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## Conference Review – First International Workshop on the Origin and Evolution of Portolan Charts - Lisbon, June 2016

*Keywords:* Portolan; medieval; mapping; chart; workshop; origin

Some years ago I wrote in a draft for my post-graduate thesis ‘there is considerable discussion as to the source and intended use of portolan charts’ and was heavily criticised for only providing one reference – a chapter in the *History of Cartography* (1987). My supervisor was correct but the topic of this workshop does somewhat vindicate my position. It has taken considerable work over the last thirty years just to provide the necessary database to allow the academic study of Portolan charts: Tony Campbell’s publication of the first systematic census of charts in 1986 and his establishment of the website *maphistory.info* in 1997 was followed in 2009 by a publication by Ramon Pujades, which included high-definition digital copies of most of the surviving portolan charts, whilst Richard Pfloderer announced at the workshop his completion of a database of manuscript sea charts from the 13<sup>th</sup> to the 18<sup>th</sup> centuries. It would not be an over-statement to compare their work to that by 19<sup>th</sup> century researchers such as Buchon, Hopf, or Tafel and Thomas in assembling much of the source material for the study of Eastern Mediterranean history in the Late Medieval period.

Portolan charts - not to be confused with portolans, rutters or periploi, which are written sailing instructions - emerged fully-fledged in the 13<sup>th</sup> century but we know very little about their gestation and original authorship, a problem exacerbated by the almost complete lack of sources on their manufacture or utilisation. Hosted appropriately by the Inter-university Centre for the History of Science and Technology at the Navy Museum in Lisbon, the workshop aimed to clarify the present state of knowledge on the subject and encouraged the participation of experts from a wide range of academic disciplines. In this it was successful and in one of the key-note papers Evangelos Livieratos, chair of the ICA commission on Cartographic Heritage, commenting on the multi-faceted nature of the issue, noted the wide participation of specialists from both the humanities and sciences. In fact, the twenty four speakers included the disciplines of cartography, geography, history, mathematics, geodesy, navigation, geo-informatics, and palaeography.

A paper by Stefan Schroder confirmed that there is no evidence to suggest that European map-makers derived their knowledge to construct a portolan chart from the Islamic sciences, but there are clear influences in terms of the inclusion of graphical elements to show erudition and the resources of Africa, and, as Chet Van Duzer explained, on the geographical positioning of places. Ramon Pujades demonstrated, however, that through an analysis of their toponymic content and cartographic design the first charts appear to have emerged from Genoa.

Gregory Macintosh presented an evolutionary theory that the charts emerged from the need for a graphic tool to match the use of the newly invented compass to allow more accurate sailing on the open sea, thus reducing the time of voyages, which had been traditionally within sight of the coast. Yet the complete lack of large scale charts seems to suggest other uses. Emmanuelle

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Vignon provided evidence from the Datini company in Majorca of their use by merchants and as gifts, whilst Tony Campbell theorised that, given the thousands of place-names noted on the charts, they may have been used in planning voyages or as a mnemonic for navigators, in a similar way that London taxi drivers learn ‘the knowledge’ - the 25,000 street names in the city.

One of the challenges facing researchers is the identification of names with places on the ground. Speakers covered the Mediterranean coast of France, the Atlantic islands and even central Europe. The concept of ‘deturbations’, the constant reading and writing errors introduced by medieval copyists, was introduced to the workshop by Juan Hernandez as the reason for the formation of many place-names, an analysis of which can both help to date individual charts and provide valuable evidence for historians. Your reviewer’s personal experience suggests that not only does such work need to be undertaken by local specialists but that this would be a fruitful area of study for medieval archaeologists. Copying errors do not, however, just occur in the written word and Kevin Sheehan’s reconstruction of two of the possible chart copying processes provided an understanding of the difficulties faced in a time consuming process and how minor discrepancies could lead to major distortions over a long period.

The highlight of the workshop were two sessions on the second day concerned with the origin of portolan charts. A paper by Roel Nicolai, a specialist in geodesy, concluding that they were not constructed by plane charting and that their high accuracy precludes a medieval origin based on our present understanding of medieval science, was followed by the announcement by a team from the Bibliothèque nationale de France of a possible revised date for the *Carte Pisane*. This is considered the earliest known surviving chart and is therefore a critical link in any process of understanding the ‘origin’ question. Their carbon 14 dating of the vellum on which it is drawn - usually used within a few years of production - suggests with 95% probability a date between 1170 and 1270, well before the present generally accepted date of c.1290. A paper by Joaquim Alves Gaspar on cartometry and magnetic declination, a measure of how much true north differs from magnetic north, tends to support this finding. Magnetic declination varies over time and it is believed to have reduced from a peak of about 10° in 1200 to near zero in 1600. The 10° average measured on the early charts thus suggests a date between 1200 and 1250. The data also suggest that the chart of the Mediterranean is constructed from a number of smaller charts, a conclusion complemented by analysis of the variation of places from their true position by Richard Pflederer, who also compared the directions (to an accuracy of 2.8°) between multiple points as noted in the portolan *Lo Compaasso de Navigare* and the *Carte Pisane* chart. He found little congruence between the two and thus that neither was derived from the other.

The workshop was designed to establish the present knowledge about portolan charts. In this it was successful, not only identifying areas of general agreement but also highlighting issues in dispute. The latter are often highly technical, and it may be best to allocate one session at any future workshop for working groups. The focus, too, in your reviewer’s opinion was overly on the charts themselves and, whilst a number of historians were present, lacked a historical context. The early charts probably emerged from Genoa, but why did this occur there and not at one of the other maritime centres of the period – Venice, Pisa or Majorca? For this we need to understand the political, economic and military situation and how the fundamental changes occurring during the 13<sup>th</sup> century in the eastern Mediterranean may have provided the catalyst for the development (or re-invention) of a new technology.

### References

Campbell, Tony (1986) Census of Pre-Sixteenth-Century Portolan Charts. *Imago Mundi*, 38: 67-94.

D. Woodward, G. M. Levis (eds) (2007) *The History of Cartography 3*, Chicago: The University of Chicago Press. In digital form, <http://www.press.uchicago.edu/books/HOC/index.html>

Pujades I Bataller, Ramon J. (2007) *Les cartes portolanes: la representació medieval d'una mar solcada*. Barcelona: Institut Cartogràfic de Catalunya.