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The Avignon Chart: From the Mediterranean to the Baltic 1190 – 1490

What Dick Pflederer's Census tells us about portolan charts

Three Milleniums of Measurement of Earth

38th IMCoS International Symposium - Abstracts

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Cover image
(see page 21)

Agnese atlas showing
the pensinsula of California

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Intro

Dear Map Friends,

Issues of Maps in History are not normally devoted to a single theme but this one comes close to it. First of all, the book recently published by our member Jacques Mille on the Carte d'Avignon, one of the oldest extant portolan charts, is reviewed by Nicola Boothby. Another book on a fourteenth-century Jewish author of nautical atlases is commented on by our prolific Nicola as well. A statistical analysis of the entire corpus of portolan charts follows, based on Dick Pflederer's Census. This study puts numbers on some known trends about these types of maps while raising a few new questions. I am personally convinced that comprehensive databases such as Dick's are the key tool to go beyond the current state of the art of map history. The icing on the cake for this portolan-focused issue is a short news item on the emergence of an unrecorded nautical atlas in Spain.

To round it off, you will find an additional book review by Chris Van Hauwaert, the Brussels Map Circle 2020 report, and the complete list of abstracts and speaker bios for the upcoming IMCoS International Symposium in Brussels. Several of our members are devoting much time and energy to the organisation of the Symposium, which will be really close to its start date when you read these lines.

I look forward to meeting a great many of you there.

Luis A. Robles Macías
editor@bimcc.org

La Carte d'Avignon :
De la Méditerranée à la Baltique 1190 – 1490

Recherches (2015 – 2020) sur les cartes marines et les Portulans

[The Avignon Chart: From the Mediterranean to the Baltic 1190 – 1490. Research (2015 – 2020) on sea charts and portolans]

(in French, with extracts and abstracts in English)

by Jacques Mille

— Bibliothèque d'histoire de la Renaissance 17. Paris: Classiques Garnier, 2021.
— 361 pages, many colour illustrations, hard cover, 21.5 × 30.5 cm
— ISBN 978-2-957-716005 - EUR 60.00

The Carte d'Avignon is a celebration of research by a highly enthusiastic amateur who has put a great deal of time, energy and rigour into the investigation of a newly discovered portolan chart.

Jacques Mille is a member of the Brussels Map Circle, and his fellow members can only applaud the detail of the work undertaken. He is also an expert in communication, having brought on board experts such as Tony Campbell and Ramon Pujades i Bataller, whose experience in the field of marine charts has clearly helped to narrow down the possible identity of the chart.

The book is divided into three parts.

Part One (2015-2017) describes the author's initial passion for maps and how he published books on old maps of the Alps and of the Calanques, the coastal area near Marseille [1].

A meeting with Tony Campbell led to further research into toponyms and other aspects of the coasts of Provence on old maps, this in turn leading to his presentation at the Lisbon conference (*on the Origin and evolution of Portulan Charts*) in June 2016 [2]. The author says that he imagined that his research would end there; however it was just about to take off! His research had led him to a PhD thesis by Paul Fermon, in which there was an illustration of a marine chart which reminded him of the Carte Pisane. Paul Fermon gave Jacques a free hand to start on a journey of discovery, as he did not feel it was of direct interest to his own work.

The author's initial research centres on the French coast from Spain to Italy, a tiny part of the Mediterranean coast as a whole, but an area that he already knew well [3] ,Jacques analysed the information found on the Carte Pisane, the Cortona chart and the Lucca Chart, together with Pietro Vesconte's Chart (1313) which was the one that became the model for charts up to the seventeenth century. In particular he dissects the shapes of the *étangs* – salt lakes – and the Rhone delta and the toponyms of the area. His analysis is beautifully – and usefully – illustrated, leaving the reader in no doubt about the points he is making, and making the reading most pleasurable. Jacques also makes use of two 'portolan texts', written in the form of nautical instructions: *Lo Compasso de navigare, and the Liber de existencia riveriarum et forma maris nostril mediterranei,* plus three other texts: *De Viis Maris*, describing a voyage from England to the Holy Land, the *Compass* book – a translation of a fourteenth century Catalan ordinance, and the *Rizzo portolan, per tutti i navichanti*. Part One finishes with an overview of the evolution of the mapping of the Mediterranean coast from the earliest known charts to the seventeenth century.

1 See review in Maps in History No 55.

2 See report in Maps in History No 56

3 That research was presented to our readers in Maps in History No 59

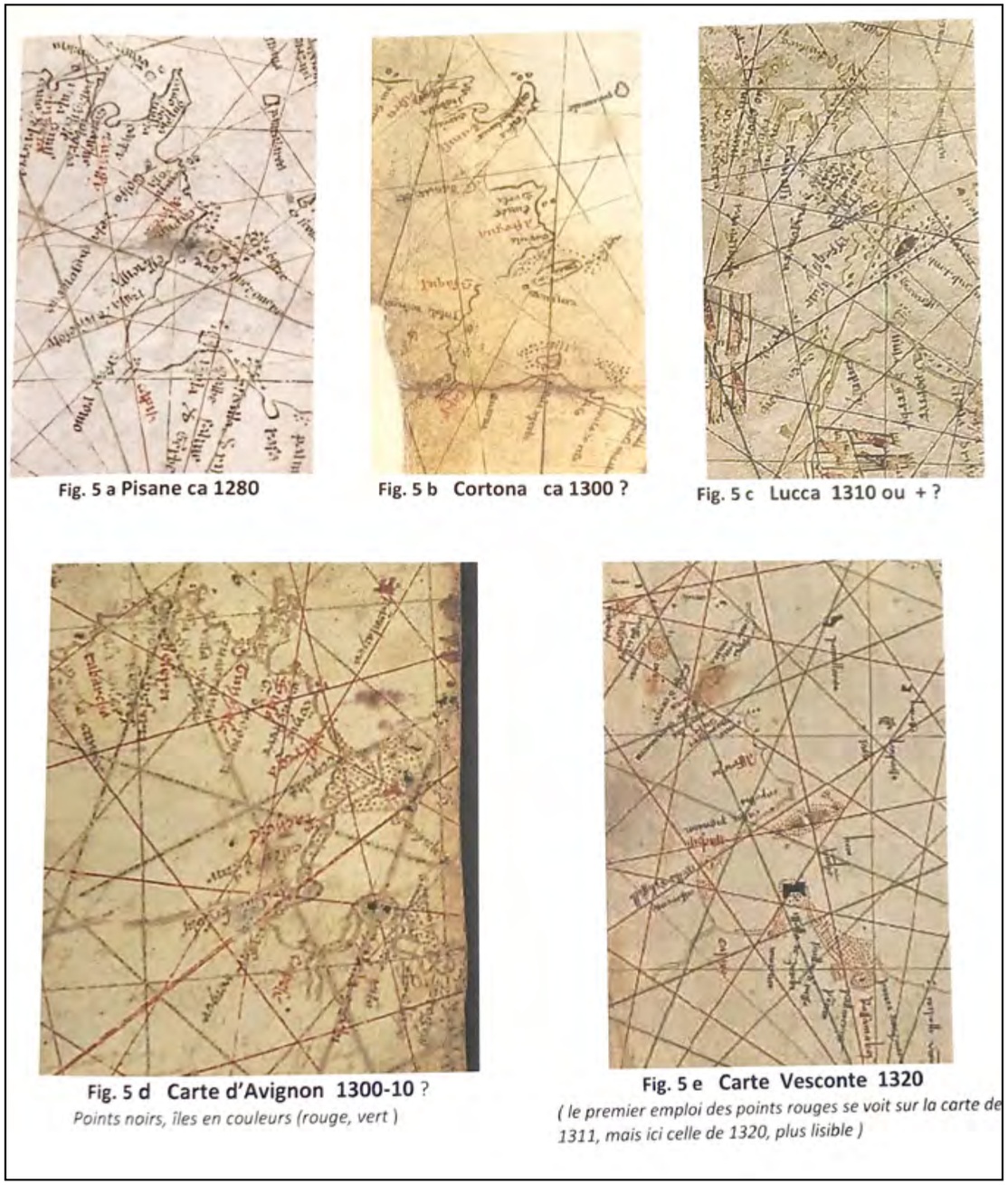

Fig. 1. The Gulf of Gabès (Tunisia) compared on five marine charts..

Part Two (2017-2018) moves on to the research into the Avignon Chart itself. It is a fragment of a manuscript marine chart that was discovered in the archives of the Vaucluse in Avignon. As described above, Jacques Mille came across it in the thesis of Paul Fermon. Unnamed and undated, initial studies indicated that it might date from the beginning of the fourteenth century. Further interest stemmed from the fact that it showed the eastern coast of Great Britain, plus the northwestern coasts up past Bruges to what is now western Latvia. Early portolan charts are very rare, so despite the parchment being in poor condition, with the eastern part cut off, and the surviving part very damaged, it was still very well worthwhile studying and putting in the context of the

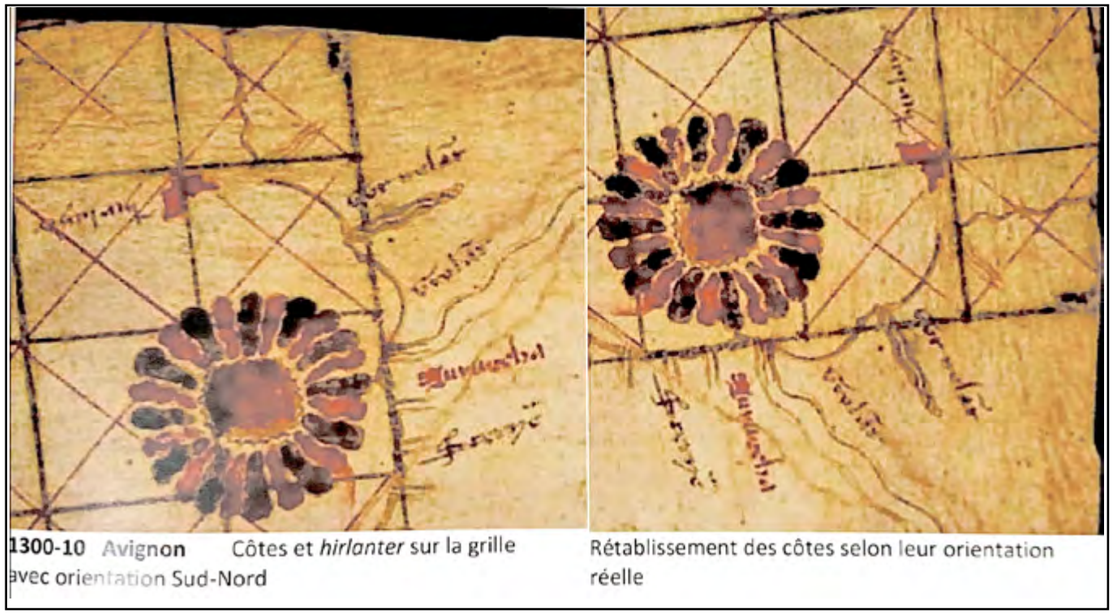

Fig. 2. Re-orientation of Gotland from that on the Avignon Chart to the area's actual orientation

well-known charts of the era. The Chart was restored in 2003.
The author pays particular attention to the Languedoc coastline — part of France's Mediterranean coast, and the Gulf of Gabès in Tunisia (Fig. 1). As before, comparisons are made with known old portolan charts, i.e. the Carte Pisane, the Cortona and Lucca charts and Vesconte's 1311 and 1313 charts. As regards the approach to dating: 'A dating approach thus leads us to placing the Avignon Chart around 1300-1310, among the oldest surviving charts, possibly in the third position after the Carte Pisane and Cortona Chart, but before the undated and anonymous Riccardiana Chart, and the signed and dated charts of Pietro Vesconte 1311 – 1313 as well as the later charts of Carignano and Dulcert (1327, 1339 respectively).[4]

There are some special features on the Chart, not least the coloured twenty-four petalled flower, and seven carefully-drawn churches all outside the Mediterranean area. These may be the first ever non-nautical drawings on a nautical chart. As regards the construction of the chart, the author points out that there are two distinct spaces on the existing part of the chart: first, the Mediterranean part which is drawn in a more or less traditional manner, the second the areas beyond, 'with coasts drawn correctly for France and England but in an aberrant manner, and schematic in their orientation, for those beyond Bruges' (Fig. 2). One of the author's favourite analytical tools is the study of toponyms, and he gives the reader a detailed but very digestible table comparing many of them, also including the *Liber* and the *Compasso* in the comparison.
The drawing of the sector beyond Bruges indicates that the mapmaker probably had to work based on hearsay, and leads the author to describe the voyages of the Genoese traders to the north of Europe, and in particular their presence in London and Bruges. Mariners would journey from the Baltic and inform those trading further south. Jacques illustrates in detail the various goods traded with the north, and how the Hanseatic ports forbade those from the Mediterranean to trade there.

Part Two ends with the rationale for the Chart being in Avignon. The town was the Pope's residence from 1309, and so it became the centre of Christianity and at the same time a major commercial hub. As a consequence the Genoese were there in large numbers.

Part Three (2018-2020) deals with Jacques's later, and latest, research, mainly into the non-Mediterranean sector, i.e. that covering the North Sea area, including the German coasts, the Danish peninsula and the southern shores of the Baltic Sea. His research built on the 'hearsay' theory described in Part Two and describes the 'decisive turning point' in 1320-1330 with charts drawn by Pietro Vesconte in Marino Sanudo's document presented to Pope John XXII advocating a new Crusade. These charts, together with those of Carignano and Dulcert came to be recognised as the first to represent these northern regions, although with very different levels of accuracy. The author mentions, for example, that Dulcert clearly had good knowledge of the cities of the region, but did not place them on his chart accurately. Given these comparisons, he states that there are two views on the dating of the Avignon Chart; first, pre-Vesconte (i.e. 1300-1310) and second, contemporary or post-Vesconte. He makes comparisons of the drawing of the coast of England, the French Atlantic coast and the Danish peninsula and the Baltic Sea to try and support his theory of pre-Vesconte, 1300-1310. Jacques's view, as stated above regarding his dating approach, is that the Avignon Chart is the third oldest – after the Carte Pisane and the Cortona Chart... 'and the first to represent the northern regions, before Carignano and Dulcert. It would be considered pioneering, isolated and without subsequent works. [The chart was] drawn up for these northern regions on direct data for the English coasts and as far as Flanders - Holland and on indirect data for the coasts beyond Bruges, which were controlled, before being blocked, by the Hanseatic League'.

But there is certainly no controversy about the fact that the chartmaker was a professional working at the beginning of the fourteenth century, and probably in Liguria, i.e. the Genoa region, but away from Vesconte's workshop.
Reading the *Carte d'Avignon* makes you feel that you are listening to the author explaining his research, his thoughts and proposals, and his efforts to make sense of his discovery. At every moment he illustrates his presentation with (parts of) maps, sketches, diagrams and tables, extracts from experts and abstracts in English. Jacques keeps the reader constantly on his/her toes and does not let up on his own views. At the same time he is clearly grateful for the help and support from experts in the field.
It is both an excellent read and a reference for those interested in how to go about researching the background to cartographic material. I find it a pity that it has a limited print run of 400, as it seems to me that its potential readership is all those amateurs who are interested in the field but who do not know where to start, rather than the cartography 'lifers' who will have undertaken the process many times.

Jacques Mille has been studying maps for severeal years.
The Avignon chart on vellum measures about 41 × 27 cm...

Nicola Boothby
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4 Quotes in English are taken from the English abstracts at the end of the book

Atlas wilde bomen en struiken

Landschappelijk groen erfgoed in de provincies van Nederland en Vlaanderen

[Atlas of Wild Trees and Shrubs – Scenic Green Heritage in the Provinces of the Netherlands and Flanders]

by Bert Maes (ed.) and others

Gennevilliers, Prisma - Heredium, 2020

— 720 pages, all map details and pictures in full colour, 29.7 × 21.0 cm

— ISBN 978-94-92576-38-5. EUR 39.95

How old maps contribute to future biodiversity

Ancient maps are an inexhaustible source of information for many researchers. Thanks to the extremely detailed work of, inter alia, Count de Ferraris, they can determine not only man-made but also natural elements in the landscape. The Atlas wilde bomen en struiken (published in Dutch) is the result of thirty years of research into ancient woodland, old hedges, old pollards, old solitary trees in the Low Countries. It is not an inventory of remarkable trees; that exists already. Instead it gives an overview of the places in Flanders and the Netherlands where ancient woodland remains. The book is richly illustrated with pictures and old and new map details.

Part 1 explains what the authors consider to be ancient woodland and old landscape elements. We also find a short history of landscape and forest from the ice age until now and the contribution of archaeology to landscape history. A chapter about the relationship between trees, shrubs and insects and one about the management of old woodland and landscape complete the first part.

Part 2, the main part, includes an extensive chapter for each of the seventeen provinces of the Netherlands and Flanders, from Friesland to Zeeland, and from West Flanders to Limburg.

Among the items in the appendix there is a surprisingly long list of scientific names of domestic trees and shrubs. It illustrates how rich nature in the lowlands is and in addition the importance of good management.

Driving or cycling through Flanders and the Netherlands you can hardly believe that there is still ancient woodland, with varieties going back to the ice age. 'They do', ensures Arnout Zwaenepoel when I asked him. As a biologist and expert in historical landscapes and bushes, he is one of the authors of the book. 'Some of the trees we know now in our region as birch and pine trees appeared from 10 000 years ago, oak from 9500 BCE. Beech is more recent, from 2000 BCE. A long appearance brings more biodiversity. Our purpose is to find wild trees and shrubs because of their genetic material. It will help us to save biodiversity in the future.'

Where to start? Ancient maps covering a big area are more than useful.

Arnout Zwaenepoel: 'For Flanders we have the Ferraris map made between 1771 and 1778 and also the work of Vandermaelen between 1846 and 1879. Thanks to the Cartesius project, those maps are easy to work with. For the Netherlands the Topografische Militaire Kaart was used. It dates from 1850, unfortunately much later than we have in Flanders. But anyway, the map is the starting point. If a currently existing woodland is not indicated on the map, it cannot be an ancient woodland. If it is marked on one map, we go back in time with older and more local documents. Some of the maps show every tree or hedge. We have to choose the interesting places. We look for details such as an irregular plot border.'

On the spot, biologists have other indications of ancient woodland. Arnout Zwaenepoel: 'If you can see five different herbs such as wood anemone (Anemone nemorosa), wild daffodil (Narcissus pseudonarcissus), yellow archangel (Lamium galeobdolon), wood speedwell (Veronica montana) and common dog-violet (Viola riviana), there is a good chance that the woodland has existed uninterrupted for a very long time. Another indication is the form of the tree itself. And no, the biggest tree is in general not the oldest. We do have remarkably big trees on the border of a property and we are able to know how old they are. Even more interesting and older but difficult to date are the remains of coppice. The growing trunks of one tree make a circle with a circumference up to ten or even twenty metres. Spectacular, but you have to learn to detect them.'

The Atlas wilde bomen en struiken can be used as a visitor's guide (although some specimens have disappeared during the 30 years it took to complete this enormous work). But its true value is the use for current and future ecological management. As nature has experience in climate change, we can utilise this knowledge for free .

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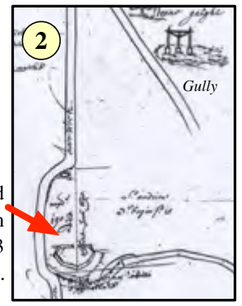
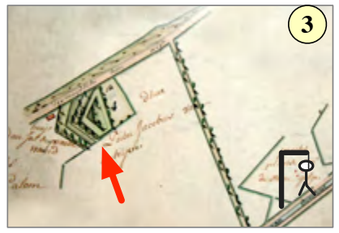
A site with old coppice hornbeam in Bruges (Flanders-Belgium)



Righteousness tree and a little fortress on an image from 1693 (State Archives Bruges).



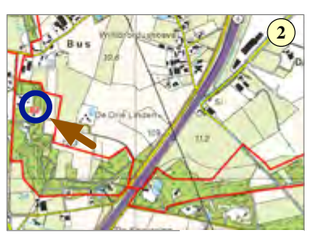
The same fortress with trees upon the ramparts late eighteenth century on the *Carte figurative* by D'Hauw.

The spot on the Ferraris map 1777

So the hornbeam (Carpinus betulus), still there, is estimated to be 250 to 300 years old. You can visit the site, Diksmuidseheerweg 266, 8200 Bruges. (Image Arnout Zwaenepoel).

Pollard oak in De Eerdsche Bergen, Noord-Brabant, the Netherlands

Topographic Map 1850



Actual topography

Actual Situation (image Ecologisch adviesbureau Maes)

Catalan Maps and Jewish Books: The Intellectual Profile of Elisha ben Abraham Cresques (1325-1387)

by Katrin Kogman-Appel

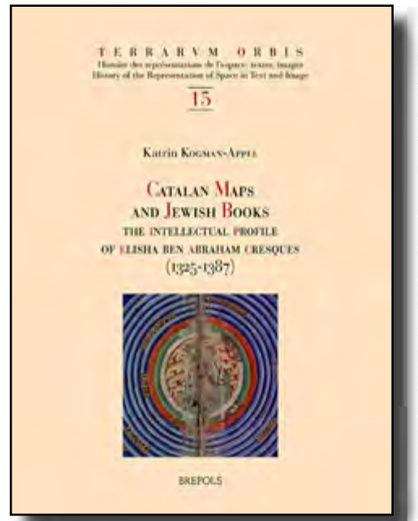
— Terrarum Orbis 15

— Brepols, Turnhout, Belgium 2020

— 358 pages, 122 colour illustrations, loose extracts from the Catalan Atlas, hard cover, 21 × 27 cm

— ISBN 978-2-50358548-2 - EUR 125.00

Elisha ben Abraham Cresques (1325-1387) is known to map enthusiasts as the author of the Catalan Atlas. He is perhaps less well-known as a scribe and illuminator of Hebrew books. Katrin Kogman-Appel presents the reader with the results of her research into the man, his work and his environment, invoking a fascinating portrayal of the Jewish community in Majorca in the fourteenth century.



The author chooses to call the Catalan Atlas the Ecumene Chart (Fig. 1) and the Farhi Bible the Farhi Codex, given that in addition to the Hebrew Bible there are another 200 pages of text. She refers to the mapmaker/scribe as Elisha. I will therefore use her names in this review.

The book presents Elisha as a Jewish professional working within both a Christian and a Jewish framework. It looks at the geographic, political and cultural dimensions of the mapmaker's intellectual and artistic profile. Elisha 'emerges as an erudite member of the Iberian Jewish elite, a man who was perhaps not an active scholar or astronomer himself, but one who was well versed in the intellectual trends in his environment'.

The Ecumene Chart and the Farhi Codex were to serve different audiences: the former was drawn up in his role as cartographer to Peter IV of Aragon, the latter would serve as his personal intellectual legacy to his descendants. The author's research as regards the works themselves was less than straightforward. On the one hand access to the Chart which resides in the Bibliothèque nationale de France is severely restricted, and on the other, there is no direct access to the Farhi Codex, which is part of the Sassoon family collection and resides in a vault in Switzerland.

Fig. 1. Ecumene Chart facsimile

The author starts with an overview of Elisha and his career. Documentary evidence has always underlined his status at Court and his role as mapmaker. The Kingdom of Majorca passed into the hands of Aragon in 1343, when Elisha was nineteen. Both Peter IV of Aragon and his son John were known for their lively interest in travel accounts and their fondness for maps. In 1368 Elisha was granted a privilege, making him a royal familiar. This meant he was now on the payroll, receiving a salary for his services at Court. A nice touch from Kogman-Appel: it also meant, for example, being granted permission to run and later enlarge a water pipe directly into his home. With 1375 as an assumed date of completion, the Chart first appears in the inventories of French royal collections (Charles V of France's library) in 1380, and appears to have been a gift to him from Peter. Clear examples of Peter's patronage are the senyera — the flag of Aragon — yellow-red colouring used for Majorca, and the senyera flying from Jaume Ferrer's ship.

Majorca was considered a centre of culture and the source of news from further east. Arabic and Hebrew could be studied there, and translations made from these languages. The colophon of the Farhi Codex indicates that Elisha's family was well-educated, and the style of the script shows that he had received excellent training as a Hebrew scribe. In 1361 his father dedicated a seat in the synagogue to him in appreciation for this work. Anti-semitic violence erupted in Castile in the 1390s and spread to Aragon, where Jews were forced to convert or flee. This was four years after Elisha's death. His family converted to Christianity. The author notes that perhaps one of Elisha's main reasons for compiling the Farhi Codex was that he saw the events coming and wished to leave the 'legacy of a pious Jew to his offspring'.

Most maps up to the late fourteenth century were circular; forerunners Pietro Vesconte and al-Idrisi had both produced circular world maps aiming to be 'geographically reliable'; this was also Elisha's goal. The author argues that up to then the Chart is the only surviving example of an oblong map and that Elisha developed the concept.

Elisha may have had better access to the source of the Ptolemaic heritage than his Christian colleagues given his Jewish Iberian status and the fact that many works were available in Hebrew. A text by Geminos of Rhodes from his Introduction to the Phenomena (first century BCE, written in Greek) saying: 'Our Ecumene is divided into three parts: Asia, Europe and Libya. The length of the Ecumene is approximately double the width. For this reason, those who draw world maps in proportion draw them on oblong panels so that the length is double the width' was often used in introductions to scientific works. And in the middle of the thirteenth century Moses ibn Tibbon translated the book from Arabic to Hebrew. A Hebrew version of the Almagest was produced at around the same time by Jacob Anatoli. These were only two of many scientific works translated into Latin and Hebrew at this time.

Regarding the production of the Chart, Elisha followed the methods commonly used by chartmakers at the time. Places and other features were copied from extant portolan charts although there are examples of where he added to or diverged from the information he had. Elisha seems to have used Angelino Dulcert's 1339 chart as one of his sources; but the author looks at 'specific comparisons with Dulcert's imagery that demonstrate that (he) represented the Aragonese point of view of his patron'. As mentioned above, Majorca is shown with the gold and red bars of the senyera, which is not the case on any of Dulcert's charts.

Elisha's major sources of information were portolan charts, but these covered only Europe, the Maghreb and the Middle East. For further afield he looked to works by al-Idrisi and other scholars, and for Africa and Asia Elisha had to look to travel accounts, e.g. those of Ibn Battuta and Marco Polo. The geographic information provided then had to be 'translated' into visual information. Being a trained illuminator meant that his cartographic work became a work of art, visualising the entire ecumene as a space encompassing multiple religious and political dimensions. As regards the Catalan inscriptions, scholars have questioned whether he would have written them on the Chart himself, given that he was a scribe of Hebrew. However, it seems that Jews in Majorca were sometimes apprenticed to Christian notaries.

One of Elisha's key sources seems to have been the library of the Jewish physician and scholar Lleó Judah Mosconi. On Mosconi's death he bought six books and his son Jafudà three. However, Elisha seems to have had access to the library during Mosconi's lifetime; among many subjects it contained works of the Arabic scientific tradition which he would have needed for his cartographic work. In addition it was the tradition among Jewish scholars to lend books to each other. A book was copied or memorised before being returned. Mosconi's library contained several works of biblical and especially Midrash exegesis; as seen in the Farhi Codex this was of major interest for Elisha.

Produced largely in parallel with the Ecumene Chart, the Farhi Codex is 'among the most celebrated pieces of Jewish book art'. Elisha began work on it in 1366; it took 16 years to complete. It comprises a bible plus close to two hundred pages of text of varied interests. These texts include, inter alia, works of calendric interests, issues of language and grammar, the rabbinic and midrashic traditions, history and chronography. To quote the author: 'The choice of texts in the Codex also reflects the traditional training of a typical member of the Iberian Jewish elite with its leanings towards the Jewish-Islamic symbiosis of the earlier Middle Ages and rationalist scholarship rooted in the Middle East ... He also took an interest in 'aggadah* and midrash**, gematria*** and mystical ideas'.' In addition the Farhi Codex helps to show how Majorcan Jews would have used Catalan, containing for example a dictionary of Hebrew roots of non-Hebrew expressions – in Catalan, Occitan, French and Arabic.

Fig. 2. Farhi Codex: Carpet page

Kogman-Appel describes the 'carpet pages' (Fig. 2): 'The Farhi Codex includes thirty ornamental carpet pages each of which has a panel with a dense interlaced pattern in Mudéjar style echoing fourteenth-century parallels from Granada and the Maghreb. Carpet pages were quite common in Hebrew Bibles from the middle of the thirteenth century on, but the design of the Farhi pages does not represent a continuation of this Hebrew tradition, but rather conducts an ongoing dialogue with Islamicate visual culture. While choosing a formal repertoire borrowed from Islamicate art however, Elisha used a painting technique that was common in Gothic miniatures.' One interesting difference from the Ecumene Chart is that the Codex decoration is entirely non-figurative, whereas the Chart is rich in figurative imagery.

Kogman-Appel has taken on the substantial task of evaluating research and writings throughout the ages leading up to the production of the Chart and the Codex. She weighs up the influence of Western Christian scholars compared with writings from Muslims and Jews. This is particularly relevant for the Ecumene chart as on the surface it had to respond to the demands of a Christian ruler, while Elisha seemed keen in addition to portray Muslim rulers and their attributes, and to draw a map that was as up-to-date and as 'geographically reliable' as possible.

The appendices present: transcripts from manuscript sources, tables (genealogy, Catalan/Hebrew vocabulary, toponyms), Bibliography and Sources, Indices of Manuscripts and Maps, and Names, Places, and Subjects, and last but not least visuals, mainly of extracts from the Ecumene Chart and the Farhi Codex. Lastly come the photo credits. The work would have been a less forbidding, and more enjoyable and accessible read if the visuals pertaining to the Chart and the Codex had been integrated into the text. The addition of two loose pages — the first two pages of the Chart, and then the following eight — would seem to underline that the publishers knew it would be a tough task for the reader to keep flipping the pages; in my case, when reading about the Chart, I had it up on my computer screen.

Overall, an excellent eye-opener to the intricacies of producing the Chart and the Codex, while also serving two masters, his patron and his own tradition. A challenging read, especially, as far as information on the Farhi Codex is concerned, for those not familiar with Jewish traditions. Plentiful notes allow the reader to follow her threads in greater depth.

* Aggadah is the non-legalistic exegesis which appears in the classical rabbinic literature of Judaism, particularly the Talmud and Midrash.

** Midrash is biblical exegesis – critical explanation or interpretation of a text, especially a religious text – by ancient Judaic authorities, using a mode of interpretation prominent in the Talmud.

*** Gematria is a Hebrew alphanumeric code or cipher that was probably used in biblical times.

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What Dick Pflederer's Census tells us about portolan charts

by Luis A. Robles Macías

Updating the Census

Richard (Dick) Pflederer is an independent scholar who has been studying and cataloguing portolan charts for over two decades. In 2009 he published a Census of Portolan Charts and Atlases that aimed to list all such works, including the current location of each chart or atlas; where, when and by whom they were produced, together with bibliographic references. The definition of 'portolan chart' adopted by Pflederer is mainly based on style: a map focused on coastal geography, drawn by hand on parchment and with a rhumb-line network. He did not impose any constraints on himself regarding the geographical region depicted or on the date of production.

As more information has become available over time, Pflederer has continuously updated the Census with the help of a network of experts and enthusiasts. He now distributes it as a Microsoft Excel file directly by email, upon request to rlpfled@prodigy.net. In March 2021 Pflederer released a major update — the first since 2019 — with over 160 new works as well as countless other minor changes. The total number of charts and atlases in the Census file now amounts to around 2 150. Another significant improvement is that, for each work, a link is now provided to the online database of the MEDEA-Chart project, which hosts digital images of many of them (see box).

The great advantage of an Excel format over a more classic carto-bibliography is that the reader can easily interact with, and exploit, the data to answer questions.

In this article I present the results of three simple quantitative studies I have carried out using Pflederer's Census: some of them are updates or expansions of his work already presented in the introductory chapter of his 2009 book. These are only examples of what can be accomplished, and they certainly do not exhaust the enormous range of questions and analyses to which the database can be subjected. I do hope that my humble efforts will stimulate others to use the Census as a research tool.

Places of production...

The first, simple analysis I have done is to plot how many sea charts and atlases have survived from each historical period (see Fig. 1, top). It is striking to see that, while portolan charts are popularly thought of as typical of the Middle Ages, the great majority of extant works turns out to date from after 1500. In particular, the most numerous are those from the seventeenth century.

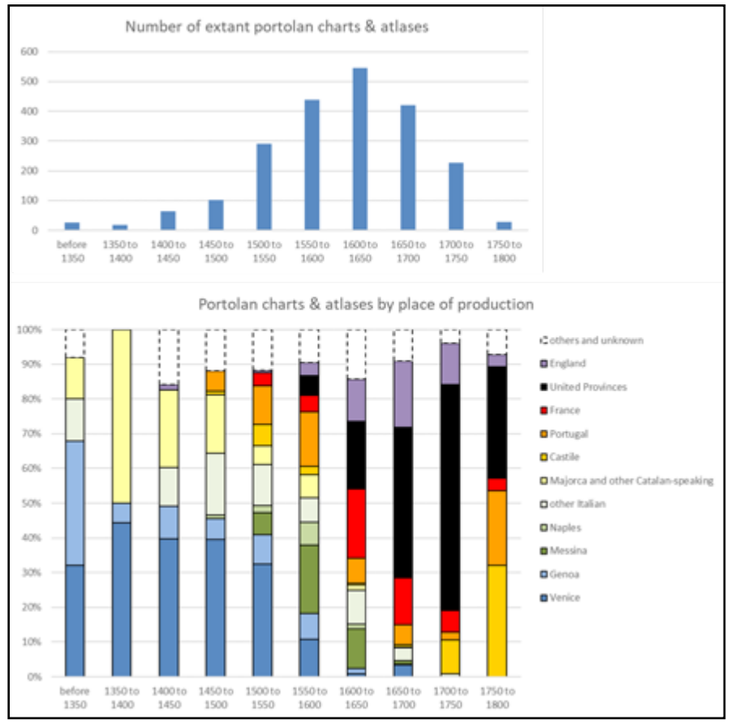

Fig. 1. Top: Number of extant portolan charts and atlases, by historical period. Below: Percentage of portolan charts and atlases by place of production, and by historical period. Note: The Cornaro Atlas of circa 1490 (British Library, Egerton MS 73), which in the Census is counted as a single item, has been divided here into sixteen separate works of different authors.

The catch, of course, is that figure 1 shows only extant charts. A huge number of charts must have been destroyed over time; and it is not far-fetched to assume that losses have been higher for the earlier centuries. We will probably never know when the peak of portolan chart-making activity was truly reached, but it most likely happened well before 1600.

Digging deeper into the data, I have plotted the evolution over time of places of chart production (Fig. 1). Rather than showing absolute numbers, I have normalised each period to 100%. This removes the distortion created by the different rate of chart survival over time, and thus allows a fairer comparison across centuries.

Up until 1450 one can clearly see the domination by just three centres of production: Venice, Genoa and Majorca. Thereafter, however, other places start to emerge, leading to an extraordinary geographic diversity of portolan chart workshops in the sixteenth century. The art of manuscript sea charts then decidedly heads northwest in the seventeenth century, particularly to the United Provinces (roughly today's Netherlands and its former colonial possessions), contemporaneously dwindling to almost extinction in its original Mediterranean birth places.

Beyond these general trends, which will not come as a surprise to anyone knowledgeable in portolan charts, a closer look at the data reveals several less well-known stories. One of them is the extraordinary flourishing of chart-making in Messina, Sicily between 1500 and 1650. With a total of 170 surviving charts and atlases signed there, Messina comes in second only to Venice as the most prolific production centre within Italy's current borders, and ahead of Genoa, Naples and Ancona.

The emergence of Dutch charts in the late sixteenth and seventeenth centuries is also quite spectacular. This, combined with the fact that a larger proportion of works has been preserved from that period than from earlier ones, results in the somewhat surprising fact that the United Provinces – including their overseas possessions – take first place in origin of extant portolan charts, in absolute terms: 470 works, or 22% of the total, to be precise.

Production of portolan charts in France deserves a closer look because in fact this kingdom consisted, from a chart-making point of view, of two very different centres: on the one hand the northern regions of Normandy and Brittany, and on the other the southern region of Provence. Figure 2 shows that, throughout the first half of the sixteenth century, French portolan charts were almost exclusively a northern product led from Dieppe; but that Marseilles later emerged and eventually exploded in such a way that, after 1650, practically all French portolan charts were made there or in nearby Toulon. Therefore, at least from a quantitative point of view, the centre of gravity of French chart-making moved southeast in the seventeenth century, from the Atlantic to the Mediterranean: exactly

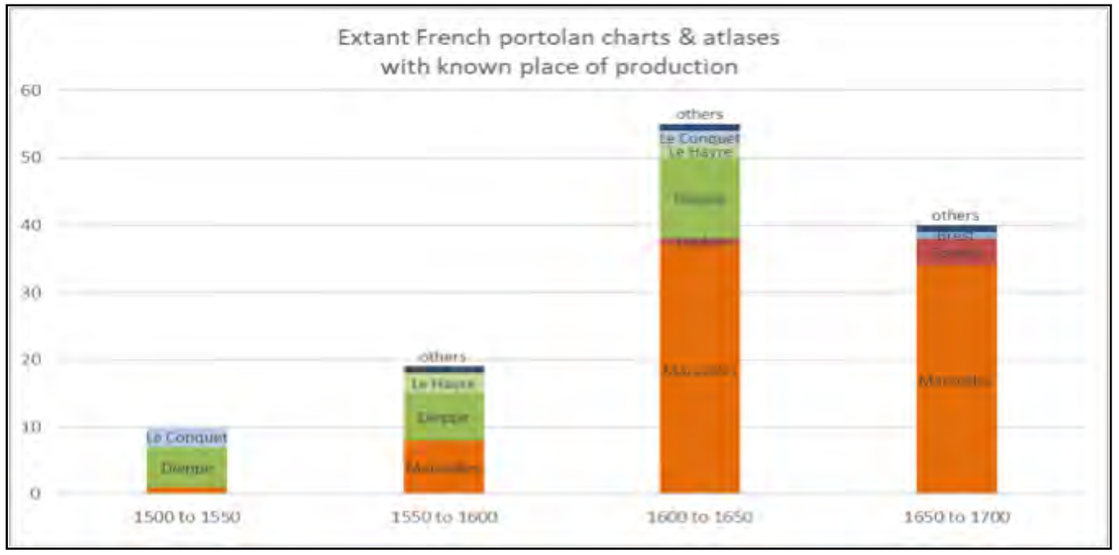

Fig. 2. Number of extant French portolan charts and atlases by place of production, and by historical period. Note: The figure does not include 89 French charts of unknown place of production.

the opposite of the general trend mentioned above whereby most Italian and Spanish workshops languished in the Mediterranean while Dutch and English ones boomed in the Atlantic.

It is also worth noting how certain production places are surprisingly under-represented. Only 35 pre-1700 charts survive from the Crown of Castile, the part of the Spanish Monarchy that included much of the Iberian Peninsula as well as Spanish America, and that was the dominant naval power in the Atlantic for much of that period. In his 2009 book Pflederer estimated that thousands of charts must have been produced in Seville in the sixteenth century alone. Similarly, Antwerp, the main port of Atlantic Europe in the sixteenth century, is almost entirely absent from the Census. The Belgian city can boast of only a 10-sheet planisphere drawn there in 1559 by Andreas Homem, a Portuguese mapmaker who moved to Paris shortly thereafter. Has anyone attempted to explain the reason for these absences? Several hypotheses come to mind that might be worth exploring: Was the rate of survival of Castilian charts markedly lower than those from other places? In that case, why? Did Antwerp's merchants and mariners prefer printed maps, at which the city's publishers excelled? Did Messina's rise as the most prolific portolan chart centre of the Spanish Monarchy out-compete workshops located elsewhere?

Authors

One of the difficulties in the study of manuscript charts is that they often lack a signature or any other trace of authorship. The Census allows us to quantify this issue. Overall, 57% of portolan charts and atlases are signed. For another 17% of them, scholars have attributed an author with varying degrees of certainty. That leaves a little more than a quarter of works entirely lacking any attribution. These percentages vary however quite significantly across different historical

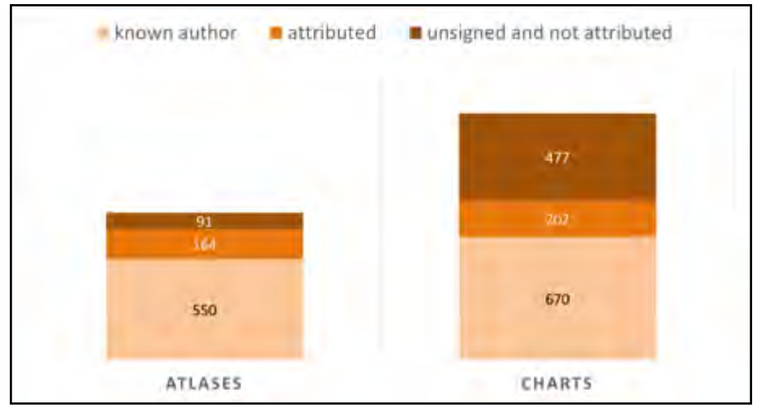

Fig. 3. Number of atlases and charts by knowledge of authorship.

periods, with no definable pattern. One trend is clear, however: the authorship of atlases is much better known than that of charts (Fig. 3). While only 31% of atlases bear no signature, and two thirds of those can be attributed to a known mapmaker, 50% of individual charts are unsigned and fewer than a third of those have been attributed.

The author with the most works in the Census is Battista Agnese, the sixteenth-century Venetian author, with 99. Two caveats are however in order. First, that figure includes both signed works and those that have been attributed to him based on style and content. It is instructive to provide the detailed breakdown: 22 signed atlases, 69 attributed atlases, one signed chart and seven attributed charts. The second caveat is that the survival ratio of Agnese's works may have been higher than average because his atlases were luxury products typically made for wealthy merchants, aristocrats and even monarchs. . It would be reasonable to expect that these costly objects would be preserved more carefully than charts made to use aboard a ship.

The second most prolific author in the Census turns out to be Isaak de Graaf, a Dutch mapmaker in the service of the United East India Company (abbreviated to VOC in Dutch) who, contrary to Agnese, made only charts (84 of them) and no atlases.

The mapmaker with the second most atlases 'under his belt' is Joan Martines, of Messina, with 35.

Looking not at single mapmakers but at 'dynasties', it is the Oliva/Olives family that has left us the most nautical charts and atlases, with around 217 works. This represents a full 10% of the overall Census. This dynasty spans from 1538 with Bartolomeo Olives to Giovanni Battista Caloiro e Oliva in 1673, and its members signed charts in an astounding number of Mediterranean ports: Majorca, Barcelona, Messina, Naples, Marseilles, Malta, Livorno, Palermo and Venice.

Other well-represented family names are those of Blaeu (Amsterdam), Teixeira (Portugal), Maggiolo (mostly Genoa) and Cavallini (mostly Livorno).

Places of preservation

Looking finally at where portolan charts are preserved nowadays, the top five countries are France, Italy, the UK, the Netherlands and the US.

In France, portolan charts and atlases are overwhelmingly kept at the Bibliothèque nationale de France (BnF), which owns 424 of them per the latest count. This is by far the world's largest collection and represents more than 85% of all such works in the country. Thankfully, almost all of them have been digitised at high resolution and can be freely accessed via Gallica.

Italy, on the other hand, is much more atomised. Its top eight holders of portolan charts and atlases (among which I include the Vatican Library even though it belongs to a separate independent state) together account for only 41% of the country's total of 450. The rest is spread across around 70 other libraries, archives, museums and a few private collections. This dispersal greatly complicates scholars' work, as only a few Italian institutions make digital images of their maps available online.

The UK is somewhere in between France and Italy. It is home to the world's second largest collection, that of the British Library (134 items), but the sum of works in all other British institutions is larger, with 207 items. One curiosity is that portolan charts and atlases seem to be an exclusively English affair, as only five are kept in Scotland, Northern Ireland and Wales together.

In the Netherlands, charts and atlases are concentrated in a handful of libraries and archives but the most remarkable aspect is that more than 80% of their collections consist of Dutch works. In the US, on the contrary, collections have been formed exclusively via acquisitions of foreign items and are remarkably varied in terms of geographical origin; except when it comes to Dutch charts, which constitute only 3% of the total in US institutions. Does this mean that US collectors – both private and academic – were never seduced by the charms of Dutch charts?

Beyond this top five, several other countries possess collections of great interest for some specific period or place of production. For instance, German institutions collectively own the most maps made in Seville; in the city of Istanbul one can find the greatest number of Arabic and Ottoman charts and atlases, and Japanese-made portolan charts are preserved in Japan alone.

Crossing place of production with place of preservation leads to some additional insights. We have already seen that Japanese and Ottoman works have tended to stay in their country of origin. For France one finds a similar situation, with most French items now kept at the BnF. But this is not a general rule. Let's look at Italy, for instance. According to the Census, 690 charts and atlases were made within the current borders of Italy and 449 are found nowadays there (including 32 in the Vatican). Does this mean that Italian charts and atlases have mostly stayed at home? Not really, because more than 40% of the works in Italian institutions were made elsewhere, mainly in Majorca, Portugal and Marseilles. Conversely, two thirds of Italian-made charts are now kept in other countries.

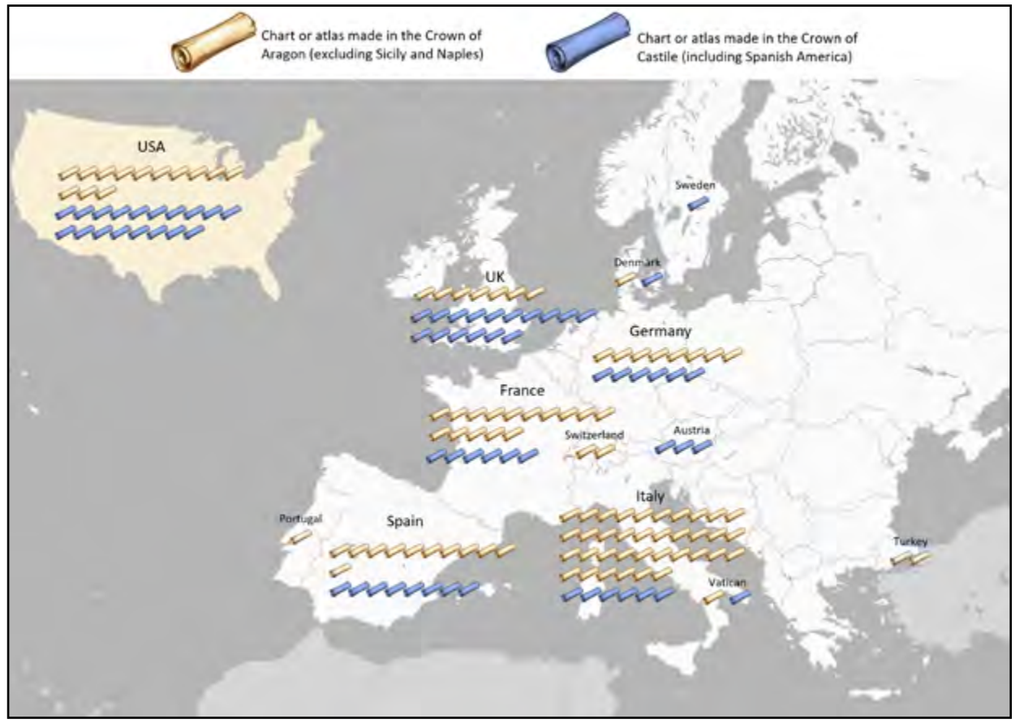

Fig. 4. Current location of portolan charts and atlases made in Spain. Note: 'Spain' is defined here by its borders of 1800; therefore, the Crown of Castile includes Spanish America whereas the Crown of Aragon excludes Sicily and Naples.

The Netherlands, England and Portugal are cases similar to Italy: although each possesses a significant number of charts made within their respective borders — more than any other individual country in the world — most Dutch, English and Portuguese charts are nevertheless preserved beyond their borders..

Spain is a particular case: it is the country where the 'export' of portolan charts and atlases has been the most acute. Figure 4 shows the current location of Spanish works, distinguishing those from the Crown of Aragon (mainly Majorca) and those from the Crown of Castile (mainly Andalusia and Spanish America).

Catalan charts are now found mostly in Italy (38%), followed by France (15%) and the US (13%). Only 11% of them remain in Spain. Castilian charts, for their part, have mostly ended up in the US (27%) and England (23%), with only 12% in Spain.

What are the reasons for this massive outflow of nautical charts and maps from Spain? Why are the final destinations so different between Catalan and Castilian works? And how come not a single Spanish chart has been preserved in former Spanish America? Or do undocumented charts and atlases perhaps await discovery in archives, libraries or private collections in Mexico, Guatemala, Cuba, Peru and elsewhere? Again, open questions raised by a look at the Census that hopefully other researchers may be willing to tackle.

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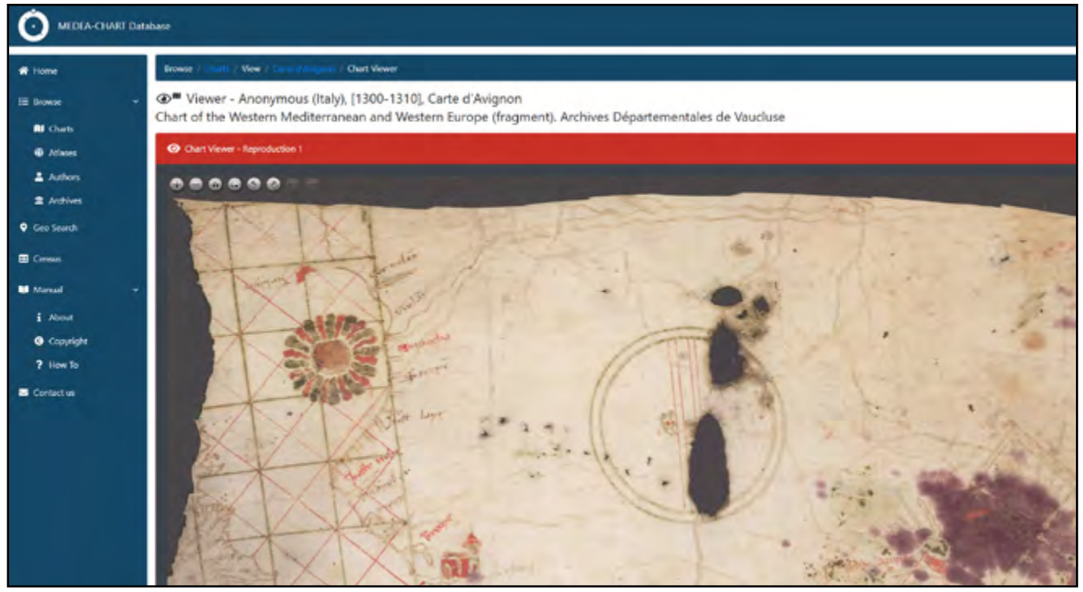
The MEDEA-CHART Database is an online free-of-charge information system deicated to old nautical charts. It was created under the European Research Council project MEDEA-CHART and is hosted by the University of Lisbon.
The system holds digital images and information about medieval and early modern nautical charts and atlases. Its scope is therefore in principle the same as that of Dick Pflederer's Census. Each chart and atlas has an entry that contains the same information as in the Census, including Pflederer's single identifier.
In addition, MEDEA-CHART provides images of each item, whenever they have been made available online. It also indicates the geographical scope of each chart and atlas sheet, which can be very helpful to do searches such as 'all seventeenth-century charts that show Madagascar'. These two functionalities greatly expand what would be possible to do with the Census alone. On the other hand, MEDEA-CHART does not allow the user to export the database or search results as spreadsheets, which means that the kind of quantitative analysis described here is not directly possible. For that, Pflederer's Excel file remains essential.



Screen capture of the MEDEA-CHART website showing the Carte d'Avignon.

Detail of the atlas's nautical-style world map showing the peninsula of California.

Coat of arms drawn in the newly discovered atlas.

Agnese atlas owned by Philip II emerges in Spain!

A hitherto unknown nautical atlas attributed to Battista Agnese has surfaced in Spain. According to local media, a British citizen who was trying to smuggle the precious object out of the country was arrested by the Spanish police. The atlas was confiscated and has been donated to the Biblioteca Nacional de España (BNE), which has made digital images available through its website.

The work consists of fourteen paper sheets, nine of which are nautical-style charts, one is an oval world map and another is a hemisphere on a globular projection. The other sheets contain cosmographical diagrams and tables and a crest. There is no signature or date on any of the sheets, but the style is very similar to Agnese's other atlases.

According to an unpublished report authored by Professor José Luis Gonzalo Sánchez-Molero, this atlas must be the 'book of cosmography' that Spanish ambassador Diego Hurtado de Mendoza sent from Venice to Prince Philip (the future Philip II of Spain) in 1546 or 1547. Payment for the atlas is recorded in an accounting log. This would explain the crest drawn in the atlas, which he identifies as the coat of arms of the prince. The date is also consistent with the presence of California in several of the maps.

Professor Gonzalo also writes that this 'book of cosmography' was recorded in the catalogue of the Royal Library at the Alcázar of Madrid and was earmarked to be sent to the new library at El Escorial in 1611. However for some reason it was never sent there. The binding, which Gonzalo attributes to a Gabriel Gómez Martín (1751–1818), would indicate that the atlas was still at the Royal Palace around 1800.

Numerous questions remain. Nothing is known about the whereabouts of the atlas for the last two centuries. Where was it kept? How did it come into the hands of a British smuggler? When precisely? Nothing has been said either about the fate of the smuggler.

In any case, this is an important discovery!

Aside from the estimated sale price of EUR 2 million quoted by the press, and from the fact that until now only one other atlas by Agnese has been held in Spain, this particular atlas has major historical value because of its owner. This was one of the works that may have shaped Philip II's global geographical knowledge when he was around twenty years old, before he became the ruler of an empire 'on which the sun never sets'.

Extract from the Digital atlas:
Agnese, Battista (m. 1564)
REF. :bdh0000258583
© BIBLIOTECA NACIONAL DE ESPAÑA

Luis A. Robles Macías
editor@bimcc.org

Obituary

GÉRARD BOUVIN

13 August 1958 – 22 August 2021

Gérard passed away the morning of 22 August after a long illness.

Most of the readers of the Map Room of the Royal Library of Belgium will remember the Rock-'n-Roll aficionado who helped them in their research for old maps.

For almost 20 years Gérard worked as a cataloguer of old maps. He was appreciated for his deep knowledge of the map collection which he shared with us all with great generosity. The members of the Brussels Map Circle had the opportunity of attending various Map Afternoons where Gérard presented a rare map from the collection.

In 2007 he worked on the Europalia exhibition Formatting Europe held at the Royal Library and in 2015 he mounted the small exhibition for the presentation of the volume Vlaanderen in 100 Kaarten.

Gérard was a well-read person who liked travelling to faraway countries.

He will be missed.

Activity Report

Due to the pandemic crisis most of our activities had to be suspended or cancelled from 16 March onwards. Activities focused on the publication of the Newsletter and the webpage's update.

However, before the first lockdown, the Map Circle organised on 6 February a conference by Dr Jan Trachet in the Map Room of the Royal Library. His paper discussed the archaeological analysis of the medieval landscape around Bruges on the basis of Pieter Pourbus' work.

As usual, three issues of the Newsletter were published (see nos. 66-68 of Maps in History). For the September issue of 2020 Luis Robles Macías took over from Jean-Louis Renteux as editor of the Circle's Newsletter, but Jean-Louis remained very active in the whole production process. Paul De Candt was again responsible for the lay-out. Pierre Parmentier coordinated the update of the Circle's website and created the website for the 38th IMCoS International Symposium, that will be hosted conjointly by the Royal Library and the Brussels Map Circle from 11 to 14 October 2021 (https://imcos2021brussels.org). Twelve digital short newsletters, called *WhatsMap?*, made by Chris Van Hauwaert, informed members about the latest news in the field of history of mapping.
The Annual General Assembly was organised electronically on 5 June. Three new members were elected to the Executive Committee: Marie-Anne Dage, Luis Robles and Wouter Bracke. The full report is published in the September issue of Maps in History.

The Executive Committee held its first meeting on 22 January to discuss the usual topics as well as the Circle's participation in organizing the IMCoS symposium of 2021. A short meeting of the Executive Committee was held in the Royal Library on 30 September to elect the new president. That day the organizing committee of the IMCoS symposium, also met.
In addition, Members of the Brussels Map Circle will be invited to the opening reception, free of charge (when registering, just use the discount code "IMCOS21-BMCMBR").

Three Milleniums of Measurement of Earth

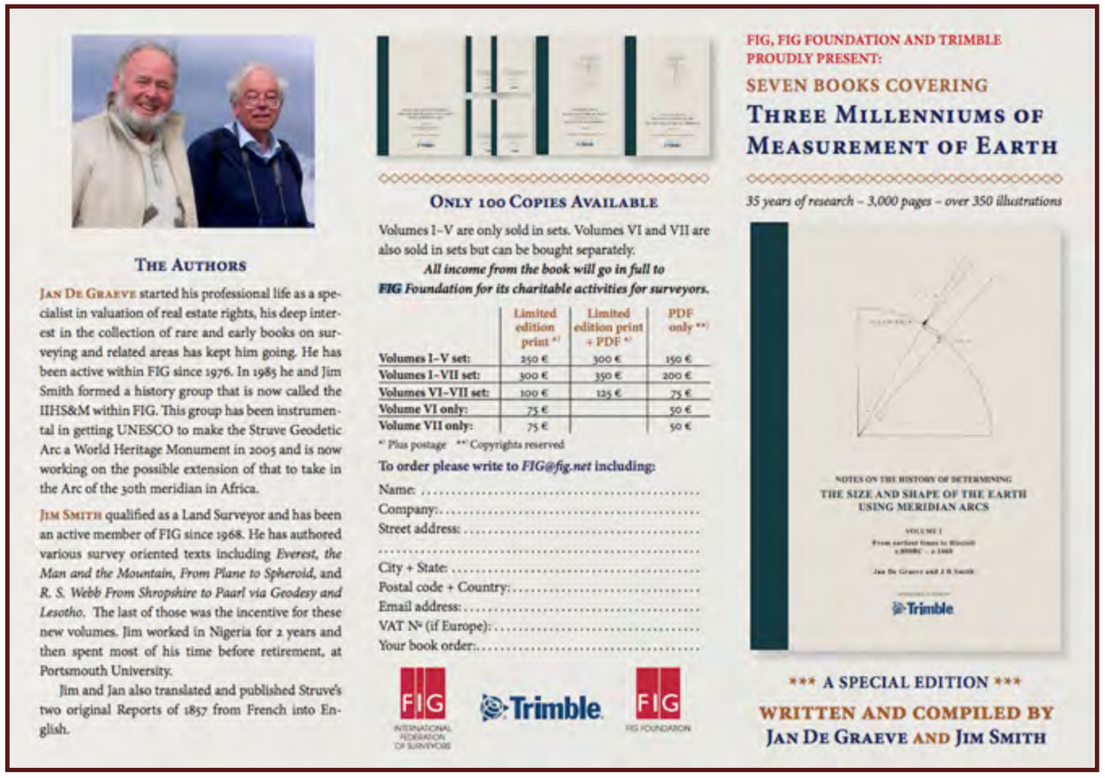
We are delighted to announce that Brussels Map Circle member Jan De Graeve and his English colleague Jim Smith have now completed their long-term research project: 3000 pages in seven volumes, with illustrations and 200 pages of references, on the size and shape of the Earth using meridian measurements, throughout all civilizations and from 800 BCE to just before the space age in the 1960s.

You will remember that Jan and Jim are Director and Honorary Secretary respectively of the International Institute for History & Measurement within the Fédération Internationale des Géomètres (FIG). They were the initiators and promoters for the inclusion of the Struve Geodetic Arc — from Hammerfest in Norway to Izmail in Ukraine near the Black Sea — on UNESCO's World Heritage list.

This they achieved in 2005, as reported in the BIMCC Newsletter No 26.

Their work will aid further research for current and future historians of cartography. They have found a sponsor, Trimble, a firm producing scientific surveying equipment. All proceeds from this monumental work will be donated to the FIG foundation to help future surveyors attend international conferences and help them further their careers by studying for doctorates in their field.

Further details on this flyer:
http://fig.net/organisation/perm/hsm/history_of/history_books_flyer.pdf



38th IMCoS International Symposium

Hosted by the Royal Library of Belgium (KBR)

and the Brussels Map Circle (BIMCC)

(11 – 14 October 2021, Brussels, Belgium)

IMCoS Symposium Talk Abstracts

At the time of writing, COVID-19 restrictions are gradually being lifted in Belgium and it seems likely that it will be possible to hold the Symposium, physically, at the Royal Library, as planned.

Strict conditions still apply to visitors travelling from overseas and might cause a number of participants (e.g. from the UK and USA) to cancel their trip. However, the majority of registered participants come from Belgium and neighbouring EU countries and will not be affected; the Organising Committee is thus continuing with the preparation of the Symposium. In particular, it is investigating the possibility of video-recording the lectures and of making them available on the Internet, for the benefit of those who could not attend physically. Related practical arrangements will be communicated through "WhatsMap?" and ad-hoc e-mailing.

The following abstracts will give you a foretaste of these lectures...

Robert Clancy

The Mapping of the Antarctic Peninsula by European Nations around 1900

Adrien de Gerlache de Gomery (1866-1934), an officer of the Belgian Navy, sailed the Belgica in 1897 to the west coast of the peninsula. In 1941 about 100 of Adrien de Gerlache's maps were given to the Royal Library of Belgium by Marie-Louise de Gerlache, Adrien's daughter and at the time an employee of the Royal Library. Adrien de Gerlache's story is told by Robert Clancy, John Manning and Henk Brolsma in their Mapping Antarctica. A Five Hundred Year Record of Discovery (Springer, 2012). Robert will discuss the Belgian, as well as the French, Swedish and Russian contribution to the mapping of the Antarctic.

Robert Clancy is a retired Professor of Pathology, and currently a Clinical Immunologist and Gastroenterologist. But he is also a well-known map collector, especially of continental masses in the southern hemisphere. He is the author of five books on maps.

Karen De Coene

Darkness there and nothing more? Medieval cartography and the Liber Floridus

The Dark Middle Ages, the idea of the entire Middle Ages as a time of intellectual darkness has fortunately been rejected and it is now a common assumption that the centuries following the collapse of the Roman Empire were characterized by continuity, preservation, cultural renewal of the Roman cultural heritage. Thinking was actively encouraged in many medieval universities, averse to absolute religious uniformity. Lecturers in universities commonly advanced the idea that the earth was a sphere and even discussed its approximate circumference. Pre- and early-Christian assumptions were reconsidered within the light of the contemporary medieval world.

Which place does cartography occupy in this medieval world? Wary of the anachronistic use of the word map for medieval *mappae mundi*, this presentation discusses their origin, composition and function by examining one particular example, the maps in the *Liber Floridus* of Lambert of Saint-Omer. The oldest copy of this so-called medieval encyclopaedia is held at the Ghent University Library.

Karen De Coene is an academic researcher specialising in medieval culture and historical cartography, and is currently employed as an expert at Arenberg Auctions, Brussels.

Joost Depuydt

Abraham Ortelius: The Man and his World

Abraham Ortelius (1527-1598) was born and raised in Antwerp. During the sixteenth century this port city became a major commercial metropolis, excelling in the trade of artistic products and hosting one of the most largest book markets in Europe. The author of the *Theatrum orbis terrarum,* the first modern atlas, started his professional career as a colourist of maps, but soon he became a dealer not only in maps and prints, but also in books and antiquities. He travelled extensively, despite the difficult conditions of the Eighty Years' War. Both his *Album amicorum* and his correspondence attest to the size and importance of his network. Although a substantial part of his correspondence has already been published, there are still a lot of letters waiting to be found.

Joost Depuydt has been Curator of Typographical and Technical Collections at the Plantin-Moretus Museum in Antwerp (Belgium) since the summer of 2018. Between 2007 and 2018 he was Curator of Special Collections at the FelixArchief / Antwerp City Archives. In that capacity he was responsible for the organisation of the 26th International Conference on the History of Cartography (ICHC 2015) in Antwerp. The subject matter of his publications ranges from Abraham Ortelius to early maps of Mexico and of South America to digitisation of early maps. He has curated various exhibitions on the history of cartography.

Hans Kok

Civil Aviation Maps: from verbal notes to full-fledged paper charts and digital death?

The development of aviation maps closely parallels the process as we know it from the maritime industry, where it started in the 15th century, if not before. The pace, however, was materially faster in aviation, where it took roughly only one hundred years to achieve and complete the same process. Initially, the new airline companies had to use maps prepared from topographical maps, later they produced their own maps, as Governments were neither organised nor equipped to provide dedicated aviation maps. Government agencies were established with phase-lag to aviation industry development but have meanwhile reached an adequate level of data-procurement, certification and oversight. The most interesting period, in my view, is post-World War II, where development. triggered by military requirements, seeped through to enable civil aviation to operate long range flights over oceans and deserts. The range of which aircraft were capable by then, needed a long-range navigation capability. Progressing from visual navigation in ground contact to celestial and radio-navigation, terminating as automated navigation, incorporated into digital flight management and onboard control systems. Current digital techniques provide an interface for worldwide automated Air Traffic Control systems, making paper maps in the cockpit superfluous, as they are presented on cockpit monitors instead of hardcopy.

Hans Kok, a past chairman of the IMCoS Executive Committee, has compiled a large collection of mainly seventeenth century maps and atlases. He has published articles and co-authored two books on these subjects, triggered by his interest in navigation techniques. A retired airline captain and Deputy Director of Flight Crew Training for KLM Royal Dutch Airlines, and holder of a Flight Navigator Certificate as well, he started collecting aviation maps as a sideline when these were not yet considered collectable.

Pieter Martens

Intersections of military architecture and cartography in the Low Countries (1540-1625), from Jacob van Deventer to Pierre Le Poivre

The city atlas by Jacob van Deventer (ca. 1558-1575) and the atlas by Pierre Le Poivre (ca. 1615-1624) are undoubtedly among the KBR's most important cartographic heirlooms. Both are related, in different ways, to military architecture. In this paper the speaker will show that the practice of military architecture and engineering (which involved the construction of fortifications as well as the conduct of sieges) was indeed a major driving force behind the development of (urban) cartography in the sixteenth-century Low Countries. He will discuss the multiple connections between, on the one hand, fortification drawings and depictions of sieges, and, on the other, the earliest town plans, city views and topographical maps.

Pieter Martens is Assistant Professor of Architectural History at the Vrije Universiteit Brussel (VUB). His research focuses on sixteenth-century military architecture, engineering, siege warfare, and urban iconography. His recent publications related to cartography include a short biography of Le Poivre (*Nationaal Biografisch Woordenboek,* 2014), a book chapter on printed portraits of cities under siege (*Ad vivum?*, 2019), and journal articles on Hieronymus Cock's view of Antwerp (*Simiolus*,2017) and on early fortification drawings and city plans (*Journal of the Society of Architectural Historians*, 2019).

Jan Parmentier

The Ostend East India Company 1722-1742

Dr Jan Parmentier specialises in maritime and overseas history, mainly the Early Modern period. For the last twelve years he has been a researcher and curator at the Museum aan de Stroom (MAS) in Antwerp ,responsible for the maritime collection. Before he worked as lecturer at the University of Ghent. At the MAS in 2013 he was curator of the temporary exhibition *Bonaparte aan de Schelde. Antwerpen in een Franse stroomversnelling* and in 2015 curator of the exhibition *The World in a Mirror.* He also participated in the Europalia India exhibition Indomania and was co-curator of the Europalia-exhibition Istanbul – Antwerp. He is curently guest curator of the exhibition *Een Wonderlycke Voyagie* in the Sint Peters Abbey in Ghent. He has published on subjects such as European East India- and Guinea-trade, cartography and navigation, Flemish and Irish trade networks, travel history, fishery and whaling.

Luis Robles

Northern Europe in sixteenth-century nautical cartography: a comprehensive review

It is well known that, between the 1460s and the 1530s, the depiction of Scandinavia on maps experienced drastic changes, with new models introduced by authors such as Nicolaus Germanus and Olaus Magnus. Twentieth-century historians tended to recount this evolution in a positivist fashion, as a tale of successive improvements by which mapmakers eventually found the 'correct' shape of the region.
However, a survey of maps from the early modern period, mainly focused on nautical-style charts, reveals that the situation was far more complex. Many different models of Scandinavia coexisted for decades, with 'archaic' representations circulating alongside more 'modern' ones until at least 1600. Some mapmaking centres tended to favour certain specific models, while others opted for ignoring Scandinavia altogether.

Luis Robles has a professional background in engineering and knowledge management, and is currently a PhD candidate in History at Université Libre de Bruxelles (ULB), where he is studying the life and works of sixteenth-century mapmaker Juan Vespucci. He has published research on the history of cartography and geographical discoveries. Since 2020 he has been the Editor of the Brussels Map Circle's Newsletter *Maps in History*.

Gábor Timár

From the 1761 transit of Venus to the Second Military Survey – the century of the Habsburg Empire in cartography

During the Seven Years War (1756–1763), in which the Habsburgs were allies of France, important surveying and cartographic knowhow was transferred from Paris to Vienna. The encounter of César-François Cassini de Thury, the author of the Carte de France, and Father Joseph Liesganig, the later head of the Austrian surveying efforts, on 6 June 1761 in order to observe the transit of Venus, is emblematic in this respect. The Austrians applied Cassini's method, but on a scale three times larger (1:28 800, instead of the original French 1:86 400), in two successive military surveys, one in the late 1700s and the other in the first half and the middle of the 1800s.
The main contribution of the Habsburg surveying project to mapping is the use of a flattened ellipsoid, instead of the sphere, to model the earth. The Austrian efforts can be considered as the best survey technology at the time, before the geodetic adjustment methods invented by the Germans in the middle of the nineteenth century. Thus, the years from the 1760s to the 1860s can be characterised as the *Austrian century* in the history of cartography, which also includes the survey by Count de Ferraris of the Austrian Netherlands on a scale of 1:11 520 (1770–78).

Gábor Timár is Professor of Geophysics at the Eötvös Loránd University (ELTE) of Budapest, Hungary. His research interests are the modelling of the shape of the Earth and its applications in historical cartography, and environmental analyses involving old maps. He is the scientific leader of the MAPIRE project, presenting mostly European maps from 1750 to 1950 in geo-referenced form, as overlays of modern ones.

Koenraad Van Cleempoel

Gerard Mercator as a maker of Scientific Instruments: aspects of materialised knowledge

Gerard Mercator holds a unique position in the history of cartography; his superb maps still surprise us with their accuracy and beauty. In this presentation, Koenraad will focus on the early, formative years of Mercator in Leuven [Louvain], Belgium and his collaboration with Gemma Frisius. His research into refining existing scientific instruments — such as astrolabes — as well as his designs for newly invented ones — such as the astronomical rings — will be discussed. Mercator will be framed as a *superior artisan* blurring the boundaries between theory and practice. The extreme refinement and accuracy of his innovative instruments laid the basis for the so-called *Louvain School* and they also relate to his methodology as a cartographer.

Koenraad Van Cleempoel studied art history in Leuven, Madrid and London, where he received a PhD at the Warburg Institute. He is a professor of Art History at the faculty of Architecture in Hasselt (Belgium). He is interested in the material culture of the Renaissance and scientific instruments in particular. He catalogued the collection of astrolabes at the National Maritime Museum in Greenwich (Oxford University Press). In 2017 he organised a seminar on Renaissance instruments at the University of California, Berkeley.

Jan Vandersmissen

The role of geography and cartography in Leopold II's imperialist ventures around the time of the Berlin Conference (1884-1885)

From the very moment they were founded in 1876 the geographical societies of Antwerp and Brussels played a role as propaganda tools for Leopold II's ventures in Central Africa: they invited explorers to send in papers or give lectures, praised the initiatives of royal companies such as the *Association internationale africaine* (AIA), the *Comité d'études du Haut-Congo* (CEHC) and the *Association internationale du Congo* (AIC), and published in their journals numerous maps of these companies' exploratory missions. As the geopolitical tensions between the European powers increased, the nature of geography's involvement with Leopold's actions changed. In the early 1880s, at a time when Leopold's companies came under pressure, cartography was explicitly used as a means of underlining

Leopold's territorial claims. This paper sheds light on the specific cases of the cartographic representations of the Kouilou-Niari Basin, where the claims made by Leopold's AIC were disputed by France since 1883, and of the valleys of rivers flowing into the Congo via the north side (right bank). These maps strikingly express, through their specific visual discourse, the intertwining of cartography with imperial agendas in the run-up to the Berlin Conference in 1884–1885. We also investigate how in addition to the geographical societies, a third actor — the geographic periodical *Le Mouvement géographique* — became involved in the debates about territorial claims via the continuous publication of ever-changing maps of disputed territories.

Jan Vandersmissen is researcher and lecturer at Ghent University (UGent). He is interested in the history of science and technology in imperial contexts, more in particular in the scientific and technological aspects of expansionist projects developed by various European nations, as well as in the knowledge transfers that resulted from these undertakings. He has published extensively on issues related to the world of travellers, prospectors, geographers, cartographers and environmentalists from the eighteenth to the twentieth centuries.

Geert Vanpaemel

Between Heaven and Earth. Michiel Florent van Langren and his Map of the Moon

In 1645 the Brussels cartographer and engineer Michiel Florent van Langren (1598–1675) issued a 1-sheet printed map of the moon, *Plenilunii Lumina Austriaca Philippica*. The map underscored van Langren's project to use the phases of the moon as a means to determine longitude. The *Plenilunium* with its toponomy of European noblemen and scientists, discussed at length in his correspondence with Erycius Puteanus, which is kept in the Manuscript Room of the Royal Library of Belgium, provides an unique source for exploring the scientific community to which van Langren aspired to belong. Geert will present the results of his study of the toponomy.

Geert Vanpaemel is professor of History of Science at the Catholic University of Leuven [Louvain] (KU Leuven). He has published mainly on the post-1500 history of science in Belgium. With Dirk De Bock he has recently published *Rods, Sets and Arrows. The Rise and Fall of Modern Mathematics in Belgium* (Springer, 2019).
In 2015 he co-edited *Embattled Territory. The Circulation of Knowledge in the Spanish Netherlands* (Academia Press).

Making Maps in History

This issue of Maps in History was coordinated and edited by Luis Robles.
Paul De Candt did the lay-out, based on an initial design by David Raes.
Contents have been checked by the Editorial Committee comprising Jean-Louis Renteux, Nicola Boothby, Wouter Bracke, Francis Herbert, Pierre Parmentier and Luis Robles.

The Brussels Map Circle

AIMS AND FUNCTIONS

The Circle was created, as the Brussels International Map Collectors' Circle (BIMCC), in 1998 by Wulf Bodenstein.

Now known as the Brussels Map Circle, it is a non-profit making association under Belgian law (asbl/vzw 0464 423 627).

Its aims are to:

1. Provide an informal and convivial forum for all those with a specialist interest in maps, atlases, town views and books with maps, be they collectors, academics, antiquarians, or simply interested in the subject
2. Organise lectures on various aspects of historical cartography, on regions of cartographical interest, on documentation, paper conservation and related subjects
3. Organise visits to exhibitions, and to libraries and institutions holding important map and atlas collections.

In order to achieve these aims, the Circle organises the following annual events:

- A MAP-AFTERNOON in March or April, bringing together all those interested in maps and atlases for an informal chat about an item from their collection – an ideal opportunity to get to know the Circle.
- An EXCURSION to a map collection or exhibition.
- An INTERNATIONAL CONFERENCE on a specific major topic in December.

The Brussels Map Circle also publishes *Maps in History* (formerly known as *BIMCC Newsletter)*, three times a year and a monthly electronic news bulletin *'WhatsMap?'*. It also maintains a website.
Information on events and exhibitions to be placed on the calendar of our website and announced in WhatsMap? should be sent to webmaster@bimcc.org

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BECOMING (AND STAYING) A MEMBER

Members receive three issues of our magazine 'Maps in History' per annum and have free admission to most of the Circle's events.
Non-Members pay full rates.
Annual Membership: EUR 40.00,
Students and Juniors under 25:
EUR 15.00.
To become (and stay!) a Member, please pay the Membership dues EXCLUSIVELY by bank transfer (no cheques please) to our bank account:
IBAN BE52 0682 4754 2209
BIC: GKCCBEBB and notify the Membership Secretary (treasurer@bimcc.org) indicating your name and address.

MAPS IN HISTORY

The Brussels Map Circle currently publishes three issues per year. It is distributed, not only to Members of the Circle, but also to key institutions (universities, libraries) and to personalities active in the field of the history of cartography, located in 16 different countries.
Please submit articles and contributions to the editor (e-mail: editor@bimcc.org) by the following deadlines:

- 15 March for the May edition.
- 15 July for the September edition.
- 15 Nov. for the January edition.

Items presented for publication are submitted to the approval of the Editorial Committee.
Signed articles and reviews reflect solely the opinions of the author.