# ANTIQUARIAN HOROLOGY

AHS THE STORY OF TIME

NUMBER FOUR VOLUME THIRTY-SIX DECEMBER 2015



# Book reviews

**JESÚS CRIADO MAINAR, JUAN JOSÉ BORQUE RAMÓN** (editors), **El "Relox viejo" de Veruela. Un testimonio de la relojería mecánica bajomedieval,** [The "Old Clok" of Veruela, a testament to mechanical clock making in the Late Middle Ages]. Published by Institución Fernando el Católico, Excma. Diputación de Zaragoza 2015. Hardback, 35x24,5 cm, 264 pages, 185 illustrations mainly in colour, ISBN 978-84-9911-334-0. €65.00. To order: http://ifc.dpz.es/publicaciones/ver/id/3454.

'In the arts, fortune smiles on those who respect their heritage and eludes those who neglect it'. These words introduce a remarkable story where fortune's smile takes the form of the incidental discovery of a painted medieval clock dial. The curatorial programme that led to this discovery embodies the respect that earned fate's grace. Zaragoza Council in Aragon, Northeast Spain, had for several years been systematically repairing and researching its antiquities before it embarked on the restoration of a Renaissance portrait of Saint Anthony the Great. The portrait came from the parish church of Pozuelo de Aragón. X-ray examination revealed that the wooden board (200x145 cm) behind the canvas was a late medieval clock dial. With meticulous care, the workshops of the Juan Arnaldín College of Conservation in Zaragoza, separated the canvas from the board and turned one treasure into two. Subsequent research identified the dial as belonging to a mechanical 'clok' ordered around 1477 by the abbot of the Cistercian abbey of Santa María at Veruela, near Vera de Moncayo, in Zaragoza province. (I use one of several spellings of Chaucer in translating the Aragonese *Relox* as 'clok' in the title: 'Sikerer was his crowyng….Than is a clok, or an abbay orologge'.) Unfortunately the clock's movement has not survived, but as the dial is the earliest extant in Spain, it certainly merits the multi-disciplined study presented in this richly illustrated book.

In its restored glory the dial speaks chapters of history. Little survives of the furniture of medieval clockwork that gives us a reliable idea of original colour. Steeple dials, with orbs and Jacks exposed to the elements, have usually worn many coats of varying hues. The Veruela dial, made to hang in the transept at the top of a stairway that led to the dormitory, retained enough original detail to allow an authentic restoration that was guided by scientific analysis. Even in its relatively short working life of eighty years it suffered partial repainting. Originally, the sky around the sun was not the cerulean blue of lapis lazuli mixed with white lead that the restorers first encountered, but a vivid green, with paint made from arenite and orpiment. Now this rust red sun shines again, its nose pierced for an hour hand, its pagan grin sentinelled by an evangelist at each corner, forming a Romanesque tetramorph. The dial symbolises the church's dominion of the temporal. It proclaims a sun that worked at night to prompt the monks to matins and lauds. No cloud could interrupt its message; no fox could end its morning call. However 'siker' (sure, consistent) this 'abbay orologge' may have been, it was relied upon by a community who were strict observers of the devotional timetable laid down 900 years earlier by St Benedict. Indeed these monks supplemented his demanding horary with an agenda of manual labour necessary for their order's regime of self-sufficiency. Whether



The medieval clock dial discovered under a canvas. © José Latova (ASF Imagen).

or not the mechanical clock originated as a by-product of astronomical models, being 'naught but a fallen angel from the world of astronomy' as Price put it, this dial vividly evokes its early earthly vocation.

After the editors' introduction, the book is divided into four parts. In the first part Víctor Pérez Álvarez gives a general but thorough account of the discovery and spread of the mechanical clock in the Late Middle Ages. María del Carmen García Herrero considers their increasing use in the kingdom of Aragon and María Teresa Ainaga Andrés describes the clocks and clockmakers of the town of Tarazona, between 1446 and 1595. The second part deals with the history of the Veruela clock and its dial. Juan José Pina Lucindo and Javier Royo Rueda rightly describe this story as fascinating. They probably felt it unnecessary to include a legend of little or no relevance to the history of the clock but nevertheless of interest to anyone visiting the abbey. This abbey to which the hidden treasure is eventually traced was originally erected on the site of the discovery of another hidden treasure. In1146 the Abbey's founder, Pedro de Atarés, uncovered a buried statue of the Blessed Virgin, pointed out to him by its subject, Mary, during an apparition. The statue remains in the abbey where it continues to be venerated to this day. However, it was St Anthony, or rather a portrait of him, that led to the mundane miracle. When a tear in the canvas of the portrait was lifted, a baleful full moon, with a face like a cartoon of Harold Wilson, peered back through the hole. When the dial was fully exposed, two heraldic arms it displayed were identified as those of a medieval ambassadorial abbot, and the Royal House of Aragon. The abbot's arms belonged to Father Gonzalo Fernández de Heredia y Bardaji and the Cistercian Royal Abbey at Veruela was one of several absentee pastorates in his distinguished career. Church records at Veruela contained the memoirs of a later abbot who recorded that after a new clock tower was erected in 1550, a stairway was removed in the transept, which included 'the site of the old clok'. With Father Gonzalo's coat of arms, found also on a sepulchre in the abbey, this note is taken as definite confirmation of the dial's original home. After this account there follows a biography of Father Gonzalo, who died in Rome in 1511. Jesús Criado Mainar writes a chapter on monastic timekeeping. The editors make clear in the introduction that the term 'mechanical clock' does not include clepsydras but is used throughout to denote a weight-driven timepiece with toothed wheels. In this chapter, however, clepsydras are considered along with sundials and hourglasses used before the invention of the clock. Such was the importance the monks attached to their horary, that before the 13th century, when wax candles were introduced, the offices of matins at midnight and lauds at 3 a.m. were usually carried out in the dark. The third part consists of an extensive account of the restoration of the dial. There are illustrations of every phase in the restoration, with details of the techniques and substances encountered and used. The last section displays the documentary evidence of mechanical clocks and clockmakers in both the High and Late Middle Ages in Aragon. Some 70 documents cover a period that begins in the late 14th century, when the 'master clockmaker' Juan Panequin, leaves a will, and ends in the year 1523.

The lack of index and bibliography in this book hardly matters thanks to the clear and progressive layout, and the fullness of footnote. Indeed, due to the abundance of photographs, a lack of Spanish will not prevent readers from learning much of what still survives of medieval horology, particularly in Spain but also outside. Reference to non-Spanish material is impressive, both in the text and in the illustrations. The views on early church timekeeping of North, Landes and Dohrn-van Rossum are all covered, and the photographs of, for example, the carving of the Annunciation in Amiens Cathedral or the sundial at Chartres, will hold a pleasure in discovery for many horologists. The book's main strength lies in its survey of medieval horology in Northeast Spain, which makes it a substantial resource for students of early time measurement. For lovers of the Middle Ages, especially those in a land where its legacy was ravaged by the dissolution of the monasteries, the book is a loud call to Iberian pilgrimage.

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