bachmann, began to take a closer look at sundials up to AD 1500. Arnaldi, Schaldach and Schneider believe that the research results in the field deserve to be presented to a larger audience. This summary of recent literature on the subject is a start and should be continued if well received.

From the Middle Ages (7th to 15th century), 696 objects from Germany are recorded in the database of the Fachkreis Sonnenuhren to date, including 331 objects that can be clearly designated as sundials. Assessment is not yet possible for a further 50 and 315 are scratch dials. The last ones are artless scratches, which are normally located on the south side of churches or chapels (Fig. 1). Almost all are at a height of up to 2 metres. Due to their lack of precision, Peter Jacobs in a two-part article ('Kratzsonnenuhren – Ein Vorschlag der Deutung', *DGC Mitteilungen* 166, 44-47 (2021); 'Kratzsonnenuhren – Oder doch Pilgerzeichen?', *DGC-Mitteilungen* 167, 18-21 (2021)) raises the question of whether scratched sundials in Germany are not symbols of pilgrims and the objects should therefore be reassessed. His main argument is that the churches with the scratches are on pilgrimage routes. Further arguments are their small size, the use of primitive tools and the frequency of such objects at one site. The authors are not wholly convinced by this thesis, but do not



Fig. 1. Scratch dial in Neu-Boltenhagen (Germany).

want to rule it out. A question to be examined in this connection would be what the situation is in England or in France, where most scratch dials are to be found.

Karlheinz Schaldach has published pre-prints of various chapters of his forthcoming book, *Sonnenuhren des Mittelalters und der frühen Neuzeit*, in which various sundial texts from the 14th and 15th centuries are presented. Two are singled out as examples. ‘Die Erfurter Regel’ (*DGC-Mitteilungen* 167, 30-35 (2021)) is about a text that first appeared in the 14th century. It postulates sector divisions of a semi-circular unequal-hour sundial set to the south. An implementation of the rule can be seen at the Brunswick Cathedral (Fig. 2). Another contribution by him is also worth mentioning. In ‘Die erste Konstruktionsbeschreibung einer Sonnenuhr mit Polstab’ (*DGC-Mitteilungen* 169, 38-44 (2022)), where a text is presented which, for the first time, describes the construction of a sundial for a polar style sundial constructed using a compass and a ruler. John Davis had already referred to two faulty manuscripts of the text found in British libraries in ‘A very early description of a horizontal dial in English’ (*BSS Bulletin* 24, 12-15 (2022)). Earlier still is a handwritten account in Bibliothèque Nationale de France (Lat. 7285) which is almost free from errors. It is not insignificant that the text describes the construction of a horizontal dial since these were the first sundials that the Latin scholars learned from the Arabs.

In his recent, easy-to-read book entitled *Une Histoire des cadrans solaires en Occident: La Gnomonique du Moyen Âge au XX^e siècle* (Paris, 2021), the historian of science and former chairman of the *Commission des Cadrans Solaires* in France, Denis Savoie, addresses his 3rd chapter on the medieval sundials of the 7th to the 13th century (pp. 39-52). It reflects the state of research that is known about the Latin shadow tables, the stationary medieval dials, the

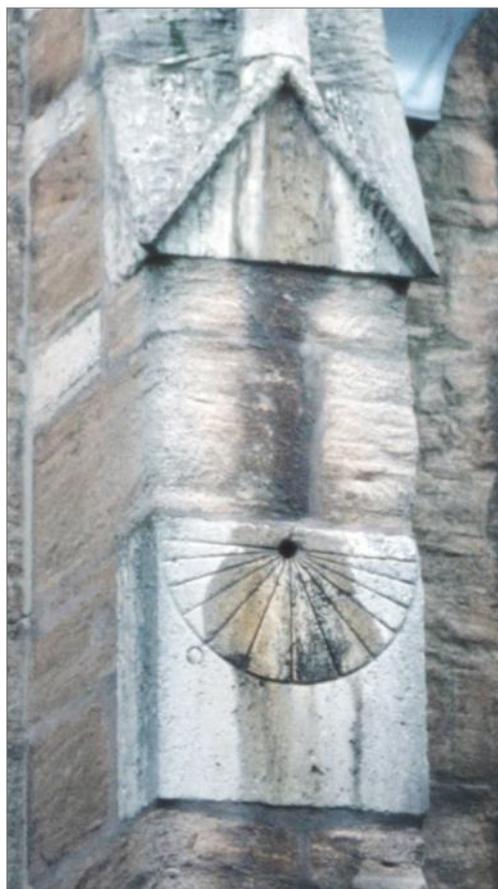


Fig. 2. Sundial at Brunswick cathedral.

cylinder dial and the horary quadrants of that time. The chapter is recommended as an introduction suitable for everyone. In addition and in depth, the article ‘Horologium viatorum: quelques interrogations de plus...’ (*Cadran Info* 49, 159-68 (2021)) by Denis Schneider should be highlighted for its comprehensive treatment of Latin shadow tables.

Finally, two publications by Mario Arnaldi should be mentioned. In ‘Sul nome delle ore – Per un lessico gnomonico più corretto’ (first part: *Orologi Solari* 25, 31-38 (2021); second part: *Orologi Solari* 26, 14-26 (2021); third part: *Orologi Solari* 27, 15-30 (2022)) he explains the meaning and genesis of the various hour names. The contribution is important because the different hour terms are often used uncritically without actually knowing their origin. The article deepens his explanations on the hour systems in the third volume of his book series on medieval sundials, in which he presented the Umbrian and Marche specimens (*Tempus et Regula – Orologi Solari Medievali Italiani, Vol. 3: Le Marche & L’Umbria*, Lecce, 2020).

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A NOTE ON THE VANISHED DIAL IN THE PRIVY GARDEN, WHITEHALL

PETER de CLERCQ

In an article ‘Early Sundials in Royal Gardens’, published in the June 1990 *Bulletin*,¹ Andrew Somerville discussed among others the

“spectacular but rather delicate dial set up in the Privy Garden on 24th July 1669, by the Reverend Father Hall [Society of Jesus], also known as Linus or Line, Professor of Mathematics and Hebrew at Liege, who wrote a detailed account of it which was printed, with illustrations, in 1673. [...] It contained many glass globes, one of which was filled with water and focussed the rays of the sun on a ring of metal numbers, so that a blind person could tell the time by feeling which number was the hottest! The dial was not covered in the winter and so was liable to damage by frost as well as being vulnerable to Noble vandals.”

In the same *Bulletin* issue² is reprinted ‘A Brief Explication of a Pyramidical Dial, which was set up in the King’s Majesty’s Privy Garden at Whitehall, Anno 1669’, taken from William Leybourn’s treatise *Dialling*, Second edition, printed in London in 1700.

The dial (Fig. 1) was a most unusual contraption – to me it looks rather like an ambitious wedding cake! It is known that King Charles II was in the habit of setting his watch by it. It was indeed, as Somerville called it, ‘rather delicate’, and ‘vulnerable to vandalism’; indeed, it once suffered terribly at the hands of a drunken nobleman, but was apparently restored again in 1688. After that, nothing certain appears to be known about the sundial, and William Leybourn ended his description “Thus I have given a brief account of this (now demolished) Dial”.

It may therefore be of interest to readers to know that the dial – or what remained of it – was seen in the year 1710 by the German traveller Zacharias Conrad von Uffenbach (1683–1734) (Fig. 2), who recorded what he saw in a travel journal published after his death (Fig. 3).³ Born in a wealthy patrician family, he studied philosophy, history and law, and then settled in Frankfurt as a lawyer and held various important offices. But he was first and foremost a polyhistor, someone interested in all fields of learning, and he brought together an impressive library. In 1710, aged 27, Zacharias Conrad set out, with his younger brother Johann Friedrich, on what one might call a *grand tour* through north-west Europe. They were on the road for almost one and a half years. He recorded their study tour in enormous detail, and twenty years after his death the manuscript was published as *Merkwürdige Reisen durch Nieder-Sachsen, Holland und Engelland* (Remarkable/noteworthy journeys through Lower Saxony [= northwest

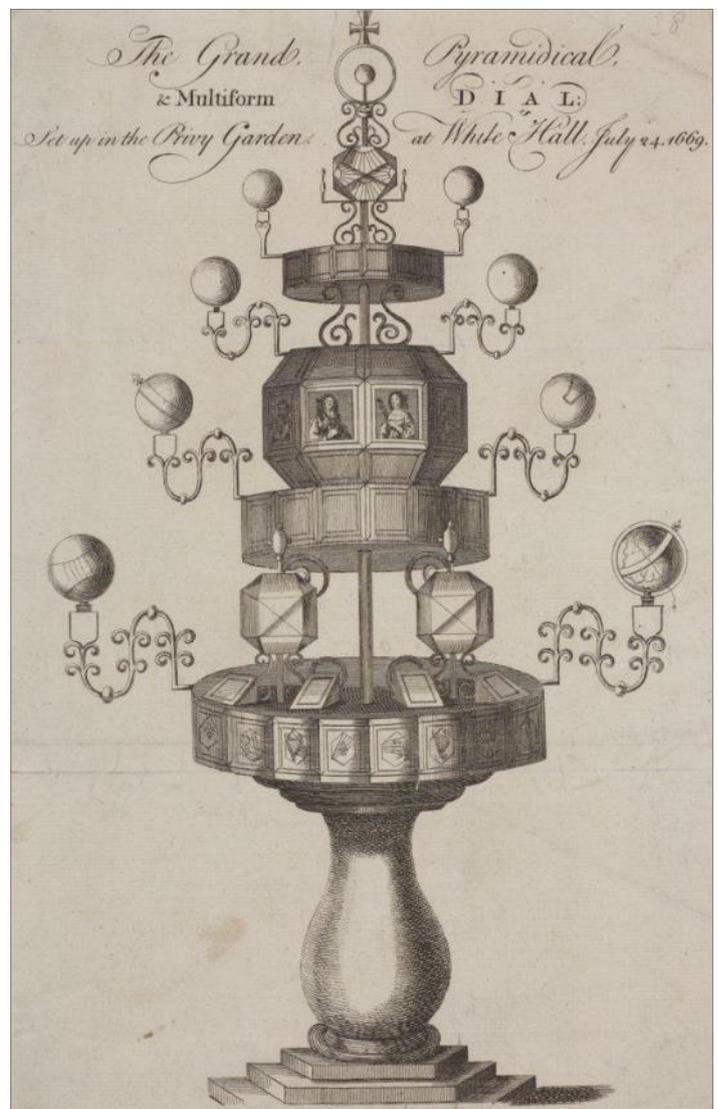


Fig. 1. The grand pyramidal and multiformal dial set up in the Privy Garden at White Hall, July 24, 1669. © London Metropolitan Archives, City of London.

Germany], Holland [or rather: the Dutch Republic] and England). It is a fascinating document, and it would be wonderful if someone were to prepare a complete and annotated English edition. Until then we must do with the original German edition, which is available online in a digitised version. Fortunately, some parts are accessible to English readers, because early in the twentieth century English editions were published of his notes on the visits to Oxford and London.^{4,5}



Fig. 2. Zacharias Conrad von Uffenbach (1683-1734) in a portrait published as frontispiece of the first volume of his travel journal *Merkwürdige Reisen durch Nieder-Sachsen, Holland und Engelland*.

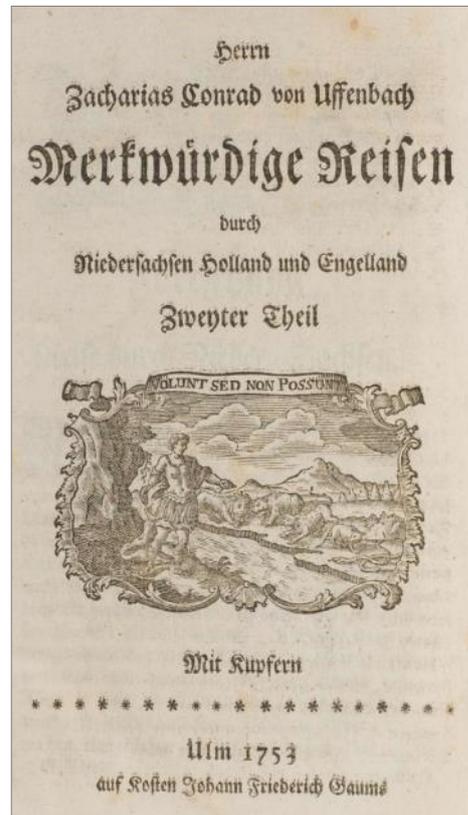


Fig. 3. Title page of the second volume of Z.C. von Uffenbach's *Merkwürdige Reisen ...*

On 3 July 1710, Zacharias Conrad and his brother visited Westminster Abbey. The journal then continues (Fig. 4), in translation:

“When we went home, we came through the so called Private Garden. This is a large open space which was formerly a garden belonging to Whitehall. In it stands the great sundial of which a special description in quarto has been printed. It is made of stone, and was once very fine, but now, like the garden, has gone to ruin. There used to be every conceivable type of sundial on it, in 18 Arcs or holes with 25 Stylis; so it is a pity that, after the garden fell into neglect, it was not brought into safety elsewhere.”⁶

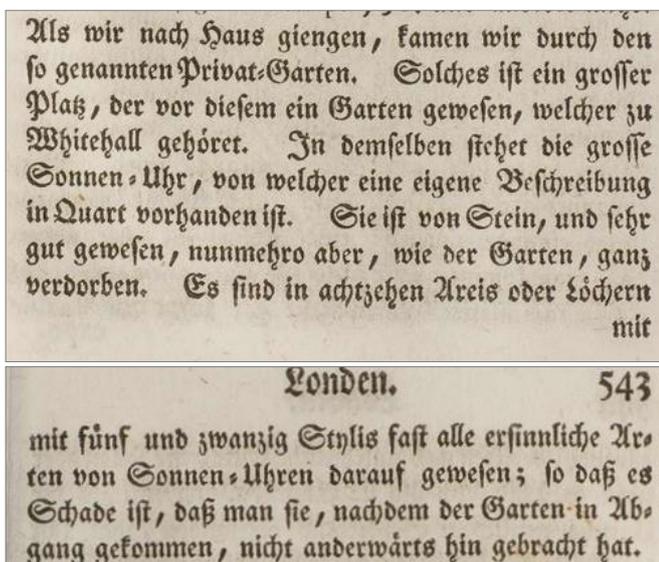


Fig. 4. The visit to the Privy Garden, from *Merkwürdige Reisen ...*, Vol. 2, pp. 542-3.

This same passage was also published in *London in 1710*, but without any attempt to identify the dial. It is not clear to me what the traveller meant with “in 18 Arcs or holes with 25 Stylis”; perhaps readers can help here? Be that as it may, this rare sighting in 1710 is the last we know of the spectacular dial that once graced the Privy Garden at Whitehall, but has since vanished without a trace.

REFERENCES

1. A.R. Somerville: ‘Early Sundials in Royal Gardens’, *BSS Bulletin* 90.2, 8-11 (June 1990).
2. *Ibid.*, pp. 19-25.
3. *Merkwürdige Reisen durch Nieder-Sachsen, Holland und Engelland* (3 vols, 1753-54). For further information see for example my article ‘The travel journals of Balthasar de Monconys (1608–1665) and Zacharias Conrad von Uffenbach (1683–1734)’, *Bulletin of the Scientific Instrument Society* 128, 2-14 (2016).
4. W.H. Quarrell and W.J.C. Quarrell (eds): *Oxford in 1710: from the travels of Zacharias Conrad Von Uffenbach*, Oxford, B. Blackwell (1928).
5. W.H. Quarrell and M.L. Mare (eds): *London in 1710: from the travels of Zacharias Conrad von Uffenbach*, London, Faber & Faber Limited (1934).
6. See n.3, *Merkwürdige Reisen*, Vol. 2, pp. 542-3.

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SUNDIALS OLD AND NEW AT THE WATERWAYS, GREAT YARMOUTH

CHRISTINE NORTHEAST

In the March 2022 issue of the *Bulletin*, Peter Ransom showed a postcard featuring a sundial at the Boating Lake, The Waterways, Great Yarmouth.¹ He noted that the dial was not in the Fixed Dial Register, and thought that it might not have been restored. This merited an investigation and a day at the seaside.

The Waterways is a Grade II listed 7-acre park running N-S alongside the beach in the northern part of the town. As well as the Boating Lake at its north end it consists of the Venetian Waterways (so-named from the perceived similarity of some of the bridges to those in Venice) and ornamental flower beds. The Boating Lake opened in 1926, followed in 1928 by the waterways with canals, bridges, islands, thatched shelters and areas of planting in various styles. They were constructed between January and June of that year, the project originating as part of a scheme to provide work for the unemployed during the Depression. The Waterways have recently undergone a £2.7 M restoration by the Borough Council, largely funded by the National Lottery, and were re-opened in August 2019.



Fig. 1. Sundial at the Venetian Waterways, 1928, looking north.



Fig. 2. The same view as Fig. 1, almost 100 years later.



Fig. 4. The new Venetian Waterways sundial.

In addition to the sundial beside the Boating Lake, there was another, near the southern end of the Venetian Waterways (Fig. 1). Early postcards show it standing on an island in a formal garden known as the Sundial Garden; later, this became the Rose Garden for a while after a 'rosery' was constructed there.

The original pedestal still stands in the same place (Fig. 2), but its gnomon (and apparently also the dial plate) had disappeared by the time of the major restoration (Fig. 3) and have been replaced. The new dial (Fig. 4) has an



Fig. 3. The pedestal of the rose garden sundial in 2016, looking south. Photo courtesy of Stacy Cosham.



Fig. 5. Gnomon of the Venetian Waterways dial.

elaborately pierced gnomon, and the brass dial plate is circular, 300 mm in diameter, with an 8-point compass rose and an Equation of Time scale. It shows hours read from the inside, with a noon gap and divided to 30, 15 and 5 minutes. From the design of the dial plate and gnomon (Fig. 5), it seems likely that the dial was made by the late Brad Dillon.

The inscription commemorates Anna Sewell, author of *Black Beauty*, who was born in 1820 at a house in Church Plain, just under a mile away:

“It is good people who make good places”
Anna Sewell ~ *Black Beauty*



Fig. 6. Close-up of the pedestal of the Venetian Waterways dial.

On the pedestal there is another inscription, somewhat hard to decipher (Fig. 6). According to one of the nearby information boards, it is a poem written in the late 18th or early 19th century by Richard Sheridan:

Love Gilds The Hours
Unfolds The Flowers
Of Passing Days
Where Love Is All
No Shadows Fall
The Sunshine Stays

In contrast to the Venetian Waterways sundial, which retained its pedestal (though not its dial plate) and is still in the same place, the one pictured in the March 2022 *Bulletin* underwent several more changes before the recent restoration of The Waterways.

Peter Ransom’s postcard shows the sundial standing in the centre of a square patch of lawn, and other postcards from the same date show that there was a similar structure, perhaps a drinking fountain or bird bath, in the centre of another square lawn (Fig. 7). Each had a slightly tapering square-section pedestal standing on a two-stepped square base, both of which were formed of roughly rectangular blocks. Other pictures from only ten years later indicate that the area was turned into ornamental gardens, with the



Fig. 7. The sundial and bird bath beside the Boating Lake in the late 1920s.



Fig. 8. All that remained of the sundial beside the (drained) Boating Lake in 2016. Photo courtesy of Stacy Cosham.

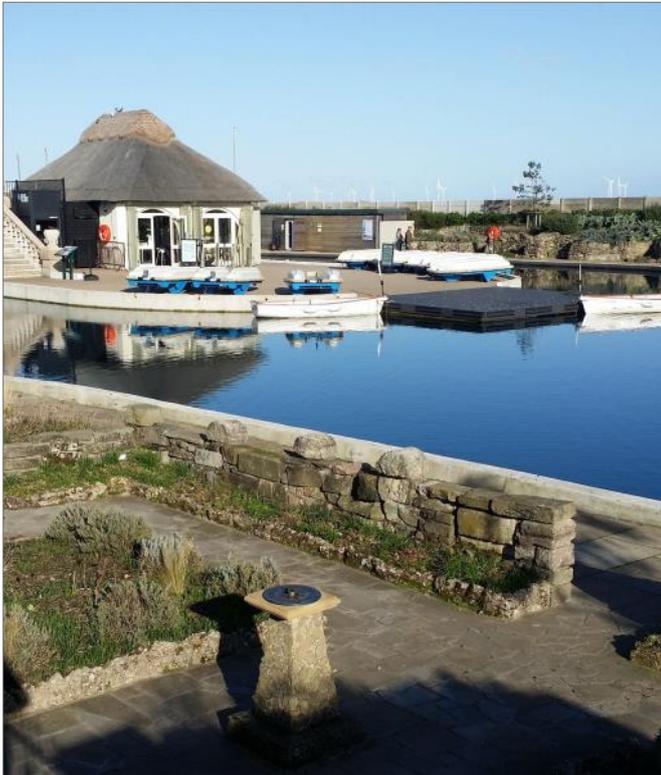


Fig. 9. The restored sundial beside the Boating Lake in February 2022, from the same viewpoint as the 1920s 'Potpourri' postcard.

squares of grass being replaced by flower beds, while the sundial was moved to the path between the two flower beds, lost one of its steps, and gained a new pedestal, this time faced by irregular pieces of stone.

Fig. 8 shows the pedestal in 2016, at the start of the recent restoration of The Waterways, from which it can be seen that by then not only had the sundial lost its gnomon, but the pedestal had lost its capital!

The dial's location is the same now as in the 1930s (Fig. 9), and the pedestal is also the same (Fig. 10), but it has gained a new capital, made by Concrete Renovations Ltd of Peterborough,² and a new dial plate. The replacement capital is the same size as the original, but the small square dial plate shown in the early postcards has been replaced by a large circular one almost identical to the one at the southern end of the Venetian Waterways (Fig. 11), the main difference being in the choice of inscription:

‘... it was well known (I suppose to those who had the good fortune to be Bloaters) that Yarmouth was, upon the whole, the finest place in the universe.’

David Copperfield ~ Charles Dickens

(Why use double quotation marks for one inscription but single for the other?)

Both new dials celebrate writers who had some connection with Great Yarmouth: Charles Dickens stayed just two nights at a hotel in the town in 1849, but used the place as a major setting in *David Copperfield*.



Fig. 10. The 1930s pedestal, topped by the 2019 capital and dial plate already missing its gnomon.



Fig. 11. The new dial plate.

Although the gnomon of the old dial appears to have survived into the 1960s, the gnomon of the new dial has already been wrenched off in the short time since the restored park reopened in 2019. It is to be hoped that the more open position of the Venetian Waterways dial will protect it from the same fate.

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REFERENCES

1. Peter Ransom: 'Postcard Potpourri 58 – Great Yarmouth', *BSS Bulletin* 34(i), 20 (March 2022).
2. Stacy Cosham, personal communication, 25 February 2022.

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