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Astrolab und Klosterreform an der Jahrtausendwende. Arno Borst

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Review

Reviewed Work(s): Astrolab und Klosterreform an der Jahrtausendwende. by Arno Borst

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of which five survive and another five have disappeared, along with three urban houses (at Paris, Beauvais, and Senlis) which have all disappeared; wine cellars and other subterranean structures, of which eight survive although two are in ruins; five attested winepresses, all of which have disappeared; fish-raising complexes at three sites, all still visible; two tile-making complexes, including kilns; and three attested mills, which have disappeared. There must have been many more mills than three. Although it is possible that explicit references to them have not survived in the documents, I find it hard to believe that indirect information about them could not be gleaned from more traditional treatment of the cartulary record. Certainly for any other Cistercian houses in France that I recall, there was at least one mill, and frequently many, attached to each grange.

Despite my reservations about how Blary has treated certain points concerning land acquisition by the monks of Châalis, I think this is an exciting and important book which will be, I hope, a model for many more such studies — studies which, if they do nothing more, will make owners aware of the importance of preserving their medieval monastic remains, even if they are humble granges rather than great churches. I only exhibit my own prejudices about what is most interesting when I say that I would have preferred to have seen more discussion about medieval grange creation and medieval grange usage in such a study. (Unlike many French works, his includes a fair sample of English and American works.)

It is difficult to be all things to all audiences; it is difficult to contend with the politics of getting access to medieval remains in France; and it is also difficult to tread in the footsteps of such renowned medievalists as Charles Higounet and Dietrich Lohrmann, both of whom have worked on individual granges of Châalis. To have produced the careful and consistent assessment of the properties and buildings of twenty different granges, cellars, and urban houses for any Cistercian abbey in France would have been impressive. To have found, measured, mapped, photographed, and by publication to have preserved for future generations the twenty properties studied here, given the abbey's close proximity to modern-day Paris, is quite astounding. I have been looking forward to seeing this publication since I first heard of its existence; it is a tour de force.

CONSTANCE H. BERMAN, University of Iowa

ARNO BORST, *Astrolab und Klosterreform an der Jahrtausendwende*. Vorgetragen am 11. Februar 1989. (Sitzungsberichte der Heidelberger Akademie der Wissenschaften, Philosophisch-historische Klasse, Jg. 1989, 1.) Heidelberg: Carl Winter Universitätsverlag, 1989. Paper. Pp. 141. DM 45.

The astrolabe was in several respects the most important scientific instrument of the Middle Ages. With it one might make reasonably precise observations and then reduce them by means of the star map, coordinate lines, and scales engraved on the instrument itself. The commonest use of the instrument was no doubt for judging the time, but an astronomer would be taught thirty or forty other uses. It was more important for its didactic function than for its aptness for the reform of astronomy, but even in an age when every student in arts was obliged to study astronomy as a part of the quadrivium, its stereographic projections must have taxed the intellectual resources of most of those who came into contact with it. Just as today with electronic devices that we use without understanding them, so the astrolabe was much used by scholars content to copy out only the instructions for its use and leave uncopied the first half of the astrolabe treatise, which dealt with its construction. This fact complicates the history of the treatise's transmission.

The essentials of the planispheric instrument (to be contrasted with the three-dimensional armillary sphere) are generally now ascribed to Hipparchus (second century B.C.). Ptolemy provided texts for what was by his time an established tradition — although the instrument was then perhaps more commonly a monumental than a portable instrument. A work by Theon of Alexandria (375) is preserved in a modified form in the treatise of Severus Sebokht (before 660). Johannes Philoponos described it (around 530). Various Muslim scholars wrote works on the subject before — and of course after — its eventual transmission to Latin Europe. What is still very uncertain is how exactly it entered into the western tradition. Arno Borst of Konstanz presents some evidence for its important early stages in the intellectual journey. His evidence centers on a manuscript fragment found in Konstanz.

The fragment comprises two parchment folios which were used in 1588 in the binding of an account book but which Borst shows to have been copied in the monastery of Reichenau a little after the year 1000 from a treatise that might have been compiled in the abbey of Fleury around 995. The present work contains a careful edition of the fragment, but this comes only towards the end, and whether it is the most or the least valuable part of the book depends very much on the needs of the reader.

The bulk of the book is taken up with a somewhat discursive and semiautobiographical introduction explaining how the folios were found and how the author came to work up his knowledge of the subject. (He is currently working on a critical edition of the writings of Hermannus Contractus and is certainly no stranger to the world of the tenth and eleventh centuries.) Borst's selection of authorities is somewhat arbitrary; and while he criticizes peripheral writers for their mistakes, he overlooks some important recent literature. (He could have made better use of the writings of P. Kunitzsch, for instance.) The outward form of the book, with its heavy apparatus of footnotes, does not sort well with the style of the text, which takes for granted too much that is not well understood concerning the very functioning of the instrument under discussion. No novice could deduce from this book what an astrolobe is, and it is much to be feared that those who try, and who read of tables for the direction of Mecca, or of the author's surprise that the astrolabe was not used in Byzantine navigation, are likely to get a very odd picture of what exactly an astrolobe is, or was. Even such explanations as are attempted (without the help of illustrations) are misleading. To say that "die Spinne des planisphärischen Astrolabs ist eine projektion der exzentrischen Ekliptik" is at best inadequate and at worst wrong. The account offered of the astrological houses is likewise mistaken, but the fact is now irrelevant since there is a confusion here with the planetary houses, that is, the signs of the zodiac.

In the last analysis the book must be judged by what is new in it, namely, the Latin text, and those parts of the central chapters in which the astrolabe is put into the context of monastic learning. The diffusion of astronomical knowledge in general, and the astrolabe in particular, in the late tenth century, from northeast Spain to France and southern Germany, is well described. We are given a strong feeling for the difficulties western scholars had with their new material. We are provided with some precious early references to astrolabe ownership and use in the 1020s. Especially important is the story of Abbot Gauzlin's having brought a monk from Ripoll in Spain to Fleury, around the year 1020. It is not that this tells us anything about a specific transfer of material, but the fact is that at present the two most important known texts in this entire historical episode are the Fleury handbook and a text in Ripoll MS

225, which J. M. Millás long ago argued was the oldest western treatise on the subject. P. Kunitzsch has recently shown that the third part of the Ripoll text (*Sententie astrolabii*) is in large measure a literal translation of an Arabic treatise by al-Khwārizmī.

The Fleury and Ripoll texts have a common element. The Konstanz fragment comes verbatim from the Fleury text. Perhaps it is in order here to mention that more than half of the astrolabe text sometimes attributed to Gerbert and published by Pez, Migne, and Bubnov is already in the Ripoll text.

The general source of Western Europe's first knowledge of the astrolabe thus still seems to be what Millás said it was: Catalonia. This first move into monastic Europe seems to have petered out, however, by the middle of the eleventh century, with the work of Hermannus Contractus. It was followed by far more powerful intellectual forces in the centuries following — as exemplified by Pedro Alfonso, Adelard of Bath, Abraham bar Hiyya, Abraham ibn Ezra, Hermann the Dalmatian, and so forth, whose translations were more informed and destined to reach a rather better educated, wider, and more receptive public. Professor Borst, however, leaves his reader blissfully unaware of such future developments. It is perhaps churlish to criticize a historian of century *n* for not informing us about century *n* + 1, but some of his readers might have been wiser had a sentence or two been added at the end explaining that their tour has been along a road destined to be soon replaced by another, a highway with many more lanes.

J. D. NORTH, Rijksuniversiteit Groningen

CAROLINE BRETT, ed. and trans., *The Monks of Redon: "Gesta sanctorum Rotonensium" and "Vita Conuuoionis."* (Studies in Celtic History, 10.) Woodbridge, Suffolk; and Wolfeboro, N.H.: Boydell and Brewer, 1989. Pp. xv, 253; diagrams. $75.

The Breton monastery of Redon derives importance for the Carolingian period from its location on the frontier of Francia and from the relative richness of its documentation. Besides the abbey's cartulary, two of its most important sources are those critically edited for the first time in this volume. Brett argues convincingly that both were written at Redon, the *Gesta* probably between 868 and 917, and the *Vita* most likely in the first half of the eleventh century. She also offers a reasonable explanation of the relationship among the extant copies, but even the lengthy lists of variants she presents do not permit absolute certainty on this question, and a more selective review of the evidence would have provided adequate support for her conclusions. Her discussion of the authors' Latinity — particularly in the case of the *Gesta* — is founded on a similarly thorough presentation. She intends that her close study of this text, placeable both geographically and chronologically within fairly narrow limits, should provide a basis for comparison with other Breton documents, but her detailed linguistic description of the work reveals few features particularly characteristic of the time or place of its composition.

Brett's editions of the texts reflect care and judgment, and her translations seem both accurate and readable. An accurate, critical edition constitutes the most nearly "permanent" contribution to learning a scholar can make, but comments can become outdated as knowledge expands, so keeping them to a minimum can prolong the useful life of the edition. Yet Brett's editorial commentary is unnecessarily spare. Her *apparatus fontium* identifies only biblical and classical reminiscences, ignoring other textual echoes. Her notes focus almost exclusively on identifying places and explaining specific translations; they do not identify people or indicate the dates of events