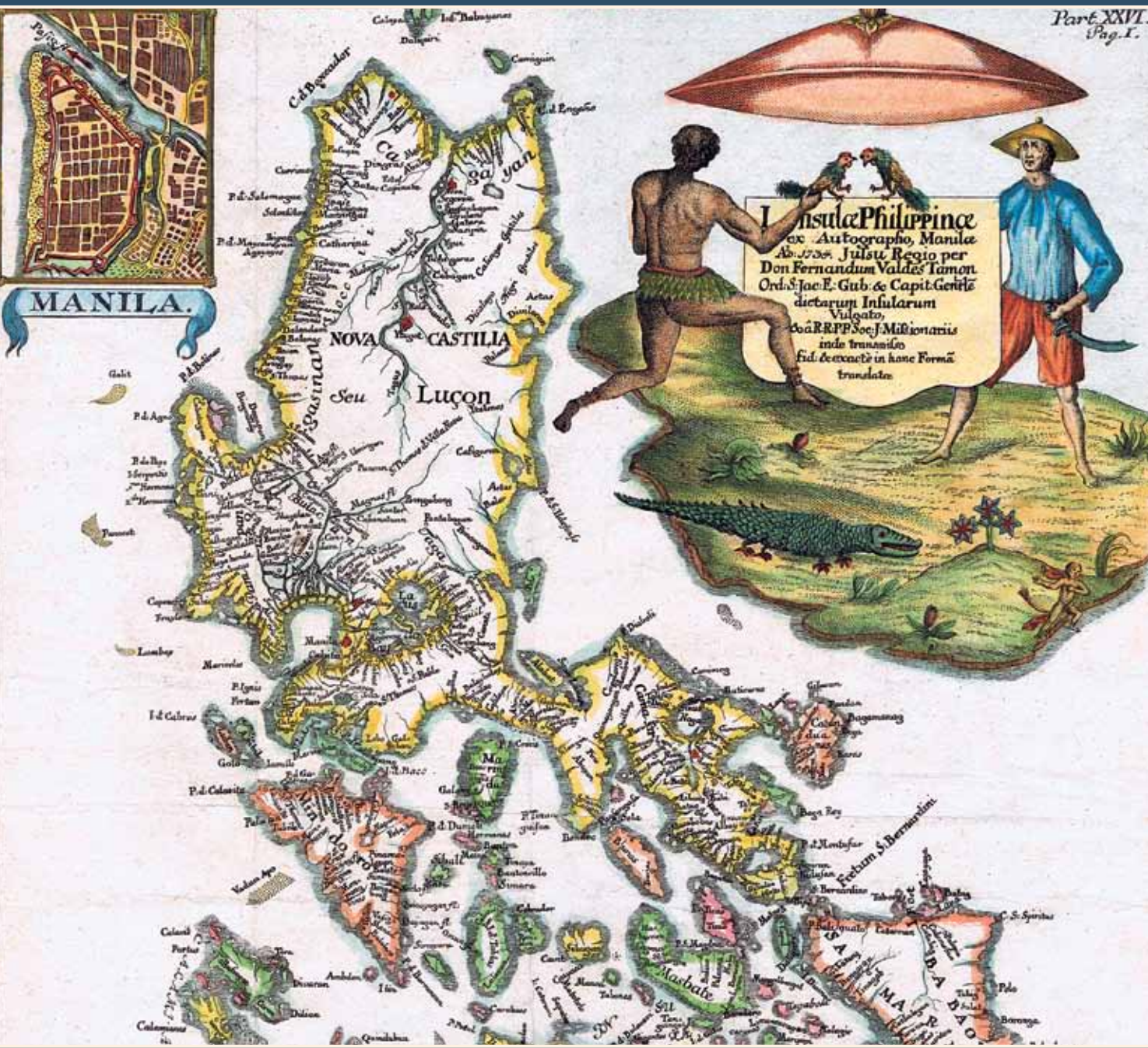
INTERNATIONAL MAP COLLECTORS' SOCIETY

IMCS JOURNAL

MARCH 2018 No.152



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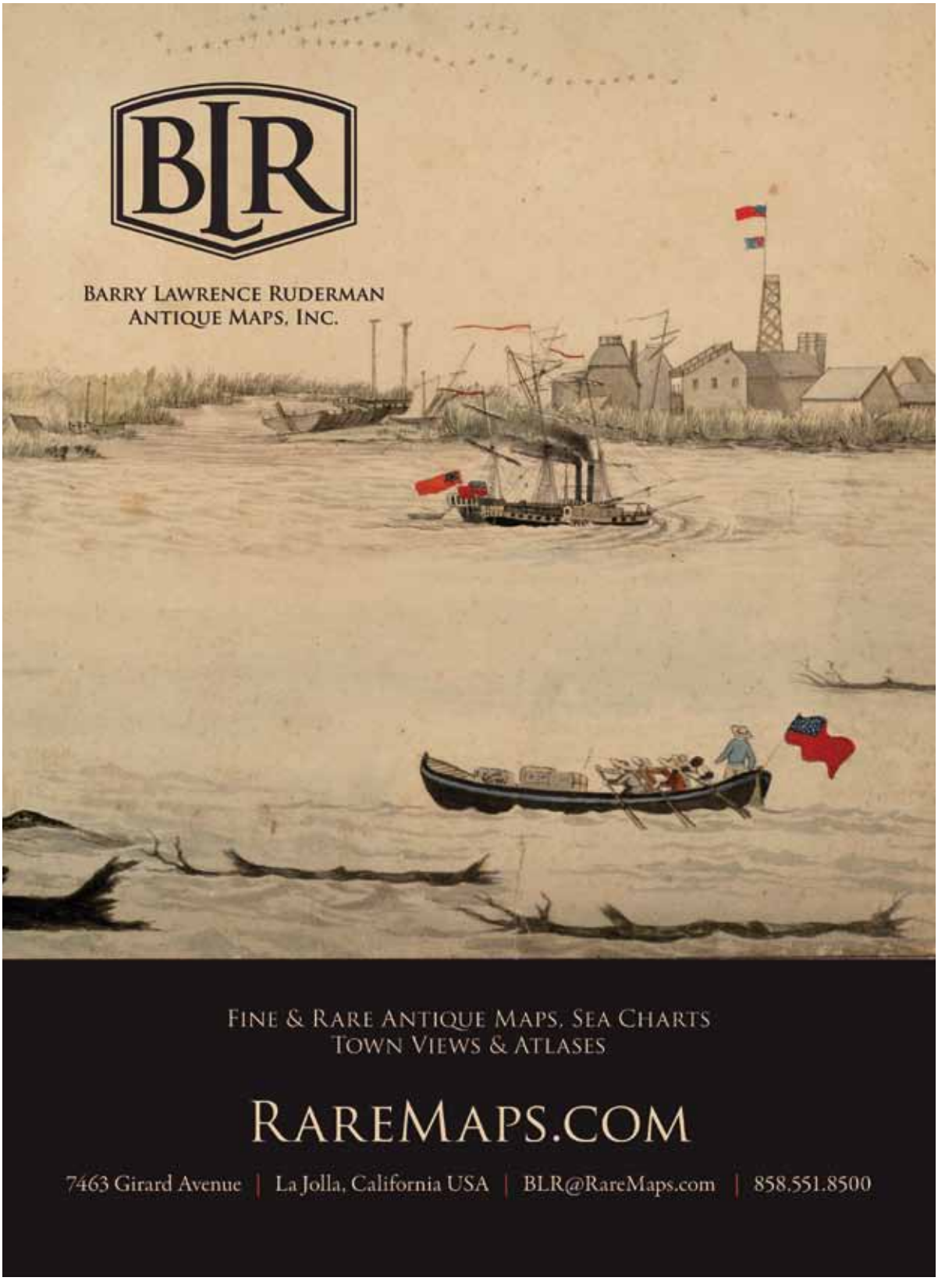


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Front cover **Detail from 'Insulae Philippinae', 1748 by Leopold Johann Kaliwoda and Fernando Valdes Tamon after Murillo de Velarde, 1744, (2nd edition). Courtesy Rudolf J. H. Lietz collection, Gallery of Prints, Manila.**


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A LETTER FROM THE CHAIRMAN

Hans Kok

Happy New Year has meanwhile turned into just yet another year with new problems to be tackled and new chances to be taken up. IMCoS as a Society is stable and financially sound. The website is operational with a few more items 'under construction', such as a feature allowing registration and payment for events. Dr Mike Sweeting has agreed to join the Executive Committee; his international and marketing experience will be put to good use. Plans for the IMCoS Cambridge event are finalised and we are looking forward to a good attendance. You are kindly invited to register for our dual Manila/Hong Kong International Symposium in October; choosing either one or both in combination is completely up to you. Details of both can be accessed via our website www.imcos.org with a direct link to the local organisers. Either destination will offer new maps and new map history to enjoy, as well as a fine chance of adding some local touring, that you might not have planned without the Symposium as an incentive.

The historical map 'economy' is under full steam in India and the Far East, a bit *sur place* in Europe and doing rather well in North America; for Australia I am short on trade information, but it does not mean there is no activity. A large 2020 conference celebrating the 250th anniversary of Cook's discovery of the east coast of Australia is in the making 'down-under'.

A shift has been noticeable for some time now, away from the old well-known system of buying maps towards Internet, eBay and Catawiki. However, the collector of old seems to remain loyal to his or her network of dealer-suppliers. The move to online purchasing does raise the interest of younger buyers. It is hoped that they will turn into collectors in due time. I realise, that young people with mortgages and families may have more pressing financial demands and therefore may be attracted by the better-priced maps from the nineteenth century. Cartoon maps, themselves of a later origin anyway, seem to interest those more aware of recent history than of the days of Enlightenment. Aviation maps seem to come under the same heading. Genealogy appears to be more in vogue today than national history, maybe. Nevertheless it still directs interest to historical events and images thereof. Thinking back to when I was in my twenties, I realised then that a sense of history needs time to mature, and it goes without saying that growing older means having ever less future and ever more past, with interests being re-directed accordingly. A positive signal for the future of map collecting is that the number of publications worldwide dedicated to the subject is higher than ever before. When all these books, magazines and articles find a market waiting for them, historical cartography must be able to remain rooted firmly among competing hobbies and interests.



Antonio Lafreri [Carta Marina] Olavs Got. Benigno Lectori... 1572.

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WELCOME TO OUR NEW MEMBERS

George Adamson, Scotland
Collection interest: 17th and 18th century Scotland

Kevin Bland, UK
Collection interest: UK & Ireland Ordnance Survey, war maps, canals, rivers, railways, city maps principally London, advertising maps, fox hunting maps

Alexandra Constantine, UK
Collection interest: 18th-century maps

Kevin Cullen, USA

Andrew V. Douglas, USA
Collection interest: Early 1600s, international

Alexey Finikov, Russia
Collection interest: Maps of Russia, the North-West region of Russia, views of Novgorod

Cecilie Gasseholm, UK

Michael Hughes, UK
Collection interest: Ireland

Bob Kochtubajda, Canada

Eduardo Loyo, Brazil

Thomas Maxon, Taiwan

Robert Odom, USA
Collection interest: Early and colonial America, Military, early Germanic, American Frontier/West

Curtis Personett, USA
Collection interest: West Africa

David Solheim, USA

Jean-Christophe Staelens, Belgium

Arch Stokes, USA

Gregory Stuhlman, USA

Sungshin Womens University, South Korea

Emmanuel Ticzon, Philippines
Collection interest: Philippine maps

Francesco Trippini, Italy

Reza Yassari, USA
Collection interest: Persia, Caspian Sea, Persian Gulf

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Alternatively, send an email to **Peter Walker** at **financialsecretariat @imcos.org** who can update your details for you.



FROM THE EDITOR'S DESK

Ljiljana Ortolja-Baird

The inclusion of an 'unknown' fifth copy of Martin Waldseemüller's *c.*1507 world map, in the form of a set of gores for a terrestrial globe, at Christie's 13 December 2017 Books and Manuscripts sale was cause for considerable excitement; its sudden withdrawal was cause for even more.

It is rare, and thought to be the first printed globe gores and to show the earliest use of the name 'America' on a printed map. Its infrequent appearance in salerooms attracts a great deal of interest from experts and collectors worldwide. A copy of the aforementioned gores last surfaced in the summer of 2005, also at Christie's, and sold for £545,600. The December 2017 sale promised the vendor a good return on the map he had found among the papers of a deceased relative.

The Christie's consignment was checked against the Kraus-Bavarian State Library copy in Munich, and upon comparing the two, it was found that while the paper was different, the printed image was a perfect match. Christie's did not look further, accepting the veracity of provenance of the Bavarian copy as evidence. However, Alex Clausen, Gallery Director at Barry Lawrence Ruderman Antique Maps, had his doubts and set about comparing it to high-resolution images of the four other known copies (the Hauslab-Liechtenstein copy at Bell University, Minnesota; the Kraus-Bavarian State Library copy; the Offenburg copy; and the copy sold in 2005). Discrepancies were discovered, raising concerns about the authenticity of the 'fifth' copy and the serious possibility of forgery.

Significant in the investigation was Clausen's discovery of a tiny spot of dirt, partially obliterating the top portion of three letters on the University of Minnesota's copy; on the suspect copy this indistinct area had been deleted. Rare book expert Nick Wilding added fuel to the investigation by noting that the Christie's map had a white line in exactly the position where paper had been affixed to the Minnesota map to repair a tear. A print of the map would not have replicated the tear, and the suggestion is that the Christie's map is a reproduction of the Minnesota copy. Sadly, the white line is evident on the Bavarian State Library copy too, throwing its authenticity into question.

The history of cartography has benefitted immensely from the advances made in the field of digital image processing. New techniques provide us a window through which to see beyond the artefact's surface image, enabling us to better understand it and where to place it in history. But technology is a double-edged sword. While it offers the possibility of exciting new discoveries, it also enables those less principally motivated with more sophisticated tools to hoodwink an unsuspecting market.

IMCoS MATTERS

DATES FOR YOUR DIARY

12–13 April 2018
IMCoS Visit to Cambridge

Registration is now open on the IMCoS website (**www.imcos.org**). The attendance number is limited to twenty-five. The visit will include Emmanuel College, Cambridge University Library, Scott Polar Research Institute and the Whipple Museum. In addition, Dr Sarah Bendall will give a lecture entitled 'Oxford and Cambridge Colleges as map-makers and map-users *c.*1550–1850'.

The cost of the visit will be £35 per head. To register please contact IMCoS Financial Secretariat (**financialsecretariat@imcos.org**). Participants should arrange their own accommodation. The Hilton Hotel has offered IMCoS ten bedrooms with breakfast at a special price for the night of 12 April, on a first come, first served basis. Five of these rooms are singles. To access the offer please go to the IMCoS website. The three-star Ibis hotel by the train station is also recommended. We will be holding our **Collectors' Meeting** in Cambridge on 12 April.

Thursday 12 April
1pm Everyone should meet at The Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1CR. Please be on time and leave suitcases and large bags at your hotel. There will be a guided tour of the museum and a viewing of their maps.
2.30pm Whipple Museum. There will be a guided tour and a talk about the globes and instruments.
4pm Tea at the Hilton Hotel

4.30pm Collectors' Meeting. Please bring an item of interest to show and discuss, either on a memory stick or the real thing! The Collectors' Meeting will be held at the Hilton Hotel. Attendance will cost £15 per head. As we are attending the Whipple Museum, which has some fine globes, it has been suggested that the theme for this year's meeting is globes and globe gores. However, as always we welcome all contributions to the event. So please do bring a favourite cartographic item that you can share with us. Please email details of your items that you will be presenting to Francis Herbert (francis443herbert@btinternet.com) or Ljiljana (Ljiljana.editor@gmail.com) and let us know if you need any help with information about your pieces.

Friday 13 April
10am Visit and lecture at Emmanuel College
Lunch free
1.30pm Transport to the Cambridge University Library (if required)
2pm Visit to the University Library

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8 June 2018
IMCoS Annual Dinner & Malcolm Young Lecture

The event will be held at the Civil Service Club, 13–15 Great Scotland Yard, London SW1A 2HJ. Our speaker will be Alan Ereira. His recent publication *The Nine Lives of John Ogilby, Britain's Master Map Maker and his Secrets* will be the inspiration for his talk. See page 57 for a review of his book.



Alan is a historian and award-winning documentary film-maker. He has worked extensively with the isolated Kogi people of the Sierra Nevada de Santa Marta, Colombia, perhaps the last un-acculturated high civilisation of pre-Columbian America, who inspired his study of seventeenth-century England. He is currently a Professor of Practice at the University of Wales, Trinity St. David.

9 June 2018
IMCoS Annual General Meeting

9.30 for 10am start (Doors will be open at 9.30am) in the Lowther Room, the Royal Geographical Society (with IBG), 1 Kensington Gore, London SW7 2AR.

9–10 June 2018
London Map Fair

will be held at the Royal Geographical Society (with IBG), 1 Kensington Gore, London SW7 2AR. Saturday 9 June: 12pm to 7pm / Sunday 10 June: 10am to 6pm



INTERNATIONAL MAP COLLECTORS' SOCIETY

IMCoS

MANILA - HONG KONG SYMPOSIUM

14–20 October 2018

36th International IMCoS Symposium 2018

The 36th International IMCoS Symposium 2018 is a two-part event. It will open in Manila on Sunday 14 October and continue until Wednesday 17 October. The Hong Kong part runs from Friday 19th to Saturday 20th. Thursday 18th has been assigned as a travel day. Each destination will have its own registration and registration fee.

Please note: the programmes for both destinations are still being finalised and are therefore subject to change. Please check the destination websites (Manila www.imcos-2018-manila.com) (Hong Kong https://tinyurl.com/imcos-2018-hk) or the IMCoS website regularly for updates.

14–17 October
Manila: 'Insulae Indiae Orientalis'

The Symposium venue in Manila is the **Ayala Museum**, located in Makati City, the foremost financial centre of the Philippines. It houses ethnographic and archaeological exhibits on Filipino culture, art, and history.

Sunday 14 October, Manila
IMCoS Manila Symposium registration and welcome reception cocktails

Monday 15 October, Manila
Morning lectures:
Jose Rizal, the National Hero and his Significance on the Philippines and Beyond by Dr Ambeth Ocampo

Murillo Velarde, the Significance of this Philippine-made Map by Dr Carlos Madrid

The Maggiolo Mystery – a Failed Proposal for Peace in a 1531 Portolan by Daniel Crouch

Afternoon excursion to the Ayala Museum for a viewing of the exhibition 'Insulae Indiae Orientalis'. Early evening visit to the Gallery of Prints

Tuesday 16 October, Manila
Morning lectures:
The Philippines in Antique Chinese Maps by Dr Richard Pegg

Berghaus Map of the Philippines and his Unfinished Atlas of Asia by R.J.H. Lietz

Five Maps of the Philippines Ferdinand Blumentrit by R.J.H. Lietz

Rhubarb and Martini's Strangely Sinister Relationship by Dr Richard Jackson

Afternoon excursion to Lopez Museum Map Collection or Ortigas Foundation: Map Collection and Restoration Center or Library of San Agustin Church

Above **Francois Valentijn, Detail of 'De Stade de Manilha', 1726. Courtesy of Gallery of Prints, Manila.**

Wednesday 17 October, Manila
Morning lectures:
One Step Too Far: The Spanish Lake, the Moluccas, and Terra Australis by Prof. Robert Clancy

Anna D'Almeida (1836–1866), a Modern Tourist in the Far East by Ljiljana Ortolja-Baird

UNCLOS ruling on Phil Seas (South China Sea) & the Involvement of Antique Maps by Justice Antonio Carpio

Afternoon excursion to Malacanang Museum in Manila City or Museo del Galeón (Manila-Acapulco Galleon Museum) in Bay City, Pasay City or University of Sto. Tomas Miguel de Benavides Library, España, Metro Manila.

IMCoS Gala Dinner

Thursday 18 October
Optional transfer to Hong Kong

Registration for Manila only
www.imcos-2018-manila.com

1 Reception cocktails, Gala farewell dinner and 3 Days Symposium with excursions **US $450**
2 Early bird price (till 30 April 2018) **US $390**
3 Reception cocktails and Gala farewell dinner ONLY **US $125**

Options 1 & 2 include pre-Symposium reception, morning coffee/tea on days of Symposium, entry to afternoon visits, and gala dinner; transportation from and back to all venues.

Hotels
The organisers are currently in negotiation with the hotels for preferential rates and the information will be posted on the website (**www.imcos-2018-manila.com**) as soon as the special offers become available.

Optional Tours
Details of these will be available shortly on the website. These could include Taal Volcano, Corregidor Island, Pagsanjan Water Rapids, WW2 Death March in Bataan, Villa Escudero, Pinto Museum, Boraca and Palawan.

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19–20 October
Hong Kong: 'Cultural Encounters in Maps of China'
The Symposium venue in Hong Kong will be the **Maritime Museum**, which is centrally located at Central Pier No 8 on Victoria Harbour.

Thursday 18 October 2018
Welcome drinks and preview of exhibition

Friday 19 October, Hong Kong
Opening addresses by Richard Wesley, Museum Director, HKMM and Hans D. Kok, IMCoS Chairman

Foreign Influence in Chinese Shipping and Evolution of Chinese Sea Charts in the 17th Century by K.L. Tam, Managing Director, Kingstar Shipping Limited and Director, HKMM

Maps, the Mediterranean to the Indian Ocean and Science by Professor Fung Kam-Wing, University of Hong Kong

Morning coffee break

The First Encounter of European and East Asian Cartographies by Dr Mario Cams, Assistant Professor, University of Macau Department of History

Mapping Hong Kong – from Documenting Bandit Hideouts to a Global Destination by Dr Gordian Gaeta, Collector of the long-term loan The Gordian Gaeta Collection at HKMM

Lunch break

Charting the Life of Captain Daniel Ross of the Bombay Marine by Dr Stephen Davies, Honorary Professor, University of Hong Kong

Cross-reference on Maps and Literature, and the Methodology of Researching China Maps by Dr Lin Jeng-yi, Director, Southern Branch of the National Palace Museum, Taipei

Afternoon coffee break

The HKUST Database of Western Maps of China by Dr Marco Caboara, Digital Scholarship and Archives Manager, Lee Shau Kee Library, Hong Kong University of Science and Technology

Panel Discussion: ***Current Trends in Collecting Antique Maps and Charts of Asia***

Symposium dinner

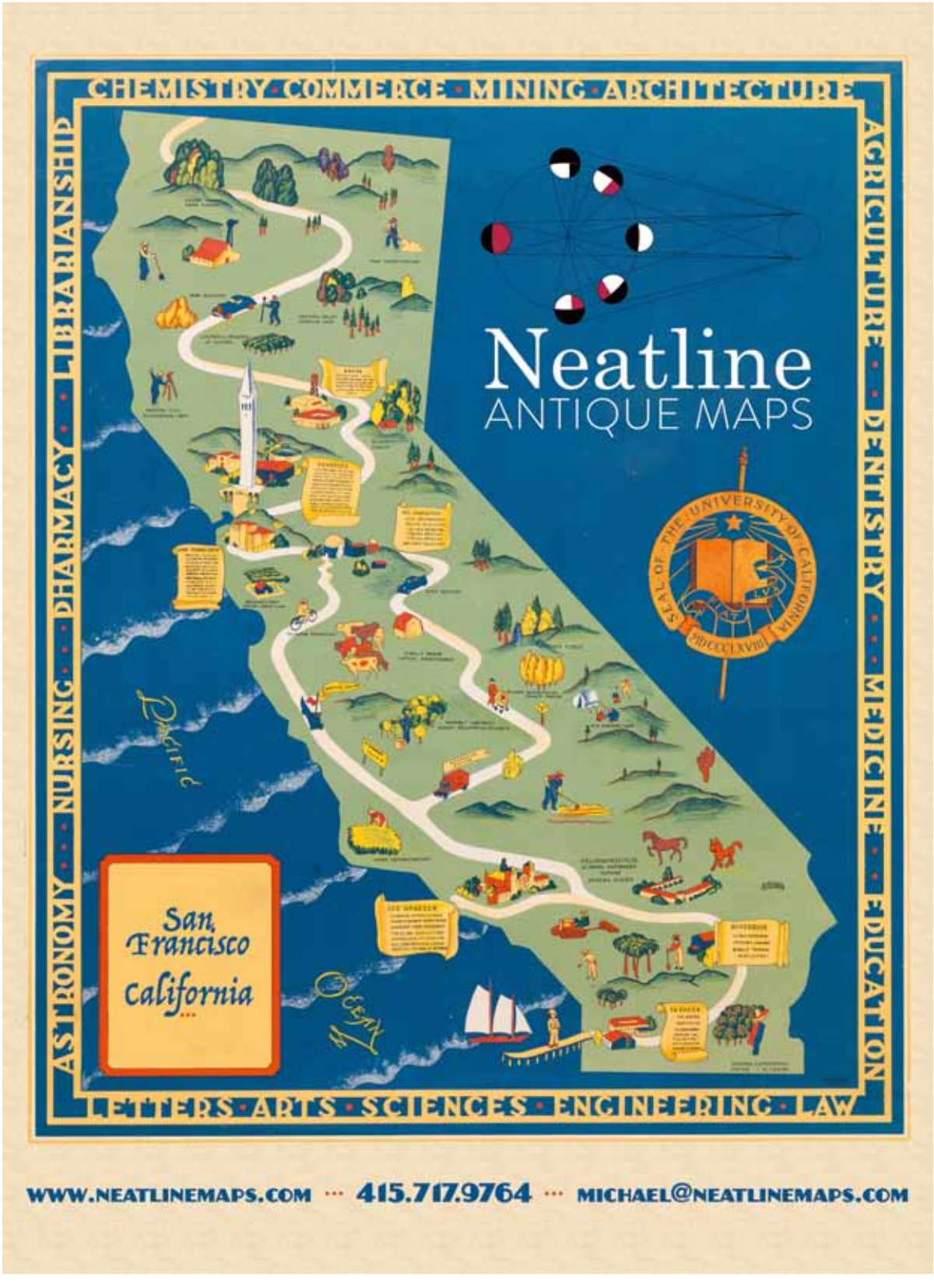
Saturday 20 October 2018
Gallery and Library tour; Presentation at Hong Kong University of Science and Technology
Reception at Wattis Fine Art Gallery, sponsored by Jonathan Wattis

Information and registration for Hong Kong
https://tinyurl.com/imcos-2018-hk

1 Delegate fees: **US $280**
2 Early Bird rate if registered on or before 31 May 2018 **US $220**
Includes welcome drinks on 18 October; café lunch, coffee breaks and Symposium dinner on 19 October, materials and papers of the Symposium, entrance fees for the Museum; transportation to and from the Hong Kong University of Science and Technology on the 20 October.
3 Welcome drinks and Symposium Dinner ONLY: **US $125**

Hotels
Hong Kong Island (Museum side)
Mandarin Oriental (10 min. walk)
iClub Sheung Wan Hotel (30 min, incl. Metro + walk)
Holiday Inn Express Hong Kong SoHo Hotel by IHG (20 min. walk)
Tsim Sha Tsui (Opp. side of harbour from the Museum)
Sheraton (10 min. walk + 10 min. ferry)
The Salisbury – YMCA Hong Kong (10 min. walk + 10 min. ferry)

Above **Detail of 'View of Hong Kong Island and the Harbour', *c.*1846. Courtesy of Wattis Fine Art, Hong Kong.**


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Obituary Dee Longenbaugh (1933–2018)

A long-term member of IMCoS and proprietor of a unique book, print and map shop in Juneau, Alaska, Dee Longenbaugh, died on 9 February. She was also a personal friend of both myself, and many others in the map trade, and will be sadly missed, particularly for her annual visits to London to buy stock and attend mapping events.

After her husband was killed in a tragic accident she brought up her four children alone in Alaska and later became an inveterate traveller visiting many countries of the world. She was also a great conversationalist and it was on one of her visits to England that she met Dr Helen Wallis of The British Library and Eila Campbell of Birkbeck College, London who became her friends and persuaded her to join IMCoS. She said, "They made me feel so welcome I happily became accustomed to attending annual meetings of IMCoS in various parts of the world."



In 1977 she opened her bookshop The Observatory in Juneau, Alaska, which ran until 2016. The shop sold antique maps and antiquarian books, and was a popular stopping off place for passengers of cruise ships. The store, which was advertised by Dee in both *The Map Collector* and the *IMCoS Journal* was also known for giving away free cookies! Dee was also well known for her broadcasts on Alaska radio and for her many articles on discoveries and history particularly of that area. In 2013 IMCoS held their international symposium in Fairbanks, Alaska where Dee was present and helped with its organisation.

Her funeral service was held in Sitka. A memorial service will take place at the Holy Trinity Episcopal Church in Juneau in May.

Valerie Newby (formerly Scott)

REFLECTIONS OF A MAP DEALER

by Dee Longenbaugh

This is a lightly abridged version of an article Dee wrote for the IMCoS Journal*, No. 106, Autumn 2006.*

I got into the map business in a rather odd way. The year was 1979 and I was on my first buying trip to London for my bookstore. All I knew about old maps was that I knew nothing about them. The reason for the journey was to return to Alaska with loads of books by, and on British explorers, Captains Cook and Vancouver leading the pack. I quickly discovered that Cook, Vancouver and the early English fur traders were even more popular in their home country than in Alaska.

So, two weeks in England and nothing to buy. I had lunch one day in an odd little semi-underground cafe near Fleet Street, and found a discarded printed sheet about maps and map collectors. One address, that of J.A.L. Franks on Fetter Lane, seemed to be nearby. A pleasant older man was the owner, and the shop seemed to be dedicated to old stamps, but a query about maps brought his son, young with pink cheeks that became even more rosy the more I asked about maps of Alaska. Yes, he did have some. I don't recall now what I bought, but Graham's enthusiasm was contagious, so I probably bought more than I should have.

The next port of call was Rickmansworth, the home and selling place of Clive Burden. He was a very pleasant man with a nice large room as his place of business. In all, I bought about $2,000 worth of maps, heart-in-mouth. What would happen if no one in Alaska wanted to buy old maps? I decided I would have Christmas presents for years to come in that case.

My husband George turned out to be the map enthusiast of the family. He devised a method of making an inventory of them, played with my purchases, and actually bought several (I made him use his own bank account). A friend from Juneau loaned me his two-volume set by Henry Wagner of *Cartography of the Northwest Coast to the Year 1800*. I started to read, sure I could memorise the material. It evaporated from my mind. The early Russian explorations, followed by the Spanish and the English along the Alaska coast was far, far too much information. That was when I learned to go from the map to the book, not the reverse. Pick a map you want to know more about, then hunt for the reference that gives the answers you need.

I learned to marvel at the amount of information the generalist map dealer acquires.

The first conference I attended was the International Conference on the History of Cartography (ICHC) in 1983. It was held in Dublin and I was amazed at the way history came alive through the papers read and the subsequent bus tours around the countryside. Some of the faculty from Trinity College were our guides and we were treated to such sights as the village that was moved because the English property owner decided it blocked his view, and the fact that Ireland was surveyed before England because the new proprietors wanted to know the extent of their spoils. A whole new world opened up.

But bit-by-bit, it became clear this was the area for a curious person. And I am a very curious person, interested in all facets of a subject. Why was this cartographer so important? Why was that map even made? Was it true that cartographers invented names to fill up empty places on maps' As I read more and attended more map conferences such as the IMCoS meetings, I learned, if not answers to all my questions, at least some questions to ask.

There were some inspiring papers such as Brian Harley's wonderful lecture on the importance of knowing that what is not on a map can be as important as what is there. Brian was one of the most intelligent and exciting people I ever met. His enthusiasm fizzed and sparkled as he described the theory behind maps. Journeys are maps, chess games are maps; he unified the field. In fact, he moved the dusty old world of debate about which state of a map was published when, and where cartographers were living when they produced maps, to the underlying theme. His early death brought sorrow to many, many people.

Then there was the affair of the Ortelius *Tartariae sive Magni Chami Regni*. I was at a Sotheby's auction in London and not doing well. Every thing I bid on promptly went into the stratosphere. Towards the end of the sale I became stubborn and decided to bid in order to get something. So I bid, and I bid and I wound up with the Ortelius. When I went down to pay, I realised I had had a full-blown case of auction fever. I paid about $1,200. At that time, the going rate was around $850. This was a dilemma. What was I going to do with the map? My choices were to take it home and overprice it, or take a financial loss. The more I looked at it, the more I liked it, so I kept it. It has become one of my favourite maps.

As I gained a bit of confidence in selling maps, I bought a few more expensive ones (some cost as much as $900!), but mostly I stayed at the low end. Not many moneyed collectors came to Sitka on Baranof Island (where I was living at the time).

There is a distinct difference between map collectors. Although it's changing somewhat, most Americans know old maps only from museum visits. So they tend to be suspicious. 'How do I know the map is as old as the date on it?' 'Is this really hand-made paper?' 'How do you tell a modern reprint?' One man asked kindly, after I spent some time explaining a Blaeu map of Tartariae, 'Do you ever sell any of these?' The British and Europeans, to my joy, simply look at a map and decide if they want it. People do collect maps for different reasons. All summer I sell old maps to people who want a souvenir of their visit to Alaska.

The real collector, no matter the home country, is very different. He/she tends to obsess. When someone draws in his breath and says, 'That's the most beautiful thing I've ever seen' there's a potential collector. One of the great joys is tending this fragile little plant and hoping it will blossom into at least a geranium, if not an orchid. What to do when the new map lover cannot hope to be more than a buttercup? Plant the seed for the future. A young man recently fell in love with a small sixteenth-century map of the Nile River. I gave him permission to photograph it, so he can have something to enjoy.

The experienced collector may not express such joy, but asks knowledgeable questions. They are also apt to be vague when describing their collection. I have learned to ask which of the maps they own is their favourite. I love to collect stories about how people became interested in old maps. A lawyer told me that when he rented his first office, several framed maps hung on the walls. He bought them as decorations. At first business was very slow, so he had plenty of time to really look at the maps. By the time business had picked up, he was hooked. It doesn't really matter how you came to love maps. I'm preaching to the choir. When IMCoS met in Tokyo a few years ago, I was told that map collecting is not a popular Japanese past time. One collector did bring his collection for us to enjoy; all laid out on the floor of a gym in proper Japanese style. It was clear that his friends, and likely even his family, had thought for years he had a strange hobby. No one present would ever forget the joy on his face as our group walked around the maps and asked him questions. That's what map collecting is really all about.

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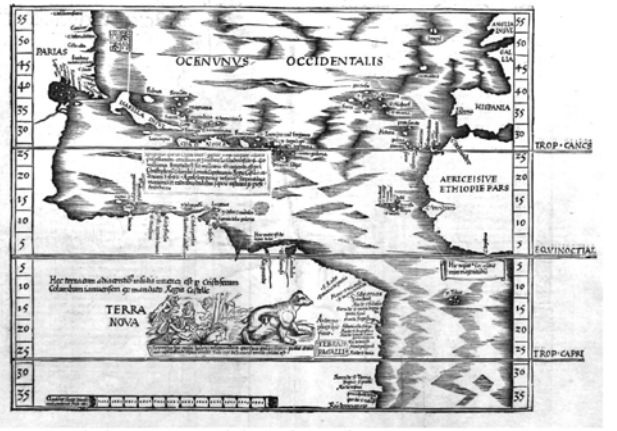
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Oceani occidetalis sive terre nove tabula, woodcut map by L. Fries from the Ptolemaeus edition by J. Grüninger, Strasbourg, 1525



Fig. 1 *Geometry*, engraving, Cornelis Cort after Frans Floris, Antwerp: Hieronymus Cock, 1565. Courtesy Amsterdam, Rijksprentenkabinet, inv. RP-P-BI-6392.

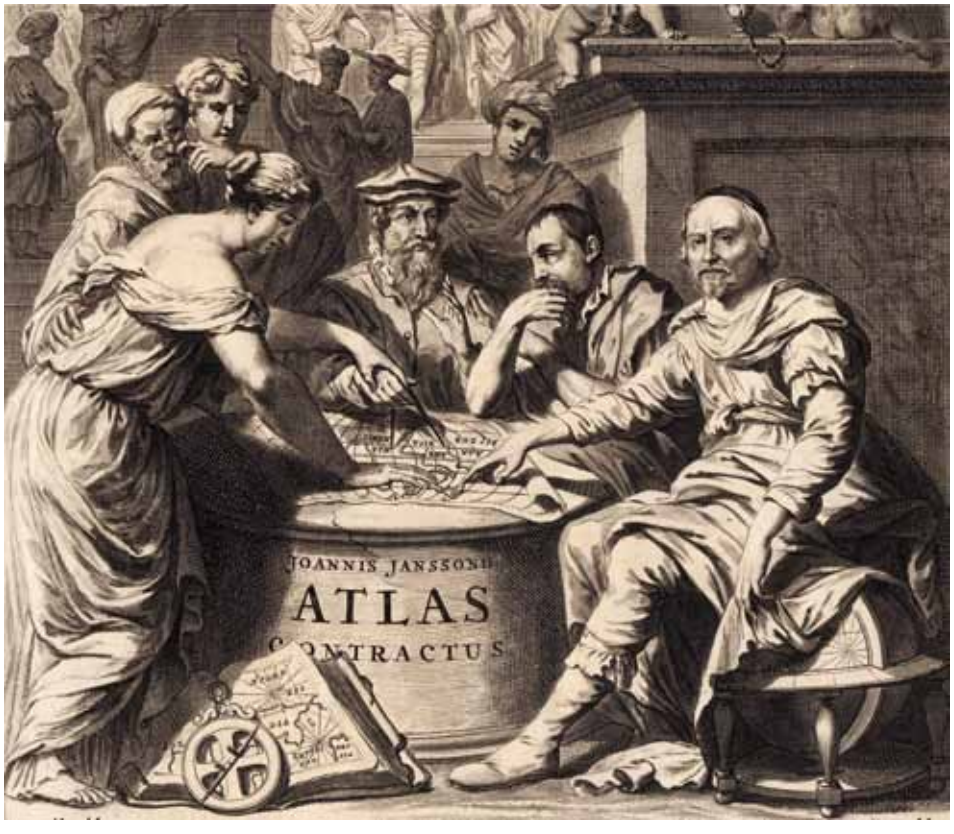


Fig. 2 Geography guides Gerhard Mercator's hand, engraving (detail), Joannes de Visscher after Zacharias Webbers, in *Atlas Contractus*, Amsterdam: Johannes Janssonius Heirs, 1666. Private collection.

GEOGRAPHIA

Representations of mapmaking in the early modern period

Michael Bischoff

The development of a particular geographical iconography in the early modern period is the subject of this essay. The breathtaking progress in the sciences and the new knowledge gained about man and the natural world generated a demand for new artistic formswhich were able to visualise these successes. Geographical discoveries, too, were celebrated in painting, sculpture and works of applied and graphic arts. Rodney Shirley, the foremost connoisseur of cartographic title pages, has already pointed out the contemporary influence of the discoveries made in science and exploration and their side-by-side existence with classical allusions.[1] He states the connection between iconography and the developing skills of surveying, astronomy, navigation, map and chartmaking. Frontispieces and title pages of atlases, as well as the decorated margins of maps, offer space for an astonishing variety of representations of geography and mapmaking. Alongside the adaptation of suitable models available to sixteenth-century artists new iconographic inventions proliferated.

During the Renaissance there were very few abstract ideas, philosophical concepts, manifestations of nature, social life or human behaviour which had not been depicted. Allegories, personifications and symbols formed a language, which the learned contemporary viewer was able to decipher. Artists could rely on a long iconographic tradition, which had taken shape in ancient and medieval times. Representations of the sciences were linked with the educational canon of the seven liberal arts: grammar, rhetoric and logic, arithmetic, geometry, music and astronomy.[2] The term originates from classical antiquity and describes the knowledge considered essential for a free person to take an active part in civic life. Their representation in the form of female personifications, equipped with attributes, derives from the fifth-century Roman author Martianus Capella. They are frequently found in manuscripts and cathedral decoration dating back to the twelfth century.

The female figures of Astronomy and Geometry were predestined for adaptation since they embody two important aspects of early modern science: cosmography and land surveying. The traditional attribute of Astronomy is an astrolabe and a ring of stars around her head. Geometry is equipped with a compass or a measuring rod.[3] 'Geometria' means measuring the earth, or geodetic survey. In the illuminated twelfth-century manuscript *Hortus deliciarum* by Herrad of Landsberg (*c.*1180) Geometry explains her role: 'I measure the earth with great care'.[4] Although the prefix *geo-* means earth, in the curriculum of medieval universities it refered to the teaching of Euclidean geometry, corresponding to the geometry lessons at today's school, where the children are taught the clear concept of two- or three-dimensional space.

It might have been for this reason that it was not until the sixteenth century that the personification of geometry not only appears with a compass or a measuring rod, but also with an earth globe. Geometry from the seven liberal arts series of engravings by Cornelis Cort after Frans Floris (Fig. 1) is the pictorial translation the linguistic term. The female personification of geometry wears a mural crown with city walls and towers, the iconographic attribute of Cybele. Her act of measuring an earth globe represents her function of surveying the earth's surface.

In ancient Greece Cybele assimilated aspects of the earth goddess Gaia and the harvest goddess Demeter. In Roman times she was known as Magna Mater (Great Mother). In Renaissance iconography she represents the earth. The globe in Cort's engraving not only refers to earth measuring in general but, by turning the New World towards the spectator, emphasises the most important geographical discovery of the early modern period.

The title page of Gerhard Mercator's 1595 *Atlas* shows a bearded muscular giant measuring a globe with a compass.[5] The title seems to refer to the titan Atlas. In Greek mythology Atlas was condemned to carry the vault of heaven on his shoulders. The name of the bearer of the universe would seem an appropriate title for a book containing maps which describe the surface of the earth. However, in the preface, Mercator makes clear that he is referring to a mythological Mauritanian king of the same name. This king was an expert in astronomy and he is credited to have been the first to interpret the heaven as a sphere. A second globe,

clearly recognisable as an earth globe, suggests that Atlas is not only interested in astronomy, but also in geography. It is unclear whether the globe in Atlas' hands is a celestial globe. One could interpret it as a second earth globe which Atlas is copying with his compass after the model on the ground by his legs. The making of a globe would be the perfect allusion to the cartographic products which Mercator's book contains.

Frans Hogenberg in his engraved portrait of Mercator (1574) demonstrates that the image of the measuring Atlas is applicable to the mapmaker. The great cartographer is depicted presenting the result of his work, a globe showing the north pole region consisting of four islands, according to his 1569 world map 'Nova et Aucta Orbis Terrae Descriptio ad Usum Navigantium emendatè accomodata'. With a compass, Mercator points to one of his most important findings: Earth's magnetic pole.

The splendid title page of the *Atlas Contractus* (Amsterdam, 1666), published by the heirs of Johannes Janssonius, is inspired by Hogenberg's engraving (Fig. 2).[6] But there is a significant difference: the mapmaker does not work independently. A woman guides a compass in his hand. She is the personification of geography. In the seventeenth and eighteenth centuries she belonged to the standard stable of images used for geographical allegories and which can be seen on many atlas title pages and frontispieces.

Sometimes Geography, as well, acts with an assistant. On the title page of a later edition of Philipp Cluver's *Introductionis in universam geographiam […] libri VI* (Amsterdam, 1697) the Mauritanian king Atlas is explaining a celestial globe to Geography (Fig. 3). On the title page, designed and engraved by Gerard de Lairesse for Nicolaes Visscher's *Atlas Minor* (Amsterdam, *c.*1683), Geography is documenting the geographical data given to her by Neptune and Cybele.[7] In Cort's engraving (Fig. 1) the mural crown of Cybele, an attribute of Geometry, emphasises the land surveying aspect of this science. The presence of a lion confirms that the personification is meant to be the earth goddess, since it is a typical attribute of Cybele. Cybele and the sea god Neptune represent land and sea. The sum of them constitutes the surface of the earth.

This duality is important. The idea of using Cybele and Neptune to depict the object of cartography occurs for the first time on the title page of the second edition of Abraham Ortelius' *Thesaurus Geographicus* (Antwerp, 1596).[8] The two gods act as a visual formula for the short summary given on the title page. Ortelius writes, that his reference book deals with *Omnium totius terrae*



Fig. 3 Mauritanian king Atlas and Geography, coloured engraving, in Philipp Cluver *Introductio in universam geographiam*, Amsterdam: Joannes Pauli, 1729 (1697). Private collection.

regionum (all regions of the world). But Cybele and Neptune also appear in non-geographical contexts.

Peter Paul Rubens, for instance, adapted the divine couple as the iconography for the city of Antwerp in his painting *The Union of Earth and Water* (*c.*1618).[9] Commonly Cybele and Neptune embody these two elements. But Rubens added a contemporary meaning. He linked it with a question of great importance to his hometown. The prosperous union of earth and water stands for the union of Antwerp and the River Scheldt. The estuary had been blocked off by the Dutch in 1585, when the Spaniards conquered the city, depriving Flanders of an access to the sea and endangering the prosperity of the town.[10] The engraving *Neptune and Cybele* by Pieter de Jode II, after Rubens,[11] inspired designers of atlas title pages, among them not only Gerard de Lairesse as mentioned above, but also his pupil Zacharias Webbers (Fig. 4).[12] Again the two gods are providing Geography with information about the world. The frontispiece of the *Atlas Contractus* (Amsterdam, *c.*1700), designed by De Lairesse and published by Pieter Schenck, is another example of this iconography.[13] The Gerard Valk title page (Fig. 5) varies the motif: Geography is working with a globe.[14]



Fig. 4 Geography, Cybele, Neptune & Atlas, engraving (detail), Johannes Willemsz. van Munnikhuyse after Zacharias Webbers, in *English Atlas*, London: Moses Pitt, 1680. Private collection.

The globe demonstrates, as usual, that she is describing the world as a whole. But in this picture Geography is not only listening to Neptune and Cybele, but to another woman, who is presenting a regional map. Probably she is a personification of local geodetic surveying. She appears as a visualisation of the idea that the general view of the world depends on the sum of many smaller cartographic units.

An alternative way of representing geography and mapmaking is to replace the object of these sciences with their driving forces. For instance, on the title page of Pieter Mortier's *Atlas Minor* or *Atlas François* (Amsterdam, 1695) there is a female with a map and compass, representing geography or cartography.[15] She is being instructed by Mars, the god of war, and Mercury, the god of commerce, travel and communication. This iconography traces the progress of geography back to military and trade. On the title page of the first volume of Henri Abraham Chatelain's *Atlas Historique* (vol. 1, Amsterdam, 1705) one can observe a detail that confirms that travel and trade contributed to geographical knowledge.[16] Replacing Mercury is a woman who wears a crown in the shape of the bows of a boat. She is lifting a model ship personifying shipping and navigation. This iconography perfectly fits with where this atlas was published: the seaport of Amsterdam. On the title page of the *Atlas du Voyage de La Pérouse* (Paris, 1797)[17] the personification of navigation is presenting a large world map. Her attribute is a ship's rudder. Two females are recording her geographical discoveries.

On the title page of the second volume of George Louis Le Rouge's *Atlas portatif* (Paris, 1759) are the personifications of geography on the right and astronomy on the left.[18] They are accompanied by Chronos, who represents time. He is a winged old man with a scythe who is unveiling Astronomy. This illustrates the idea that time brings new astronomical and geographical knowledge to light. It is a direct adaptation of the classical motif from Renaissance iconography of time unveiling truth.[19] A variation occurs on the frontispiece of Johann Hübner's *Reales Staats-, Zeitungs-Lexicon* (Leipzig, 1704). Here Time is instructing Geography who is recording the information.



Fig. 5
Geography, Cybele & Neptune, coloured engraving (detail), in *Nova totius geographica telluris projectio*, Amsterdam: Gerard Valk, *c.*1700. Private collection.

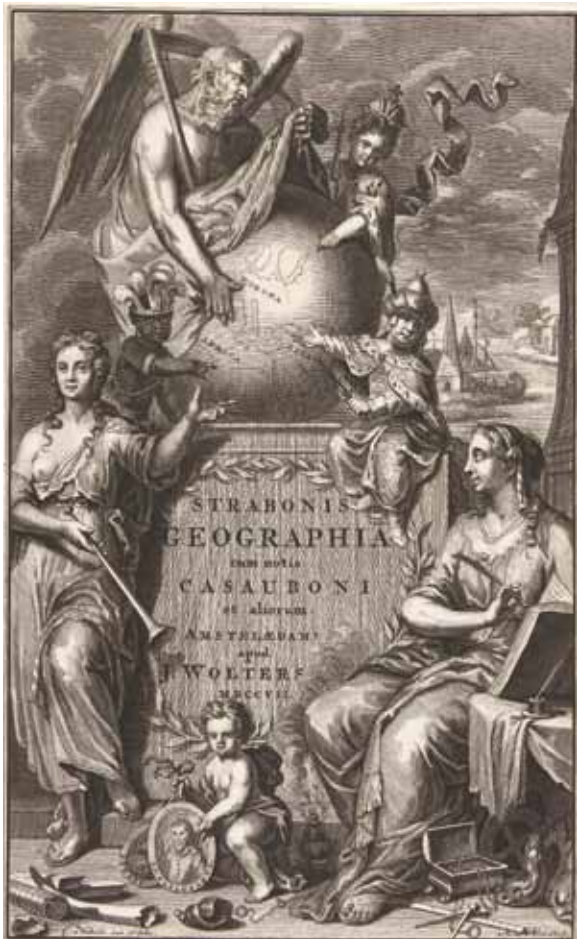


Fig. 6 Time, Geography & Continents, engraving by Abraham de Blois after Cornelis Huyberts, in Strabon *Geographia*, Amsterdam: Joannes Wolters, 1707. Courtesy Amsterdam, Rijksprentenkabinet, inv. RP-P-1964-3404.

This is similar to Lairesse or Webber's interpretation (Fig. 4), in which Geography is listening to Cybele and Neptune, the personifications of land and sea. The frontispiece of Strabon's *Geographia* (Fig. 6) shows Chronos unveiling an earth globe. Geography is writing down the information given to her by the personifications of the continents Europe, Asia and Africa. It seems to be only a question of time, before Chronos will remove his cloak to reveal the fourth continent, the New World.

Numerous atlas title pages omit the personification of geography and employ her driving forces. On the frontispiece of Johann G. Gregorii's *Curieuse Gedancken von den vornehmsten und accuratesten alt- und neuen Land-Charten* (Frankfurt/Leipzig, 1713) Mars and Mercury are leaning on a globe, supported by the titan Atlas. The English translation of the German caption reads: 'Mars and Mercury travel throughout sea and land and with the help of art make known to us the whole world'. This leads to a third character who is involved in the process of mapmaking. Minerva, the goddess of wisdom, art and science often acts as another inspiration for Geography. To be precise: She represents the methods to produce exact and beautiful maps – science and art.

Sometimes Minerva completes the union of Mars and Mercury, seen, for example, in a cartouche decoration of the wall map *Les provinces des pais autrichiens* (Augsburg, *c.*1745/50, section *Le Canal et partie dela France*), published by Matthäus Seutter and engraved by Tobias Conrad Lotter.[20] The three gods are equipped with their attributes: Mars with armour and arms; Mercury with winged hat and caduceus; and Minerva, with helmet and spear, is sitting in a dominant position on a throne. The most convincing visual formula for the importance of these three gods for cartography is offered by the older title page in Matthäus Seutter's *Atlas Novus* (Augsburg, *c.*1720, Fig. 7), designed by Gottfried Rogg and engraved by Karl Remshart.[21] Each presents a map from which the beholder learns that there is no cartography without art, war and trade.

The focus or intention of the atlas dictates which of these gods appear. Mars and Minerva are used on the title page of Hubert Jaillot's *Atlas Nouveau* (Paris, 1681).[22] Since Jaillot dedicated his large folio atlas to Louis de France, le Grand Dauphin, it is not surprising, that he chose these personifications to celebrate the ruler's virtues. By contrast the focus of the title page of the *Atlas Novus* (Nuremberg, 1707), published by Johann Baptist Homann, engraved by Casper Luyken (1st state) or Michael Rössler (2nd state), lies on trade and commerce.[23] Here Mercury, seated between Neptune and Cybele, figures as the primary power behind the development of cartography; a most fitting patron for a commercial map publishing house like the Homann enterprise.

The margins of maps are often enlivened with images of geographers at work. Sometimes these geographers should be understood as portraits, for example the one above the scale of Eilhard Lubin's wall map of Pomerania (Amsterdam, 1618).[24] Lubin is surrounded by his tools: a compass, a Jacob's staff, a quadrant, a circumferentor or surveyor's compass and an armillary sphere.

Sometimes people are busily engaged in geodetic surveys and astronomical observation. A vignette on Johannes Janssonius's map *Gastinois et Senonois* (Amsterdam, 1644)[25] shows two men measuring the sun elevation with a quadrant (Fig. 8). Another man



Fig. 7 Minerva, Mars & Mercury (detail), Karl Remshart after Gottfried Rogg, coloured engraving in *Atlas Novus*, Augsburg: Matthäus Seutter, *c.*1720. Private collection.

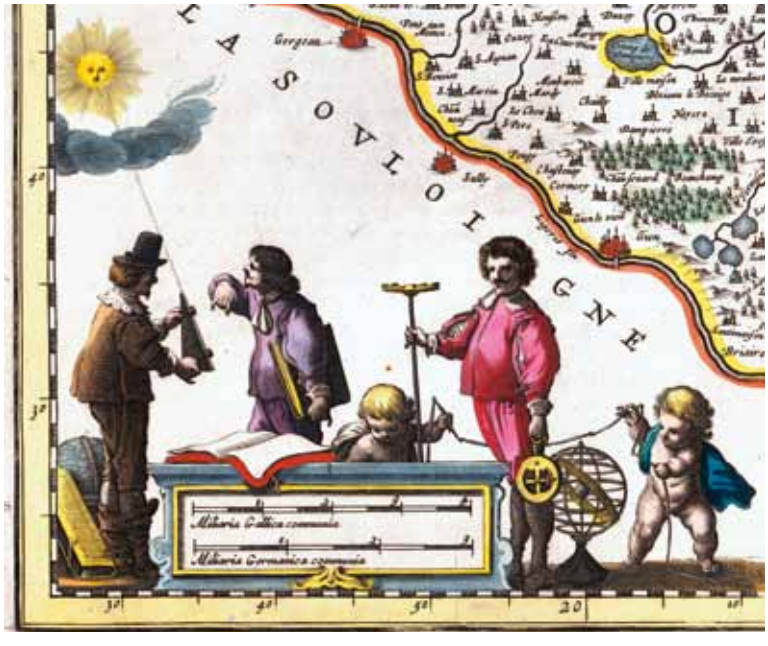


Fig. 8 Surveying scene, coloured engraving (detail), *Gastinois et Senonois*, Amsterdam: Johannes Janssonius, 1644. Private collection.

holds a surveyor's compass mounted on a staff. Two putti are working with a measuring chain. Since putti belonged to the standard personnel of baroque cartouche decoration, in maps it became very popular to delegate the geodetic works to them. On a title page by René Jacques Le Charpentier, created for Louis Charles Desnos' *Atlas General Méthodique et Élémentaire* (Paris, 1768), a group of children gather like a true geodetic academy. They perform a wide range of different surveying methods.

These scenes stand on their own and refer in a very practical manner to the measuring sciences. But sometimes these practical activities were charged with allegorical meanings. On the atlas title page, which was used at the Blaeu publishing house in Amsterdam from 1630 onwards,[26] there are two scholars, each of them behind a large globe, dictating their knowledge to scribes. The celestial globe on the left and the terrestrial globe on the right turn these scenes into allegories of astronomy and geography. These abstract terms complete the complex iconography of the title page, consisting of the four elements, the four continents and the gods Diana and Apollo. This kind of practical visualisation of astronomy and geography was very popular, as several examples from Janssonius' atlases demonstrate.[27] The pair of large globes without any attendants on the title page of Mercator's Ptolemy edition (Cologne, 1578) can probably be understood as an allusion to astronomy and geography too – of course, in a most abbreviated way.[28]

To return to the personifications of geography and astronomy. The following two examples show the sciences acting independently without the help of other personifications. A decorative panel, filled with figures, divides Homann's map of the Caspian Sea and of Kamchatka (Nuremberg, 1722/23).[29] At ground level Geography is working at a globe. She is accompanied by two putti with an atlas and a map. Above, on a bank of clouds, Astronomy sits enthroned. She holds an armillary sphere and a telescope. Both are receiving their inspiration directly from God, visualised by a beam, emanating from his all-seeing eye. A genius with a torch holds a banner with the Latin words translated 'thus handed down, thus accepted'. Another genius presents Seneca's prophecy, that 'new worlds will be discovered'.

On the frontispiece of Gerard Valk's *'t Werkstellige der sterre-konst* (Amsterdam, *c*.1706/30, Fig. 9) the two sciences flank either side of an enormous globe – or is it Earth itself? [30] The south is turned to the top. Astronomy is equipped with a celestial globe, a quadrant and a telescope; Geometry with a terrestrial globe, a compass and a circumferentor. A text at their feet is a quotation from Psalm 24: 'The earth is the Lord's, and all that therein is'. Above them in the heavens one can see the sun, the zodiac and a line from Psalm 19 proclaims: 'The heavens declare the glory of God'. This example (as well as Homann's map of the Caspian Sea and of Kamchatka) is a Christian alternative to the dominating pagan geographical iconography. Although the meaning of the personifications is clear from the context, both are identified by the inscriptions: 'Astronomia' and 'Geographia'. Against the background of the flowering of geography and cartography in the early modern period, astronomy's neighbour sciences among the seven liberal arts no longer is Euclidean geometry, but geography.

The examples given in this article are only a small part of the rich iconography found in cartographic title pages, frontispieces and map decoration. They are proof of a creative melding of the ancient gods of classical mythology with man's unique cultural and scientific achievements. Other popular subjects suitable for the decoration of atlases, maps and globes have been omitted, or only mentioned in passing: for example the four continents, Christian scenes, or allegories glorifying the power of a ruler. The focus of this article has been on the personification of geography, her appearance in complex allegories and the substitution of Geography by her driving forces or by scenes of land surveying. These subjects form a fascinating panorama which connect art, science and geographical discoveries beyond the well-trodden path of classical iconography.

Notes

1 Rodney Shirley, *Courtiers and Cannibals, Angels and Amazons. The Art of the Decorative Cartographic Titlepage*, Houten: Hes & De Graaf, 2009, p. 22. On cartographic title pages and map decoration see also: Shirley, 'The Decorative Cartographic Title-Page' in *The Map Collector* 41, 1987, pp. 2–6 and 42, 1988, pp. 10–17; Shirley, 'Symbolism and Art in the Cartographic Title-Page' in *AB Bookman's weekly* 12.6.1989, pp. 2601–2608; Shirley, 'De Nederlandse bijdrage aan de decoratieve kartografische titelpagina' in *Caert-thresoor* 15, 1996, no. 2, pp. 29–35; Shirley 'The Face of the Maker. Portraits of Cartographers Concealed in Maps and Title Pages' in *Mercator's World* 1, 1996, no. 4, pp. 14–19; Agustín Hernando, 'Retórica iconográfica e imaginación geográfica: los frontispicios de los atlas como proclamaciones ideológicas' in *Boletín de la Asociación de Geógrafos Españoles* 51, 2009, pp. 353–369 (English summary: pp. 441–446); Michael Bischoff, 'Weltenträger, Kontinente, Land und Meer. Zur Ikonographie der gestochenen Titelblätter frühneuzeitlicher Atlanten' in Bischoff, Vera Lüpkes, Wolfgang Crom (eds.), *Kartographie der Frühen Neuzeit. Weltbilder und Wirkungen*, Marburg: Jonas, 2015, pp. 193–209; Bischoff, 'Zinnebeelden op titelpagina's van vroegmoderne atlassen' in *Caert-Thresoor* 34, 2015, no. 1, pp. 3–12; Ulla Ehrensvärd, 'Decorative illustrations in early maps and atlases' in *Nordenskiöld seminar*, Helsinki: Nordenskiöld-samfundet i Finland, 1981, pp. 117–131; R.V. Tooley, 'Title Pages. From 16th to 19th Century' in *Map Collectors' Circle*, Series 107, 1975.

This essay is dedicated to Katja Schoene who helped bring ideas to light.

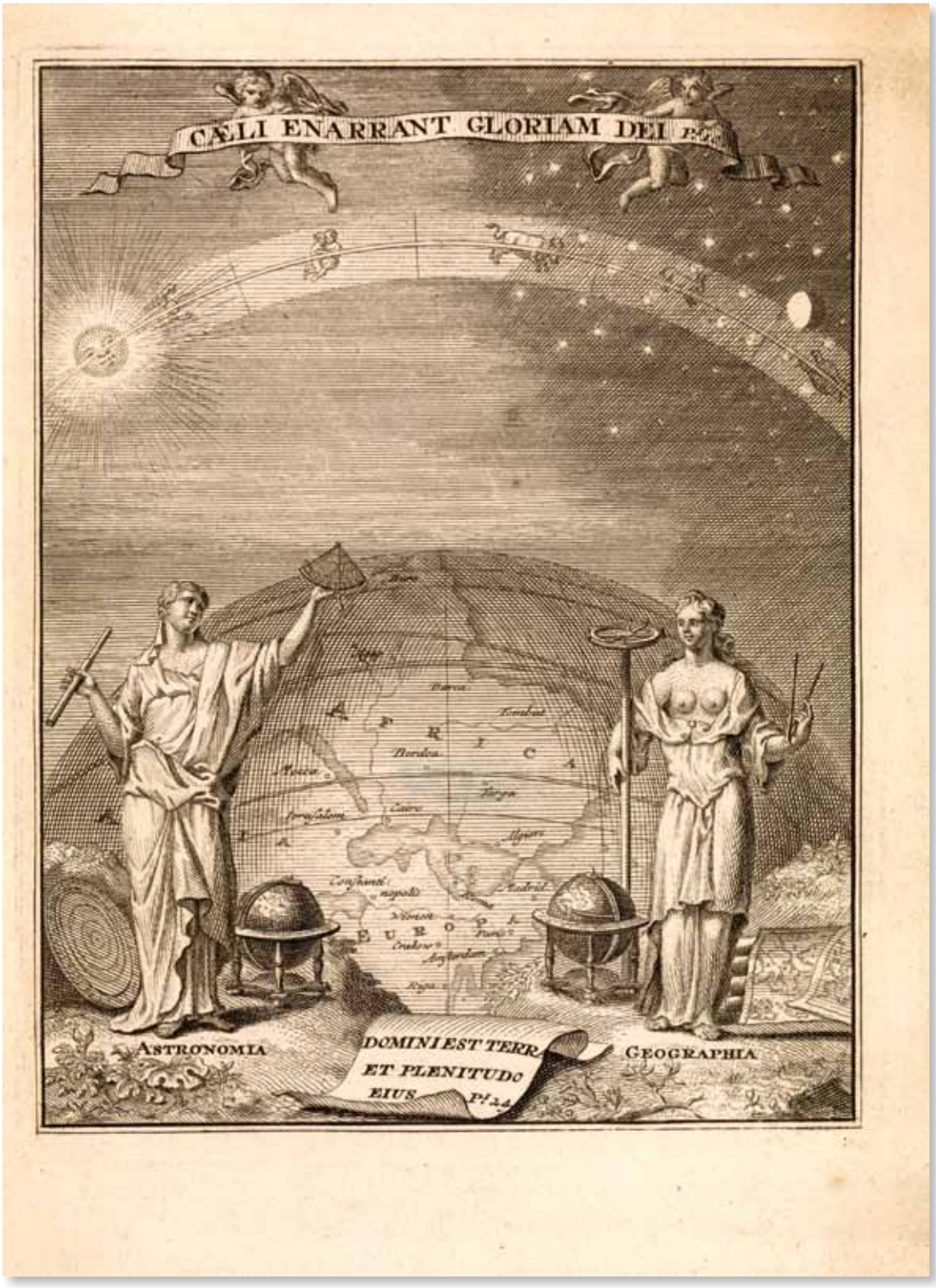
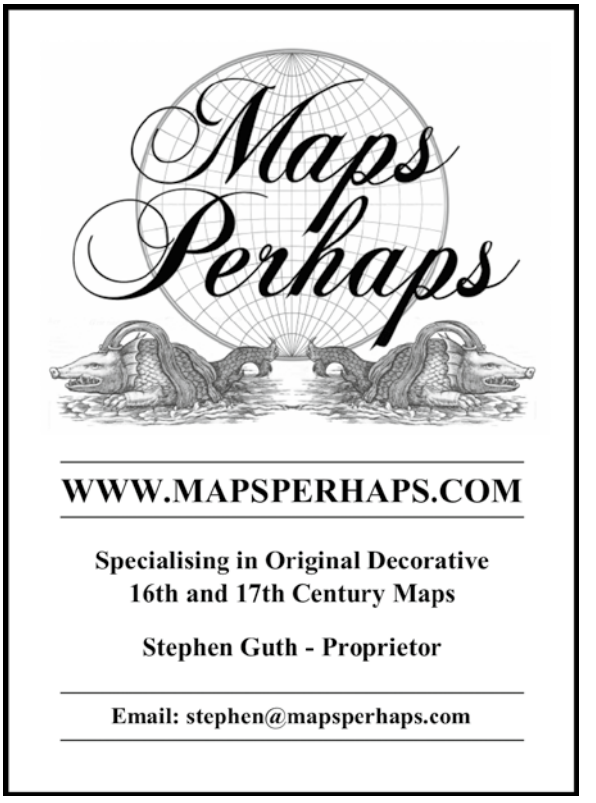
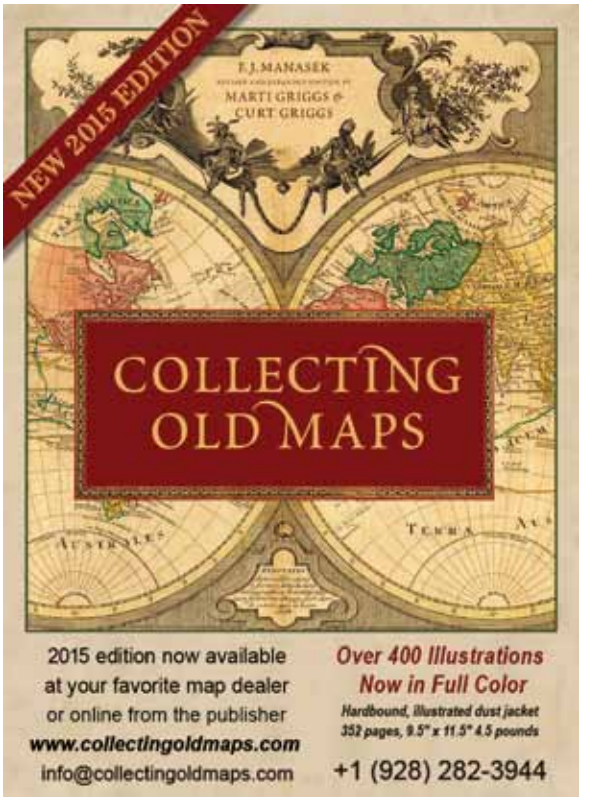


Fig. 9 Astronomy & Geography, engraving, Gerard Valk, in *'t Werkstellige der sterre-konst*, Amsterdam: Gerard Valk, 1706/30. Courtesy Amsterdam, Rijksprentenkabinet, inv. RP-P-1937-370.

2 Uta Lindgren, *Die Artes liberales in Antike und Mittelalter*, Augsburg: Rauner, 2004.
3 See for example the Liberal arts window at Laon cathedral (13th century) or the Artes liberales miniature in Herrad of Landsberg's *Hortus Deliciarum*, fol. 32 (*c.*1180).
4 L.D. Ettlinger, 'Muses and liberal arts. Two miniatures from Herrad of Landsberg's *Hortus deliciarum*' in *Essays in the History of Art Presented to Rudolf Wittkower*, London: Phaidon, 1967, pp. 29–35.
5 Shirley, 2009 (see note 1), no. 17A; Michael Bischoff, 'Mit Globus und Zirkel. Entdecker, Schöpfer, Weltvermesser' in Bischoff, Vera Lüpkes, Rolf Schönlau (eds.), *Weltvermesser. Das Goldene Zeitalter der Kartographie*, exhibition catalogue Weserrenaissance-Museum Schloss Brake, Lemgo, Dresden: Sandstein, 2015, pp. 14–23, here pp. 20–21, and no. 136.
6 Shirley, 2009 (see note 1), no. 54; Peter van der Krogt, *Koeman's Atlantes Neerlandici* I, Houten: Brill, HES, 1997, no. [1:46A].
7 Shirley, 2009 (see note 1), no. 61.
8 Bischoff, 'Weltenträger', 2015 (see note 1), pp. 202–203.
9 St Petersburg, State Hermitage, inv. 464.
10 Maria Tsaneva, *Peter Paul Rubens: 201 Paintings and Drawings*, e-book: Lulu Press, 2013.
11 Courtesy Amsterdam, Rijksmuseum, Rijksprentenkabinet, inv. RP-P-OB-7826.
12 Van der Krogt, 1997 (see note 6), no. [1:47A]; Bischoff, 'Weltenträger', 2015 (see note 1), pp. 203–204.
13 Bischoff, 'Weltenträger', 2015 (see note 1), p. 200.
14 Bischoff, 'Weltvermesser', 2015 (see note 5), no. 145.
15 Shirley, 2009 (see note 1), no. 72.
16 Shirley, 2009 (see note 1), no. 75.
17 Shirley, 2009 (see note 1), no. 92.
18 Bischoff, 'Weltenträger', 2015 (see note 1), p. 205.
19 Fritz Saxl, 'Veritas Filia Temporis' in Raymond Klibansky, H.J. Paton (eds.), *Philosophy and History*, Oxford: Clarendon Press, 1936, pp. 197–222.
20 Michael Ritter, *Die Welt aus Augsburg. Landkarten von Tobias Conrad Lotter (1717–1777) und seinen Nachfolgern*, Berlin-Munich: Deutscher Kunstverlag, 2014, p. 26.
21 Bischoff, 'Weltvermesser', 2015 (see note 5), no. 148.
22 Bischoff, 'Weltenträger', 2015 (see note 1), p. 200.
23 Shirley, 2009 (see note 1), no. 79; Bischoff, 'Weltvermesser', 2015 (see note 5), no.146.
24 Bischoff, 'Weltvermesser', 2015 (see note 5), no. 157.
25 Van der Krogt, 1997 (see note 6), no. [4330:1B.2].
26 Shirley, 2009 (see note 1), no. 46; Hernando, 2009 (see note 1), pp. 360–364; Bischoff, 'Weltvermesser', 2015 (see note 5), no. 143.
27 Shirley, 2009 (see note 1), nos. 44, 50, 55.
28 Shirley, 2009 (see note 1), no. 14.
29 Bischoff, 'Weltvermesser', 2015 (see note 5), no. 34.
30 Peter van der Krogt, *Globi Neerlandici. The production of globes in the Low Countries*, Utrecht: HES, 1993, pp. 308–310.

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Septentrionalium Terrarum Descriptio
G. Mercator / J. Cloppenburgh, Amsterdam, c 1630



Magnae Britanniae Et Hiberniae Tabula G. Blaeu, Amsterdam, 1630

Jonathan Potter
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THE *BRITISH ATLAS*, 1810

A reassessment of the town maps

David Smith

The town maps in the *British Atlas*, published between 1804 and 1810, have always been dismissed as simply copies of earlier maps. However, detailed study reveals that many have important elements of originality which can represent significant links in the history of town development. This article analyses the town maps to identify sources and originality in order to reassess their contribution to English urban history.

Twenty-one full-page, quarto-size maps of English towns plus an inset plan of Newport, Isle of Wight,[1] were supposedly produced 'to accompany the Beauties of England and Wales'.[2] Despite this credit printed on each map, the full edition of *The Beauties of England and Wales or, Delineations, topographical, historical, and descriptive, of each county*, published in eighteen volumes between 1801 and 1815 did not normally contain the maps. A prospectus of 1804, although acknowledging that the maps were designed to the same page size so they could be bound with the *Beauties*, suggested and recommended that the maps form a separate atlas, bound independently. Thus, the town maps were initially published in parts together with county maps as a separate series from 1 October 1804 until 1810, and then as the *British Atlas* in 1810, being announced when thirty-two parts of the *Beauties* had already appeared.[3] The parts of the *Atlas* contained either two county maps and one town map or just three county maps.[4]

The principal publishers of the town maps and of the *British Atlas* were Vernor and Hood of London. Thomas Vernor had been a bookseller as early as 1766 and was probably the senior partner in the project.[5] Thomas Hood joined Vernor (he died in 1811 just after publication of the town maps was completed) in partnership in 1794, and they were, in turn, joined by Sharpe in 1806.[6] Nine of the maps bear the publishing imprint of Vernor and Hood alone (variously dated between 1 October 1804 and 1 December 1805), and the remaining thirteen of Vernor, Hood and Sharpe (variously dated from 1 April 1806 to 1 January 1810). Publication of the town maps seems to have been inexplicably intermittent and to have slowed down as the project progressed, with two maps dated October and December 1804 respectively, seven dated 1805, three 1806, six 1807, three 1808, and one afterthought 1810.

Eleven of the town maps were 'drawn and engraved under the direction' of Edward Wedlake Brayley, five undertaken under John Britton, and 'Cambridge' and 'Durham' under both of them. Brayley and Britton were the researchers and writers of *The Beauties of England and Wales*. The attribution is missing from the maps of Newcastle-upon-Tyne & Gateshead, Northampton, and Norwich.

All of the town maps were engraved by John Roper (fl. 1771–1810), eighteen of them from 'drawings' by G[eorge?] Cole. The remaining four (Exeter, Manchester & Salford, Worcester and Coventry) were prepared from local sources.[7] Each plan bears the attribution to its author and to Roper.

The outstanding feature of the town maps is the clarity and precision of the engraving and printing. Their short publication history ensured that all of the printed images remained sharp and free from plate wear. Labelling is precise and easily readable. All but the maps of Carlisle, Manchester & Salford, Northampton, St Albans, and the inset of Newport have references to churches and other major buildings and locations shown. There are occasionally other explanatory notes. The biggest difference between maps is in the representation of buildings. Fifteen maps portray buildings in plan in individual outline detail, whereas three show them just as regular shaded blocks. The remaining four maps mix the two styles. Field and other land boundaries have been delineated with an indication of vegetation. Significant industrial sites are labelled, often with an indication of purpose. In order to widen their appeal, they are decorated with the arms of the town and the (arch)bishopric, etc., where appropriate, and an attractive vignette of a local scene or building.

The towns engraved for the *Atlas* were, generally, ones considered appropriate to accompany *The Beauties of England and Wales* by their attractiveness and historical interest. Thus, the vast majority of towns covered were medieval cathedral cities, although only a selection of all such English cities was portrayed. The ancient university towns of Oxford and Cambridge were included, as were some important historical, regional and market centres, such as Bedford,

Colchester, and Northampton. Newcastle-upon-Tyne and Liverpool were important river ports and Manchester & Salford was the most important industrial town of the age in the world. The publishers possibly had an eye on potential sales when including some of these larger towns in their coverage.[8]

The erratic programme of production of the *Atlas* town maps may well suggest that some were included simply because appropriate maps came to hand suitable for plagiarism. This could have happened, for example, with 'Newcastle-upon-Tyne & Gateshead' which was a straightforward copy of Ralph Beilby's map of twenty years earlier. It may also have been the case with the *Atlas* maps of Newport and St Albans. John Britton claimed in his autobiography that the *Atlas* maps were reduced from 'original surveys ... published by Mr. Faden whose permission was *exclusively* granted'.[9] The copying of earlier town maps as they became available would explain the seemingly fairly random choice of towns for inclusion and the dates of production. Certainly, the disparity in dates between some town maps and their respective county maps suggests that there was no coherent plan to the production of the town maps. St Albans, for instance, was dated forty-nine months later than the map of Hertfordshire, while Cambridge was twenty-six months before the map of its county. Similarly, the map of Norwich,[10] dated 1 November 1807, appeared in Part XVI of the *British Atlas* containing county maps of Lincolnshire[11] and Nottinghamshire, rather than with the map of Norfolk.[12]

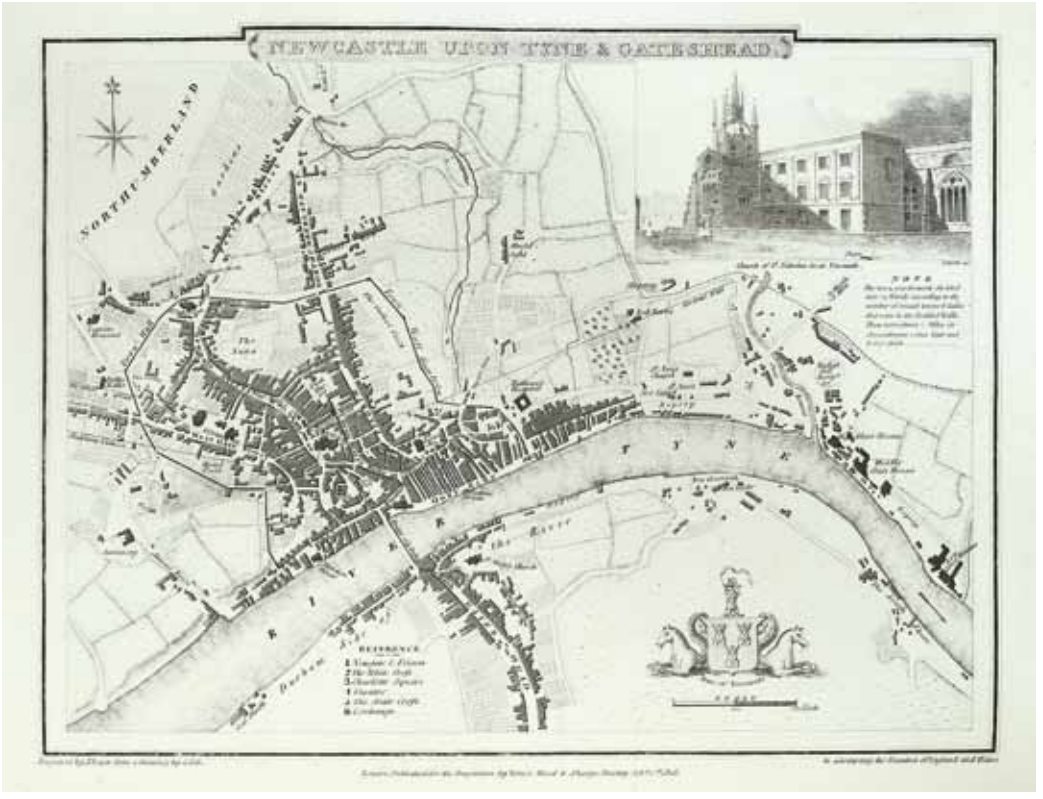
It has been suggested that the medieval cathedral cities not included, such as Chichester, Rochester and Salisbury, and, presumably, other towns of note, were not covered because 'most likely ... there was no up-to-date mapping of these places to serve as a starting point.'[13] However, there were plenty of other towns of note, including cathedral cities, that would have been appropriate to accompany *The Beauties* and had up-to-date accurate maps readily available to facilitate inclusion.

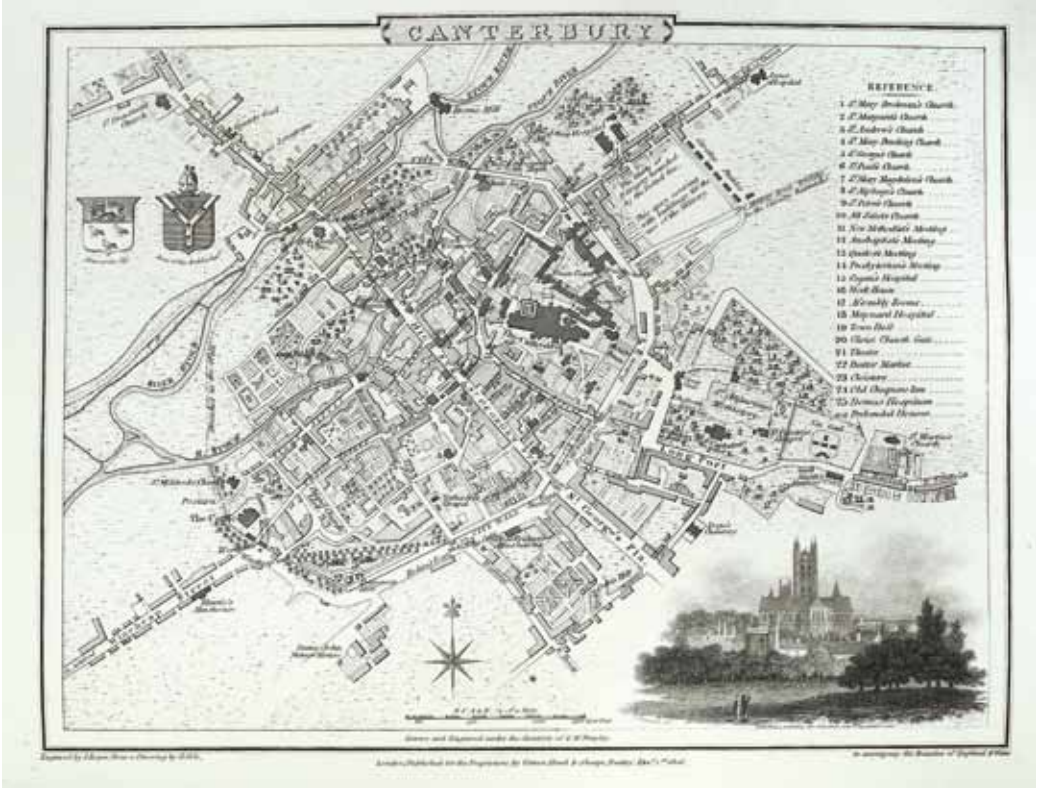
Forty-four maps of English counties, or parts of counties, made up the *British Atlas*, along with two general maps of England and Wales, twelve Welsh county maps, and the town maps.[14] There were no maps of towns in Wales. Generally, the English county maps seem to have been derived from Charles Smith's *New English Atlas* (1804) and John Cary's *New English Atlas* (1801–7? or 9). However, there is evidence that other sources were consulted in preparing the maps. Hertfordshire, for example, shows Roman station sites and other details which must have been 'taken from outside sources',[15] and for Lincolnshire 'the delineation of Sunk Island, now joined to mainland Yorkshire, is unique and suggests models drawn from local surveys'.[16] Thus, it is clear that the preparation of the county maps involved more than the slavish copying of obvious sources by the incorporation of other materials that became available. Cole, for example, added William Stukeley's plan (1721) of the Roman city of Verulamium to Andrews & Wren's later townscape of St Albans (1766) to create the composite town map for the *Atlas*, possibly, uncharacteristically, to appeal to antiquarian interests. In fact, advertisements were placed in local newspapers asking for material to be sent to London in order to increase the accuracy of the finished work.[17] In the case of the town maps, even when one was derived from an obvious earlier source, there was often conscientious updating. Particular attention seems to have been paid to the portrayal of new canals and their docks which were the biggest and most spectacular engineering projects of the age. However, as with other canal portrayal on maps, and, indeed, other urban features, there may well have been an element of anticipation in showing development based on proposals and the start of construction.[18]

In order to ensure accurate updating, local expertise was sometimes exploited. The surveyors, John Hayman, John (probably) Thornton and George Young, and the local antiquarian Thomas Sharp were recruited to provide the 'drawings' for Exeter, Manchester & Salford, Worcester and Coventry respectively, ensuring that such new developments as Bedford Circus and Colloton [Colleton] Crescent in Exeter appeared on the *Atlas* town maps. Towns might well have been visited by Cole himself in order to update source material or to survey. Other, simpler updating included the change in portrayal of churches, etc. from pictorial to plan, as in the cases of Durham and Oxford, which, contrary to appeals to antiquarianism and nostalgia, was a change of modernisation, as were so many other alterations and

Fig. 1 'Newcastle upon Tyne & Gateshead'. Cole & Roper's map of Newcastle upon Tyne & Gateshead was copied from Ralph Beilby's map of 1788 which appeared in John Brand's *The history and antiquities of the town and county of the town of Newcastle upon Tyne...* . Courtesy Burden Collection.

Fig. 2 'Canterbury'. Cole & Roper's map of Canterbury was copied from the maps of Canterbury which appeared in Edward Hasted's *The history and topographical survey of the county of Kent* in 1798 and 1800. The two maps differed only in their decoration. Courtesy Burden Collection.


NEWCASTLE UPON TYNE & GATESHEAD
NORTHUMBERLAND
REFERENCE


CANTERBURY
REFERENCE

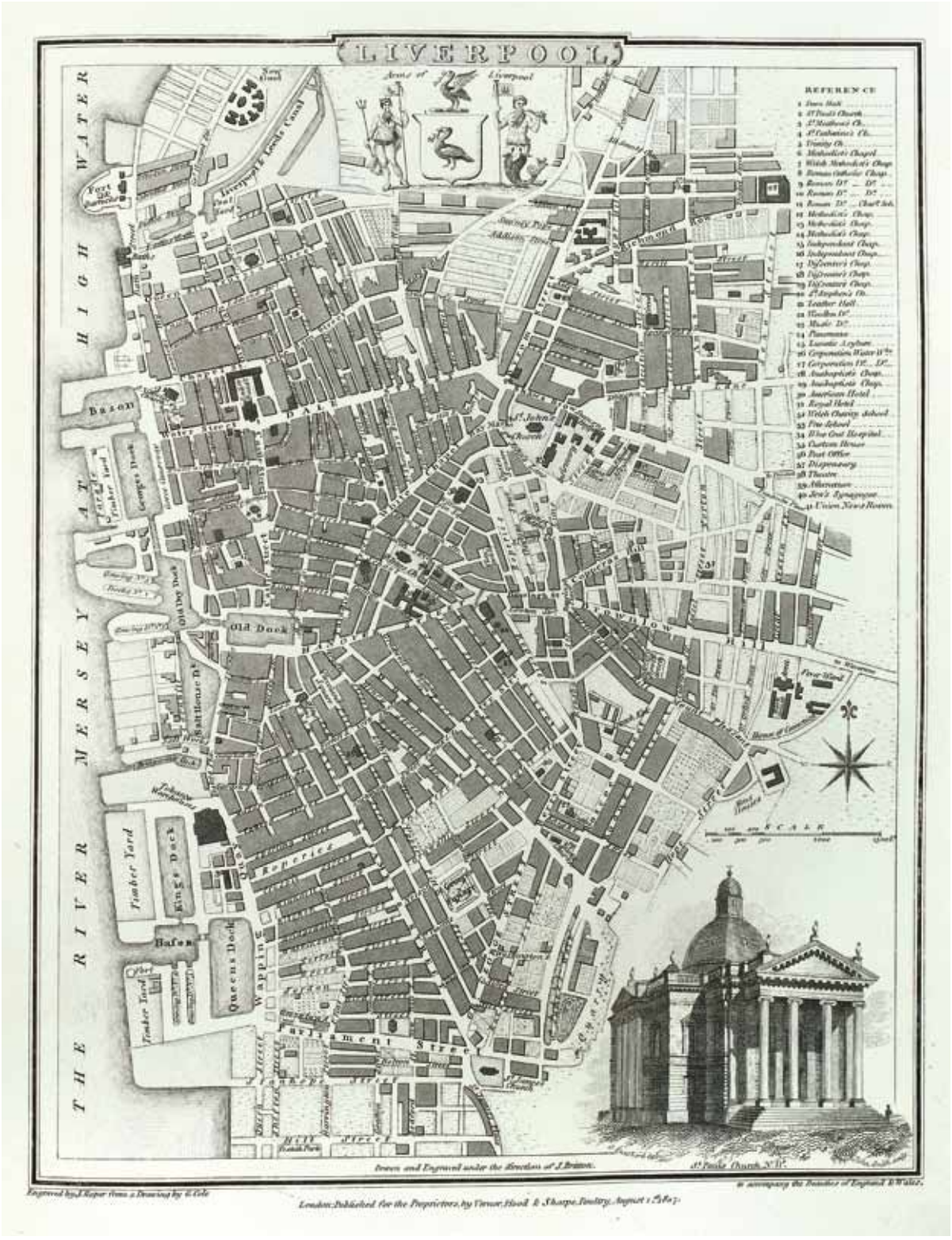


Fig. 3 'Liverpool'. No full source has been identified for Cole & Roper's map of Liverpool (1807) with its uncharacteristic blocked representation of built-up areas. Courtesy Burden Collection.

Map	Date/CBTM	Note	Source
'BEDFORD'	1.4.1807 CBTM 18397	The only known, possible source is 'A plan of the respective parishes of St. Paul, St. Peter & St. Cuthbert in the town of Bedford', 1795, (not in the *Catalogue*). Although this is similar for common areas covered and could have been a starting point, it does not include areas south of the River Ouse.	None identified.
'CAMBRIDGE'	1.10.1804 CBTM 18398	The *Atlas* map is virtually identical with William Custance's plan of the university and town (1798) which is its most obvious source. However, the Cole & Roper map has been updated by the replacement of the 'County Bridewell' by the 'New County Gaol', which started building in 1802 and was completed in 1807. This may be another case of anticipated completion so often found on town maps. Cole & Roper also show the 'intended site of Downing College' in the area of 'The Leys' shown by Custance. The College was granted a Royal Charter by George III in 1800 and the first buildings were erected in 1807–12.	'A new plan of the university and town of Cambridge to the present year 1798', William Custance. CBTM 120688
'CANTERBURY'	1.12.1806 CBTM 18485	The source is the maps of Canterbury which accompanied Edward Hasted's history of Kent, dated respectively 1798 and 1800. Although the decoration of the two versions of the map differs, the topographical detail remains the same. The *Atlas* map is virtually identical with those in the Hasted history although there are some differences to the west, a much reduced reference list, and more and different labelling on the map. The Cole & Roper version shows the New Gaol built in 1806. Since the map is dated 1st. December 1806, every effort must have been made to incorporate the most up-to-date and important developments.	'A plan of the city of Canterbury, & the adjoining suburbs', published by J[ohn?] C. Bayly, dated 1798 (not in the *Catalogue*), or 'A plan of the city and suburbs of Canterbury', dated 1800, engraved by J. Barlow, CBTM: 18825, used to illustrate the editions of 1778–98 and 1797–1801 respectively of Edward Hasted's *The history and topographical survey of Kent.*
'CARLISLE'	1.8.1805 CBTM 18399		None identified.
'CHESTER'[21]	1.12.1805 CBTM 18400	The *Catalogue* identifies Murray & Stuart's 'A new & accurate plan of the city of Chester', 1791, [CBTM: 18827] as 'probably a source for the Roper-Cole-Britton British Atlas Map', despite the fact that the Chester map was prepared under Brayley's direction. However, this first edition of Murray & Stuart's map does not show the Shot Tower built in 1799 or the Academy off York Street. There are other slight differences with the Cole & Roper map, including some building delineation and additional labelling such as the Octagen. A second edition of Murray & Stuart's map, published by Thomas Poole *c.*1800, shows both the Shot Tower and the Academy. This is the source for the Cole & Roper map, although it does not show the lead works next to the Shot Tower as noted by Murray & Stuart. The *Atlas* map also differs from its source in the portrayal of more development close to the Academy and some different building delineation.	'A new & accurate plan of the city of Chester', drawn and engraved by Mrs. [Elizabeth?] Murray and James Stuart, 'Published as the Act directs by Thos. Poole No 4 Eastgate St. Row'. Second edition (Not in the *Catalogue* which lists only the first edition published by John Poole in 1791).
'COLCHESTER'	1.10.1805 CBTM 18401		None identified
'COVENTRY'	1.5.1807 CBTM 18324	The *Atlas* map's delineation of buildings is very similar to the same shown on Samuel Bradford's plan of Coventry of 1750. However, it has many new features not shown by Bradford, including the new barracks erected in Smithfield Street in 1793; the Coventry House of Industry, which was created from Whitefriars Monastery in 1793; new development around the Coventry Canal Basin (opened in 1769, expanded in 1788) and Leicester Row, and new development to the north and in the south by Grey Friars Green. The contemporary content of the *Atlas* map is due to the involvement of Thomas Sharp in its preparation. Sharp presumably is the Coventry antiquarian and numismatist (1770–1841) [22] who had built a large collection of material on Warwickshire and who would later publish *An epitome of the county of Warwickshire* in 1835.[23]	None identified but possibly based, as a starting source, on 'A plan of the city of Coventry surveyed in MDCCXLVIII & IX by Samuel Bradford and engraved by Thos. Jefferys, 1750'. CBTM: 18323.

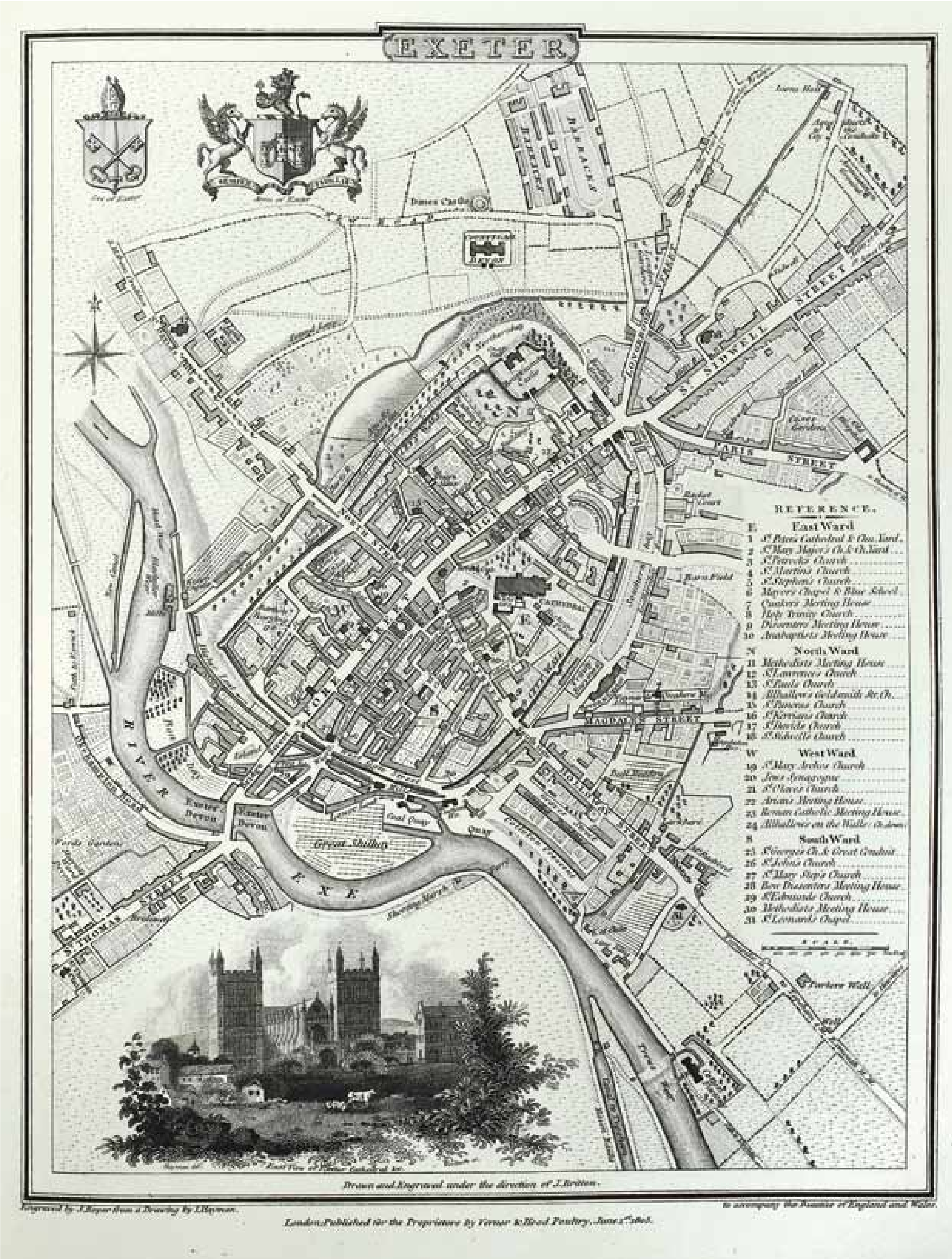


Fig. 4 'Exeter'. The *Atlas* map of Exeter was engraved from a 'drawing' by the local surveyor John Hayman. Courtesy Burden Collection.

Map	Date/CBTM	Note	Source
'DERBY'	1.4.1806 CBTM 18402	The *Atlas* map is virtually identical for common areas with the plan of Derby in William Hutton's *History of Derby* of 1791. However, there are many differences between the two maps, including: different reference lists; sometimes different labelling as in the case of the theatre and the Spar Ornament Manufactory; copper mills have become slitting and rolling mills; and there is new development in both the east and the west, such as Agard Street. The Hutton map may be a partial source but the Cole & Roper map has very considerable updating and extension.	Possibly partially 'A plan of Derby' for *The history of Derby*, William Hutton, 1791. CBTM: 19818.
'DURHAM'	1.12.1804 CBTM 18403	Thomas Forster produced a fine, detailed map of Durham city in 1754 which was copied for the inset 'Plan of the city of Durham' on Captain Andrew Armstrong's large-scale map of the county of 1768. Notably, both maps portray the cathedral and churches pictorially. Cole & Roper's map shows the exact same layout and delineation of buildings and is obviously copied from one of them despite differences in labelling and references. However, the cathedral and churches are now portrayed in plan.	Either 'Plan of the city of Durham …..', Thomas Forster, 1754, CBTM: 19728, or 'Plan of the city of Durham', inset on 'The county palatine of Durham survey'd by Capt. Armstrong and engraved by Thomas Jefferys', 1768. CBTM: 19727.
'EXETER'	1.6.1805 CBTM 18256	The *Atlas* map was prepared by John Hayman (fl. 1786–90; but clearly later), presumably the Exeter surveyor, nephew of William Hayman with whom he was in partnership from 1786.[24] The advanced state of the map's topography is explained by his local knowledge. Thus, the *Atlas* map shows Bedford Circus, for instance, started in 1773 and finally completed in 1825, the barracks, the county gaol, and Colloton [Colleton] Crescent, started in 1803.	None identified.[25]
'GLOCESTER'[26]	1.4.1805 CBTM 18404	A second edition of Robert Hall & Thomas Pinnell's 1781 plan of the city of Gloucester [CBTM: 21597] was published in 1796, updated to show the Hereford Canal (opened to within one mile of Ledbury from Gloucester in 1798) and the 'Glocester & Berkeley' Canal (later the Gloucester & Sharpness Canal; only five-and-a-half miles completed by mid-1799). The portrayal of the Gloucester County Gaol, opened in 1791, further updated the original map. This second edition of Hall & Pinnell's map was the source for the *Atlas*.	'A plan of the city of Glocester', by Richard Hall and Thomas Pinnell, engraved by Henry Mutlow, 2nd edition, 1796. (Not in the *Catalogue*).[27]
'HEREFORD'	1.4.1806 CBTM 18405	Cole & Roper's map of Hereford is very similar to Isaac Taylor's map of the city of 1757 for common areas. However, the *Atlas* map shows occasional extra buildings and additional labelling such as the timber yards. Content has been updated by the portrayal of the city gaol by Bye Street Gate which was mainly built by 1796.	'City of Hereford', 'J. Taylor' [Isaac Taylor of Ross], engraved by Richard Benning, 1757.[28] CBTM: 212028.[29]
'LIVERPOOL'	1.8.1807 CBTM 18406	Unusually, Cole & Roper's map portrays buildings as shaded, blocked areas without individual detail, following a long tradition of building representation on maps of Liverpool. The style of shaded building blocks was to be found on all recent maps of the port, with the exception of Horwood's map of 1803. Cole & Roper's map of 1807 continued to use this style of representation to portray the rapid development at the periphery of the built-up area. The *Atlas* map shows much more development than any earlier map and identifies the new gaol (in use by 1793 but not fully open until 1811), the barracks, the blind asylum (built in 1800), and the Union Newsroom in Duke Street (built 1800).	None identified, but possibly based, as a starting point, on 'Plan of the town of Liverpool from a late accurate survey which includes all the additions & new erections to the year 1795'. Published by Robert Phillips [CBTM: 194546]. Although there are maps of Liverpool dated later, this map shows the most advanced stage of development and expansion.[30]
'MANCHESTER & SALFORD'	1.4.1807 CBTM 18407	The *Atlas* map was engraved from a survey by 'Thornton' who was either, probably, John Thornton (fl. 1793–1804)[31] of Manchester or, possibly, Richard Thornton (*c.*1805-1839) of Preston, and later Manchester (from 1838).[32] John had engraved William Green's plan of Manchester & Salford of 1794, CBTM: 19629 and Richard would survey Bancks & Co's plan of Manchester & Salford published in 1832, CBTM: 19290. G[errard?] Bancks & Co., Manchester printers and publishers at the 'Corner of St. Ann's-Square' and later at Exchange Street, and 'Thornton' produced the 'Plan of Manchester & Salford' *c.*1800 which formed the basis of Cole & Roper's map. Building delineation of common development remained the same but the *Atlas* map shows new buildings, expansion, and new labelling. The Union Corn Mill was added on the Rochdale Canal and the delineation of the Lying-in Hospital had been changed.	'A plan of Manchester and Salford', Bancks & Thornton, *c.*1800. CBTM: 19203

Table 1 Town Maps in the *British Atlas*, 1810

Map	Date/CBTM	Note	Source
'NEWCASTLE UPON TYNE & GATESHEAD'	1.2.1808 CBTM 18408	The Cole & Roper map is virtually identical with the plan of Newcastle-upon-Tyne & Gateshead engraved by Ralph Beilby in 1788 for John Brand's history of Newcastle-upon-Tyne (1789). The only differences are in the addition or removal of a very few buildings, and one changed configuration.	'A plan of Newcastle upon Tyne and Gateshead 1788', engraved by R. Beilby, from John Brand's *History and antiquities of the town and county of Newcastle upon Tyne* (1789) CBTM 19362.
'PLAN OF THE TOWN OF NEWPORT' [inset on the map of 'ISLE OF WIGHT']	1.10.1805 CBTM 21120	Cole & Roper's inset map of Newport on the map of the Isle of Wight is virtually identical with John Malham's map of the town of 1795, produced for John Albin's *Vectiana or a companion to the Isle of Wight* (1802). The *Catalogue* notes that Malham's map 'appears to derive from Andrews (1775)'. In fact, Andrews' inset of 1775 had first been published in 1769 (not in the *Catalogue*). However, it is clear that Malham's map is not derived from the inset of 'A plan of the town of Newport' on John Andrews' 1775, second state, large-scale map of the Isle of Wight which is a very sparse production in comparison with Malham's map.	'A plan of the town of Newport', J. Malham, 1795. CBTM:19872.
'NORTHAMPTON'	1.8.1807 CBTM 18409	Cole & Roper's map is clearly taken from the plan of Northampton surveyed by John Noble & Richard Butlin and engraved and published by Thomas Jefferys in 1747. As is usual, the *Atlas* map has been updated with the latest developments, notably by the identification of the new General Infirmary, which moved to its site beyond the 'Old Ditch' in 1793, and the County Gaol, built in 1792-4 to the south of the County Hall.	'A plan of the town of Northampton survey'd in MDCCXLVI by Messrs. Noble & Butlin, & engraved by Thos. Jefferys'. CBTM: 185634.
'NORWICH'	1.11.1807 CBTM 18410	Cole & Roper's map is a very close copy of Anthony Hochstetter's plan of 1789 with only the slightest variation in the delineation of some buildings, such as Ber Street Gate, and in labelling. The Dutch Church replaces Hochstetter's cathedral in an otherwise identical list of references to the 36 churches. Cole & Roper have 12 more references to other features which are also listed by Hochstetter or shown on his plan.[33]	'Plan of the city of Norwich', Anthony Hochstetter, 1789. CBTM 20584.
'OXFORD'	1.2.1808 CBTM 18411	Cole & Roper's map is taken from the plan of the university and city of Oxford inset on Richard Davis' large-scale map of Oxfordshire, surveyed in 1793–4, and engraved and published by John Cary in 1797.[34] The inset is similar in scale and detail to Isaac Taylor's plan of 1751 but has been updated, particularly by the addition of the Oxford Canal.[35] However, there are significant differences. Some labelling is different: Davis shows churches and some other buildings pictorially, whereas Cole & Roper delineate them in plan; and the Cole & Roper map is not as extensive in the north.	'A plan of the university and city of Oxford', Richard Davis, 1797. CBTM: 18562.
'ST. ALBANS'	1.1.1810 CBTM 18412	Cole & Roper's map is a direct copy of the plan of St Albans by John Andrews and Matthew Wren, published by Andrew Dury in 1766, apart from the incorporation of the Roman settlement of Verulamium from Stukeley's plan of 1721.[36]	'Plan of the town of St. Albans in Hertfordshire by I. Andrews and M. Wren 1766'. CBTM 20709.
'WINCHESTER'	1.2.1805 CBTM 18486	Cole & Roper's map is a close copy of the plan of the city of Winchester, surveyed by Thomas Milne in 1791, inset on his large-scale map of Hampshire, surveyed 1788–90 and published in 1791. The Cole & Roper version has slight differences in labelling, a few additional names, one building missed and different references. There are some minor differences in building delineation, for example along Colebrook Street. The copying of Milne is confirmed by the *Atlas* map's continued labelling of Jewry Street as Gaol Street, as on Milne's map. Jewry Street was known as Gaol Street only for a brief spell in the eighteenth century.	'Plan of the city of Winchester by Thos. Milne surveyor 1791'. CBTM: 18553.
'WORCESTER'	1.2.1808 CBTM 18487	George Young (1750-1820),[37] the Worcester mapmaker had produced a spectacular map of the city in 1779, CBTM 20190.[38] He updated this map in 1790 for inclusion in Valentine Green's history of Worcester, published in 1796. Young's updated map anticipated the completion of the Worcester & Birmingham Canal and the construction of the Diglish and Lowesmoor basins, in fact, the last 16 miles of the canal through Worcester to the River Severn were not opened until December 1815. Young then, presumably, reduced his map to produce the *Atlas* map which has virtually identical topography, building delineation and labelling, but with a slightly reduced list of references.	'Plan of the city and suburbs of Worcester ...', 'London, Publish'd by V. Green, Novr. 16, 1795. Surveyed by George Young, Worcester, 1790', engraved by John Russell.[39] In *The history and antiquities of the city and suburbs of Worcester.* Vol. I. 'By Valentine Green. Fellow of the Society of Antiquaries, London, MDCCXCVI'. CBTM 23157.

additions made to sources for inclusion in the *Atlas*. However, correspondence and minimal local updating could hardly account for the delineation of expanding urban areas as shown for Liverpool and other towns. While whole ancient town centres, particularly of medieval walled towns, remained basically the same over decades, expansion and ribbon development on the fringes of the built-up areas were not shown by earlier maps. Such expansion must have been delineated from some sort of original survey. In the cases of Bedford,[19] Carlisle and Colchester, no possible sources have been identified at all, suggesting that there had been new, original surveys of those towns. It is wrong to dismiss most of the town maps prepared for the *Atlas* simply as mere copies of earlier maps as has been proposed in previous literature. Detailed analysis shows that the town maps are not simply compilations from published sources, varied and sometimes obscure as they were; they involve original survey and conscientious updating from well-chosen and carefully considered sources, both published and unpublished, often emanating from local expertise and private correspondence.[20] The makers of the high quality town maps in the *British Atlas*, although, at first sight, following a long tradition of plagiarism in town map production, deserve to be reassessed as among the most diligent of all British town mapmakers.

Notes

1 Henceforward referred to as the *Atlas* maps.

2 See R.J.P. Kain & R.R. Oliver, *British town maps. A history,* London: The British Library, 2015.

The town maps appearing in the *British Atlas* (1810) are all included in the online *Catalogue of British Towns* [henceforth simply referred to as the *Catalogue*] which accompanies Kain & Oliver's recent, long-awaited history of British town maps. It can be accessed at http://townmaps.data.history.ac.uk. Each entry in the *Catalogue* has a unique identifying number CBTM or 'Exeter'. Entries identify the key cartographical and other features of each map. Unfortunately, in some cases, town maps have been missed and, in many cases, later issues and copies are not identified and described. In the table accompanying this article, the identifying CBTM number is noted when a map is recorded in the *Catalogue*. The origins of each map are discussed and, where possible, conclusions reached as to the sources drawn upon to create the *British Atlas* map and to the extent of originality or plagiarism.

3 *The British atlas; comprising a complete series of county maps; and plans of cities and principal towns; intended to illustrate and accompany The Beauties of England and Wales … London: Printed for the Proprietors; and sold by Vernor, Hood and Sharpe, 31, Poultry; Longman & Co., Paternoster-Row; J. & A. Arch, No. 61, Cornhill.* (1810).

4 The full-page town maps [Newport is an inset on a map of the Isle of Wight] are beautifully reproduced at an enlarged size in A. Baynton-Williams, *Town and city maps of the British Isles 1800–1855,* London: Studio Editions, 1992.

5 The origins and publication history of *The Beauties of England and Wales* are summarised in R.A. Carroll, *The printed maps of Lincolnshire 1576–1900. A Carto-bibliography. With an appendix of road-books 1675–1900,* Lincoln: The Boydell Press for Lincoln Record Society, 1996. From J. Britton, *The auto-biography of John Britton …. in three parts: viz. Part I. Personal and literary memoir of the author, Part II. Descriptive account of his literary works. Part III. (Appendix) Biographical, topographical, and miscellaneous essays. Copiously illustrated …* London: J. Britton, 1850.

6 I. Maxted, *London book trades 1775–1800*, Folkestone: Dawson, 1977.

7 For biographical details of John Roper, see L. Worms & A. Baynton-Williams, *British map engravers. A dictionary of engravers, lithographers and their principal employers to 1850*, London: Rare Book Society, 2011.

8 Kain & Oliver, *British town maps,* pp. 125–127.

9 Britton, *The auto-biograph…*, quoted by R.A. Carroll, *The printed maps of Lincolnshire*. For biographical details of William Faden, see Worms & Baynton-Williams, *British map engravers*. See also L. Worms, 'The maturing of British commercial cartography: William Faden (1749–1836) and the map trade', *Cartographic Journal*, 41, 2004.

William Faden eventually took over full ownership of the Thomas Jefferys family business in 1783, acquiring the remnants of its stock. This became the foundation of an unrivalled collection, particularly of large-scale British county maps. Certainly, Brayley, Britton, Cole and Roper would have had access to Bradford's map of Coventry, Armstrong's Durham, Noble & Butlin's Northampton, all engraved by Thomas Jefferys, and to Milne's Hampshire, published by Faden himself. However, Jefferys also engraved maps of other English towns. These were, presumably, also available in Faden's stock but were never drawn upon as sources. Other source maps for the *Atlas* seem to have had no connection with Faden and probably were not from his collection.

Jefferys is misspelt throughout both in the online *Catalogue* and Kain & Oliver, *British town maps.* For biographical details of Thomas Jefferys, see Worms & Baynton-Williams, *British map engravers.* For a discussion of the use of acquired stock as sources in another case, see D. Smith, 'Town plans in the Collection of Andrew Dury, *c.*1764', *Bulletin of the Society of Cartographers*, 45, Nos. 1 & 2, 2011.

10 R. Frostick, *The printed plans of Norwich 1558-1840. A carto-bibliography.* Norwich: Raymond Frostick, 2002, Entry no. 48.

11 Carroll, *The printed maps of Lincolnshire*. Entry no. 62.

12 R. Frostick, *The printed maps of Norfolk 1574–1840. A carto-bibliography.* Norwich: Raymond Frostick, 2011. Entry no. 71.

13 Kain & Oliver, *British town maps*, p.127. For a general discussion of plagiarism in early town representation, see D. Smith, 'The enduring image of early British townscapes', *Cartographic Journal*, 28, 3,1991.

14 For a full carto-bibliography of the *Atlas*, and atlases published by John Cary and Charles Smith, see D. Smith, *Antique maps of the British Isles*. London: B.T. Batsford, 1982. Entry no. 31, chap. VII.

15 D. Hodson, *The printed maps of Hertfordshire 1577–1900,* Folkestone: Dawson 1974.

16 Carroll, *The printed maps of Lincolnshire,* p. 170.

17 Britton, *Auto-biography*. See Carroll, *The printed maps of Lincolnshire*, p. 169.

For a discussion of how town plans were produced for another work, see D. Smith, 'The preparation of the town plans for Lysons' *Magna Britannia*', *Cartographic Journal*, 32, 1995.

18 For discussion of canal maps and canal representation on other maps, see D. Smith, *Maps and plans for the local historian and collector*, London: Batsford, 1988; *Canal & railway plans*, London: The Historical Association: Short guide to records, No. 42, 1993; 'Navigable waterway and railway maps' in H. Wallis & A. McConnell, eds., *Historians guide to early British maps*, London: Royal Historical Society: Guides and Handbooks, No. 18, 1994; D. Smith, 'British urban mapping of waterways, canals and docks', *Cartographic Journal*, 35, 1, 1998.

19 No source for the town map of Bedford is noted in B. Chambers, *Printed maps and town plans of Bedfordshire 1576–1900,* Bedford: Bedfordshire Historical Record Society, vol. 62, 1983.

20 This conclusion contradicts the view expressed in Kain & Oliver, p. 127. For a discussion of town plans inset on large-scale county maps, see D. Smith, 'Inset town plans on large-scale maps of

Great Britain', *Cartographic Journal*, 29, 2, 1992.
21 The *Atlas* map of Chester is illustrated as Fig. 85 in Kain & Oliver, p. 129 with the following caption: 'John Britton's *The Beauties of England and Wales* (1804–10) is a compilation rather than an original work of research, intended to appeal at least as much to those who yearned an aura of antiquarianism as those who wanted scholarly accuracy. Production values are high; this is clearly apparent in the maps of towns, exemplified by this one of Chester, which includes the arms of the bishopric as well as the city'. The dates 1804–10 were in fact the dates of first publication of the maps which appeared in *The British Atlas* in 1810; the *Beauties of England and Wales* was published between 1801 and 1815 without the maps under the direction of both Britton and E.W. Brayley.
22 V. Scott, ed., *Tooley's dictionary of mapmakers*. Revised edition, Q-Z, Riverside, CT: Early World Press, 2004 notes Thomas Sharp (no dates) without recognising that he was the antiquarian of Coventry. It erroneously associates him with the publishing consortium of Sharp, Greenwood & Fowler.
23 T. Sharp, *An epitome of the county of Warwickshire containing a brief and descriptive account of the towns, villages and parishes, with their hamlets*, London: T. Sharp, 1803.
24 A.S. Bendall, *Dictionary of land surveyors and local mapmakers of Great Britain and Ireland 1520–1850*. 2nd edn, Folkestone: Dawson, 1997. Also, noted, without detail, in J. French, ed., *Tooley's dictionary of mapmakers*, Revised edition, E-J, Riverside, CT: Early World Press, 2001.
25 No source is noted in *Exeter working papers in book history. Biographical and bibliographical information on the book trades*, Town plans of Exeter, bookhistory blogspot.co.uk, Ian Maxted, 2016: 'appears to be independent of Tozers' (Charles Tozer), p. 7. i.e. CBTM 18255. F. Bennett & K. Batten, *The printed maps of Exeter 1587–1901*, Exeter: Little Silver Publications, 2011 seems to suggest that the town map was based on the Tozer map. Entry No. 16 seems to imply that the Exeter map did appear with the *Beauties of England and Wales* and in the later versions of the *Atlas* (erroneously dated 1805) published after 1810 which it did not. It also misnames Vernor as 'Vernon' and identifies Hayman as the 'son of the Exeter surveyor'. However, it does note another example of anticipation in town portrayal in the case of the Quakers' Meeting House built in Magdalen Street in 1806 which was already shown on the 1805 map and noted in the key. The entry also identifies the author of the county map of Devon as 'Roger' Cole, whereas in Bennett & K. Batten,*The printed maps of Devon: County maps 1575–1837*, Tiverton: Devon Books, 1996 Cole is named George. This latter work also notes that the maps did not usually accompany the *Beauties* and correctly names Vernor.
26 The *Catalogue* transcribes the map title incorrectly.
27 For biographical details of Henry Mutlow, see Worms & Baynton-Williams, *British map engravers*.
28 Ibid.
29 B.S. Smith, *Herefordshire maps 1577 to 1800*, Little Logaston, Wooton Almeley: Logaston Press, 2004; E.M. Rodger, 'Large scale English county maps and plans of cities not printed in atlases. Part 14. Herefordshire', *The Map Collector*, 53, 1990.
30 No source for the Cole & Roper map is noted in *Liverpool Packet No. 2. Liverpool set in its context of Merseyside and Deeside*, Scouse Press, n.d.
31 For biographical details of John Thornton, see Worms & Baynton-Williams, *British map engravers*. V. Scott, ed., *op. cit.* notes John Thornton, without dates, as the engraver of only William Green's plan of Manchester & Salford, '1807'! Not noted in Bendall.
32 Bendall, *Dictionary of land surveyors;* V. Scott, ed., *Tooley's dictionary of mapmakers* notes Richard Thornton, without dates, as the surveyor of the *Atlas* map, but this is doubtful.
33 Frostick, *The printed plans of Norwich*, p. 65.
34 For biographical details of John Cary, see Worms & Baynton-Williams, *British map engravers*. See also D. Smith, 'The Cary family', *Map Collector*, 43, 1988; 'John Cary (1755–1835), cartographer', *Oxford Dictionary of National Biography*, 2004.
35 B. Kentish, *A catalogue of large-scale county maps of England and Wales published between 1705 and 1832*, Oxford: Brian Kentish, 1997, p. 48.
36 For biographical details of Andrew Dury see: Worms & Baynton-Williams, *British map engravers*. See also Smith, 'Town plans in the Collection of Andrew Dury.
37 Noted in both Bendall, *Dictionary of land surveyors* and Scott, ed., *Tooley's dictionary of mapmakers*.
38 Scott, ed., *Tooley's dictionary of mapmakers* notes a second edition of this map of 1795. This is a confusion with the 1795 map surveyed for Valentine Green.
39 For biographical details of John Russell, see Worms & Baynton-Williams, *British map engravers*.

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David Smith *is a retired Senior Lecturer in History and Head of Academic Studies. He has written extensively on early British mapping, including three books and over seventy articles and book reviews, with particular emphasis on town mapping and Victorian mapmakers.*

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MAPPING THE MEDITERRANEAN

By the cartographers of medieval Islamic societies

Cyrus Alai

The Mediterranean with its shores and islands has always been the centre of attention in Islamic geography and cartography. During the Islamic medieval period, i.e. from the ninth to the fifteenth century, maps were usually prepared to be included in geographical books. Most often they, and their later copies, contained one world map and twenty-two regional maps. The consistency of this arrangement throughout geographical texts was recognised by Konrad Miller who named the set *Islam Atlas*.[1] Nearly, all these sets include a one-page map of the Mediterranean, mostly hand coloured and entitled 'The Roman Sea' [Bahr Rum].

In Islamic cartography in general, and in the mapping of the Mediterranean in particular, the two following observations are noteworthy:[2]

1 The perception of the Mediterranean by medieval Islamic societies was different from that of the Romans [Europeans]. In Ptolemaic geography, the world was divided into seven climate zones [climes] encircling the globe, north and south of the equator. The same tradition was used in the Graeco-Muslim tradition, best represented by the maps of al-Idrisi. These climes were measured according to the length of the longest day of the year in the centre part of each zone.

However, Balkhi (850–934), who founded the second school of Islamic geography, adopted the old Persian tradition of dividing the inhabited world into seven geographical regions, comprising twenty-two states, called *Kishvar* in Persian and *Iqlim* in Arabic. These regions were not affected by the Roman way of dividing the world into three continents. Therefore, there was no mention of the terms Asia, Africa and Europe on any Islamic map. Later, when the Romans parted from the Ptolemaic clime system and adopted the system of geographical regions, they ignored the Islamic seven regions and followed the old European concept of dividing the world into three continents, in which the Mediterranean played a major role in separating Asia, Africa and Europe from each other.

The Islamic cartographers were aware of this European concept but were not influenced by it. The author of the highly praised geographical text *Hudud al-'Alam* (The Regions of the World), written in 982, in Persian, reports:

> *The Romans have said that all the cultivated lands of the world form three parts. The first is that which, on the east, has the Eastern Ocean [Pacific] and the limits of Toghuzghuz and Khirkhiz; on the south, the Great Sea [Indian Ocean] up to the Qulzum [Red Sea]; on the west, the countries of Syria and Rome [Byzantium] up to the strait of Constantinople; [and on the north] the Saqlab country and the farthest limit of the cultivated lands of the world. This part is called Asia Major. This part constitutes two-thirds of all the cultivated lands [lying] in the northern Hemisphere. The second part has on its east the country of Egypt; from the Equator to the Roman Sea, on its south [of the Roman Sea] is a desert, lying between the land of Maghrib [Morocco] and the land of Sudan; on its west lies the Western Ocean [Atlantic]; on its north, the Roman Sea. This part of the world is called Libya [Africa] and constitutes one-twelfth of all the cultivated lands of the world in the northern Hemisphere. The third part has on its east the strait of Constantinople; on its south the Roman Sea; on its west the Western Ocean [Atlantic], and on its north the end of the cultivated lands in the north. This part is called Europe, and forms one-quarter of all the cultivated lands in the world.*[3]

The present European system of geography is, therefore, a mixture of the Persian *Kishvar* system and the European concept of continents, rejecting the Ptolemaic clime system altogether.

In the European perception, the Mediterranean was the sea that divided the world into three continents, while according to medieval Islamic cartographers, it was a sea which united all of its shores, making it one single geographical entity.

2 Some of the Islamic maps, such as the ninth-century world map of Ma'mun and the larger world map of al-Idrisi (1154) seem to have been constructed according to the Ptolemaic tradition in which the landmasses and seas are depicted as closely as possible to their real shapes. However, most Islamic maps followed the symbolic tradition, supported by lengthy geographical texts. This tradition, which was also used in the European medieval mappa mundi, remained dominant throughout the Islamic medieval period.

The Mediterranean in the first Islamic world map

The golden age of Islamic culture began in the ninth century with the second Islamic dynasty when the Abbasids ruled from Baghdad. The period produced famous and influential caliphs such as Harun al-Rashid (r.786–809) and al-Ma'mun (r.813–833) who were both great patrons of learning.

The Map of Ma'mun was constructed at the Bayt-al-Hikmah (House of Science) in Baghdad between 813 and 833. This institution was established, possibly, as early as 749 at the beginning of the Abbasid rule, mainly for the purpose of translating Greek, Persian and Indian scientific works into Arabic. However, it was during the reign of the seventh Abbasid caliph al-Ma'mun, and under his patronage, that Bayt-al-Hikmah grew to become a comprehensive academy for the sciences, including astronomy, geography and cartography. It also served as a repository for ancient manuscripts by Greek, Persian and Indian masters.[4]

During that period the main elements required for a scientific revival in the Islamic world were in place:

- An expanding Islamic world with Arabic as the official language was well established, where scientists could freely travel, exchange information and discuss their views.
- Baghdad, the capital of the Abbasids, had become a major cultural and scientific centre. A large number of scholars from all over the Islamic world, and beyond, were attracted to the well-paid academic positions offered by Bayt-al-Hikmah.
- Al-Ma'mun not only advocated scientific work and actively supported and honoured scholars, but he also imposed on his subjects the Mu'tazilite doctrine which reflected the influence of Aristotle. Without breaking with orthodoxy, the Mu'tazilites, members of an Islamic philosophical school, aimed at harmonising reason and faith claiming that reason was at least equal with revelation.[5]
- When al-Ma'mun defeated the Eastern Roman army and took the city of Angora [Ankara], he forced the Roman Emperor to cede to him a large number of important scientific Greek books which were previously unknown in the Islamic countries. These volumes, which included the works of Marinus of Tyre and Ptolemy, arrived in Baghdad from Constantinople loaded on over a hundred camels. The acquisition of books continued over a long period of time and were drawn from many sources. The rich library of Bayt-al-Hikmah contained more than 400,000 volumes of significant manuscripts, many of which were translated into Arabic. Two major astronomical observatories were attached to the same institution, one installed in Baghdad, the other in Damascus, where scholars devised new astronomical tables, correcting the ancient ones created by Ptolemy.

This harmonious blending of cultural factors, borrowed from Greece, Persia, India and other regions, enabled Islamic culture and science to develop to a high degree of refinement in many fields, including geography and cartography. It was in such an environment, and after an interval of over six centuries, during which Ptolemaic geography had remained stagnant, that the caliph al-Ma'mun directed a large group of scientists to construct a new world map. Al-Zuhri (*c.*1150), working on the descriptive Ma'munic geography, reports that some seventy scientists were employed for the project.[6] Al-Masudi (*c.*896–956), known as the Herodotus of the Arabs, claimed to have seen the Ma'munic atlas at Bayt-al-Hikmah:

> *I have seen these climates depicted in various colours, without a text, and the best I have seen has been in the book* Jughrafiya *[Geography] of Marinus and the commentary to* Jughrafiya *of the division of the Earth, and in* Surat-al-Ma'muniyah *[the Map of Ma'mun] that Ma'mun ordered to be constructed by a group of contemporary scholars to depict the world with its spheres, stars, lands and seas, the inhabited and uninhabited regions, settlements of peoples, cities, etc. This was better than anything that preceded it, either the geography of Ptolemy, or the geography of Marinus, or any other.* [7]

The map of Ma'mun and the related descriptive geography could not be traced for centuries, and was assumed lost, until 1875 when German orientalist W. Spitta discovered, a geographical manuscript entitled *Surat-al-Ard* (The Configuration of the Earth) in Cairo. On its cover it is attributed to Ibn-Musa al-Khwarizmi (*c.*780–*c.*850). It is a revised and completed version of Ptolemy's *Geography*, consisting of a list of 2,402 coordinates of cities and other geographical features following a general introduction.[8] Italian scholar C.A. Nallino was the first to recognise in it the work of the geographers commissioned by Ma'mun. Nallino regards al-Khwarizmi's main role in the project of the world map, as recording the data of geographical

positions and other information from the map of Ma'mun and other maps made by the Ma'munic Commission of which he was a member. These other maps have not survived.[9]

Fuat Sezgin regards al-Khwarizmi's unique manuscript, which comprises the Ma'munic tables of the geographical co-ordinates, as one of the greatest Islamic contributions to geography, for the making of this map demanded a large number of surveys to be carried out in various regions of the inhabited world during Ma'mun's lifetime and thereafter.[10]

A. Jokhosha, while working with Sezgin, reconstructed the Ma'munic world map following the tables of co-ordinates contained in al-Khwarizmi's *Surat-al-Ard* without making any corrections or alterations (Fig. 1).[11]



Fig. 1 The World Map of Ma'mun, reconstructed by A. Jokhosha, according to the tables of co-ordinates in the original al-Khwarizmi's manuscript. This reconstruction was designed with the north at the top however, for easy comparison with Fig. 2 which is orientated with south at the top, it has been turned to have south at the top. The inscriptions are in Arabic. Courtesy Fuat Sezgin, *Geschichte des Arabischen Schrifttums*, vol XII, Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 2000, p. 4.

Jokhosha's reconstruction would have been of little value if no early copy of the map could be traced. Fortunately, in 1986 a medieval Arabic manuscript came to light, which contained a copy of four Ma'munic maps (Fig. 2). It was found in the library of Topkapi Museum, Istanbul. *Masalik al-Absar fi Mamalik al-Amsar* (Ways of Perception of the Civilised Countries) was composed in 1340 by al-Umari (d.1349). It includes the Ma'mun world map and three maps of the northern climates.

The shape of the Mediterranean on the map of Ma'mun (south at the top) is visibly closer to reality than many later Islamic maps. The coastline of Africa from the Atlantic Ocean (Encircling Ocean) up to Palestine, and of Asia up to the Aegean Sea, is sketchy, but very advanced. The coastline of Europe is less so, but shows Spain, Italy, the Adriatic Sea and Greece in correct sequence. Only the waterway to the Black Sea – Dardanelles, Marmara and Bosporus – is greatly oversized. The islands of Mallorca, Corsica, Sardinia, Sicily, Crete and Cyprus are shown in the right sequence, but not shape and scale. Sicily is depicted as a large triangle, indicating its importance in the Islamic world at that time.



Fig. 2 A medieval copy of the World Map of Ma'mun, contained in the al-Umari's manuscript of 1340. South is at the top. Courtesy Fuat Sezgin and the Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität.

It is notable that the reconstructed Ma'munic world map by Jokhosha and al-Umari's manuscript version are very similar, which strengthens the authenticity of both al-Khwarizmi's and al-Umari's manuscripts.

When comparing the map of Ma'mun with the earlier Graeco-Roman maps, one should bear in mind that Eratosthenes (276–194 BCE) had calculated the western half of the Mediterranean to be one-third shorter, and the distance between Norbonne [on the French Mediterranean coast] and Africa twice the actual size. Polybius (200–118 BCE) depicted the Mediterranean as a long narrow corridor wherein the

western half is twice its real length, but the eastern half is shorter. Artemidorus (fl.100 BCE) offered a better rendering. Ptolemy's world map is less satisfactory, for he extended the axis of the Mediterranean by about 52 per cent to about 64 degrees (actual size is 42 degrees), and showed the coast of Tunisia to be less accurate.

In western cartography, it would be some fourteen centuries, before more accurate maps of the Mediterranean were made; the Catalan sea charts, for example.

When Ma'mun's scientists started to examine, correct and improve their inherited geographical knowledge from the Greeks and others, they began by measuring the circumference of the equator, which they did by surveying distances between several locations. Although, they were apparently relying on the same two methods known to the Greeks for determining longitudes, namely observations of lunar eclipses and travellers' reports, their results proved to be more accurate than their European predecessors. As a result, the length of the Mediterranean was decreased from Ptolemy's 64 degrees to 52; still 10 degrees longer than its actual size. Nevertheless Ma'mun's scientists made a noticeable improvement to the knowledge of the Mediterranean.[12]

The Mediterranean in other Islamic maps

Konrad Miller was one of the first scholars to systematically study Islamic maps. He examined nearly all the surviving Islamic charts of the Mediterranean and compared thirteen different early copies which were based on the original tenth-century maps of Balkli/Istakhri, Ibn-Hawqal (d. *c.*978) and al-Maqdasi (*c.*945–991).[13] Figures 3–5 are sketches he made of the copies, and to facilitate their study, he provided Latinised translations of the Arabic toponyms. He published them between 1926–1931 in his six-volume *Mappae Arabicae Arabische Welt- und Länderkarten des 9.-13. Jahrhunderts* which is regarded as containing the most comprehensive collection of Islamic maps. In Islamic books of geography, while the original texts have remained intact, few of the original maps have survived. Figures 3–5 demonstrate how the copies varied according to the artistic style and geographic knowledge of the copyist.

These maps and their accompanying texts, which appeared in books on geography, were in use for a few hundred years without any noticeable changes. For instance the following short description of the Mediterranean can be found in several early Islamic texts:

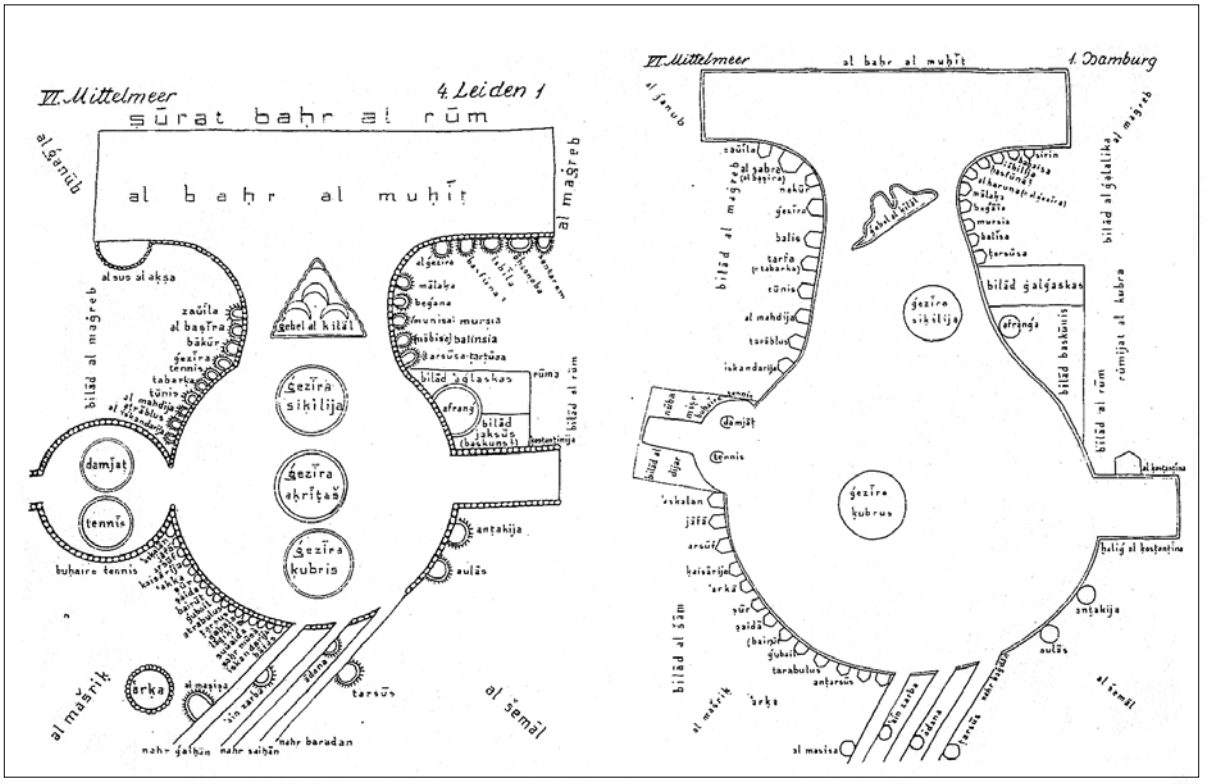
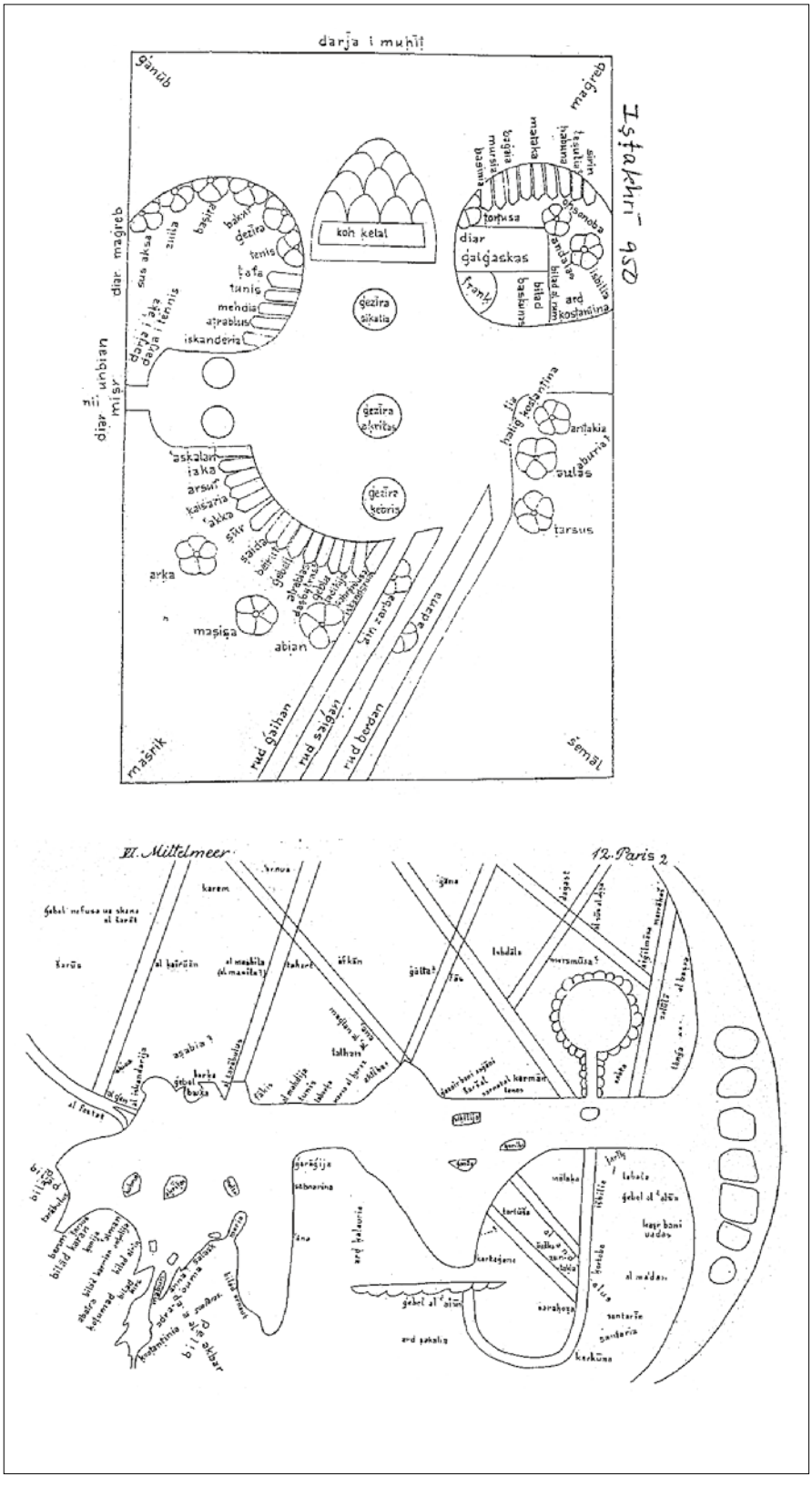
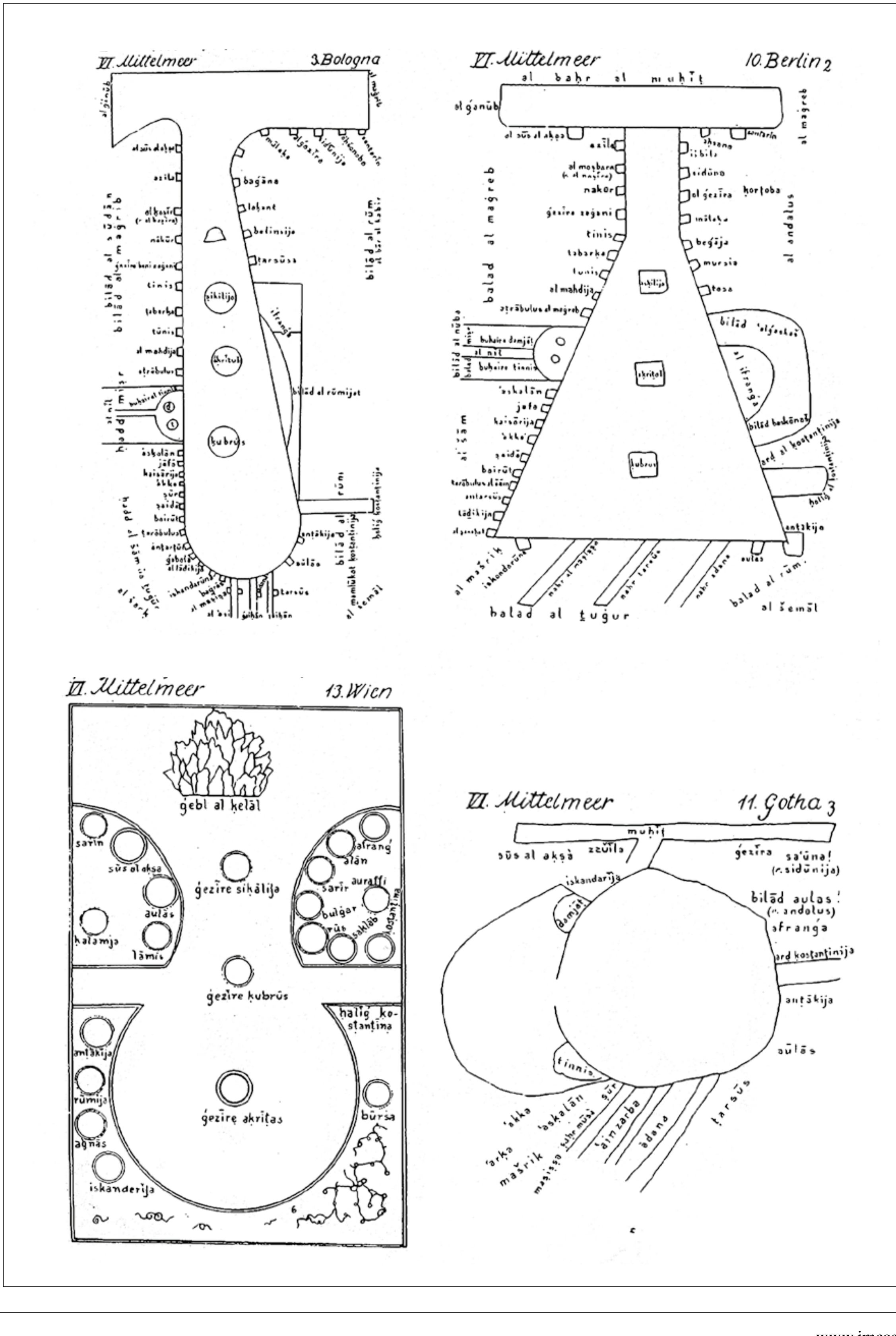


Fig. 3 Latinised versions of copies the Mediterranean Sea, drawn by Konrad Miller from Istakhri, 950 (Left map) and Balkhi, 921 (Right map). West is at the top. The Mediterranean is depicted in the form of a large circle with a neck. Major islands, ports and mountains are shown. *Mappae Arabicae*.



Left
Fig. 4 Latinised version of two different maps of the Mediterranean Sea, drawn by Konrad Miller. Upper map by Istakhri 950, with west at the top. The lower map is copied from Ibn Sa'id, 1276. Here south is at the top and the anchor shape at the far right is the Atlantic Ocean. ***Mappae Arabicae.***

Opposite page
Fig. 5 Latinised version of maps of the Mediterranean Sea by four different mapmakers, drawn by Konrad Miller. Clockwise from upper left corner: Balkhi, 921 from codex Bologna; Maqdasi, 985, from codex Berlin; Tusi Ahmad, 1160, from codex Gotha; Tusi Nasir-al-Din, 1270, from codex Vienna. While these maps have different shapes, west remains at the top. The main islands and ports are shown. ***Mappae Arabicae.***


VI. Mittelmeer
3. Bologna
VI. Mittelmeer
10. Berlin 2
al bahr al muhīt
al ǵanūb
al magreb
balad al magreb
al andalus
bilād al afranǵa
balad al tuǵur
al šemāl
VI. Mittelmeer
13. Wien
gebl al kelāl
ǵezīre sikālija
ǵezīre kubrūs
ǵezīre akritas
halīǵ ko-stantīna
antākija
rūmija
iskanderija
būrsa
VI. Mittelmeer
11. Ǵotha 3
muhīt
sūs al aksà
ǵezīra
bilād aulas
afranǵa
ard kostantinija
antākija
aulās
tarsūs
ādana

> *When one sails along the shores from Basra, close to Tangier, on the Strait of Gibraltar up to Egypt, and then to the core of Mesopotamia, say Tarsus, and returns via Asia Minor, Constantinople, the Lands of Franken, up to Andalusia, ending [arriving back] in Algeciras [in Spain, near Gibraltar], one need not to cross any rivers and canals [gulfs]. There, around Sirin [Santarem], where the furthest frontier of Islam lies, the sea flows back into the Ocean. Both sides of the Sea [Mediterranean] are the most populated shores on Earth. Here the Muslims and the Romans [Christians] have sea encounters, in which each side employs a hundred ships or more.*[14]

Istakhri reported that 'Antalya is a Roman fortress on the shore with a large population which leads to a strait with salty water, called the Strait of Constantinople. They [the Romans] have fixed a chain across this strait to stop ships from crossing'.[15]

Written in the tenth century, the anonymous author of *Hudud al-Alam* (The Regions of the World) wrote:

> *Another sea is the Roman Sea [Mediterranean] in the western parts. The shape of this sea is conical. Its western limit adjoins the Western Ocean [Atlantic]; on its northern coast lie the countries of Andalusia, the Franks and the Byzantines; on its eastern coast lie the regions of Armenia and some parts of Rome (Byzantium); on its southern limit are the regions of Syria, Egypt, Africa and Tangier. This sea has two straits, of which the one serves to connect it with the Ocean, and the other, similar to a river, traverses the middle of Rum [Byzantium], skirts Constantinople and reaches the Sea of Georgians [Black Sea]. And there is no sea round which lie lands more prosperous. The length of this sea is 4,000 miles and its breadth is various. The greatest breadth of the strait of Constantinople is 4 miles, and the narrowest part of the western strait is 10 farsanges* [Persian measurement of distance, approx. 6 km] *and from the one shore the other is barely visible.*[16]

Medieval Islamic maps were small in size and inserted in geographical books. Mainly, they provided a visual for the succession and direction of places, similar to the map of the London underground. These maps were not loaded with any further information, because all the available geographical, geological, ethnological, statistical and other related knowledge were contained in the texts.

They were drawn using few basic shapes which the viewer could identify, for instance: a circle represented an island; a bubble denoted a city; further shapes included a bottle, a hose, a triangle and an ellipse. The texts describe the Mediterranean as a channel or gulf, branching out of the encircling ocean (Atlantic).

Nearly all Islamic maps of the Mediterranean are west oriented, i.e. 'west' is on the top, while on world maps 'south' is usually at the top. However, some Islamic maps of the Mediterranean have the Atlantic Ocean (the Western Ocean) on the top and the four points of the compass at the four corners of the page.

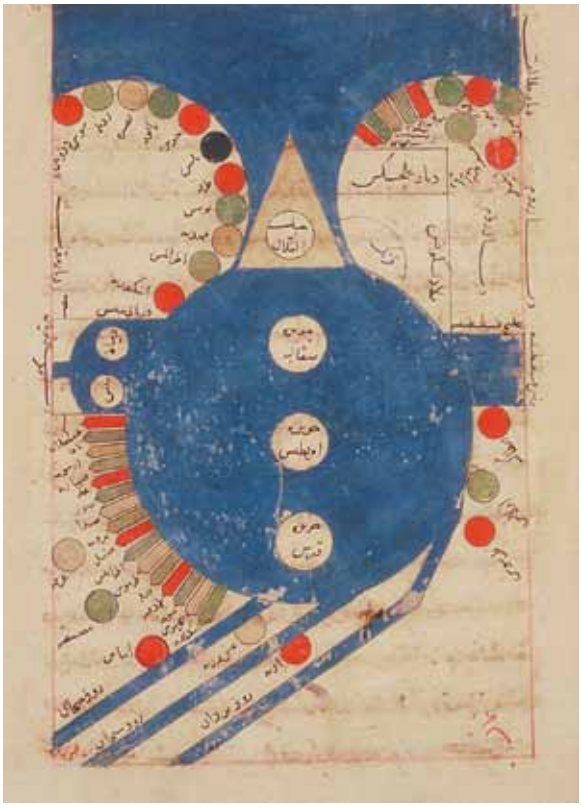


Fig. 6 Map of the Mediterranean by Istakhri, showing the sea in the form of a large circle with a neck like a bottle. West is at the top, three main islands and a number of ports are shown. The Mountain of Qulal is depicted between the Iberian Peninsula and Africa by a large triangle. A few rivers can be seen in the lower part of the map depicted in straight lines.

A triangle frequently appears at one end of the large circle denoting the Mediterranean Sea (Fig. 6). Contrary to one's expectation to see the Rock of Gibraltar at the mouth of the Strait of Gibraltar, one faces Jibal al-Qulal (Mountain of Qulal) in the shape of a large triangle, which according to detailed descriptions in the texts, represents a fortified French island called Iles d'Hyères, near Toulon. Further east, are three circles which represent the three important islands of Sicily, Crete and Cyprus.

One of the later important Islamic world maps, showing also the Mediterranean, is the thirteenth-century map of al-Qazwīnī (1203–1283) which was featured on the front cover of the *History of Cartography*, Volume 2, Book 1 (Fig. 7).



Fig. 7 World Map of al-Qazwīnī from his book *Aja'ib al-makhluqat wa-ghara'ib al-mawjudat* (The Wonders of Creation) written in the thirteenth century. Illustrated is a later copy. South is at the top. The Mediterranean is depicted in the lower right quarter of the map by a crude oval shape, far from reality. Courtesy Forshungsbibliothek Gotha der Universität Erfurt, Ms. orient. A 1507, fol. 95b–96a, © Forshungsbibliothek Gotha.



Fig. 8 The larger World Map of al-Idrisi (mid-twelfth century). It was assembled by Konrad Miller using some sixty sectional maps which have survived. On this south-orientated map the Mediterranean is more realistic, compared with other maps of the time. Courtesy Wikicommons, Creative Commons Attribution ShareAlike License.

On al-Qazwīnī's map the shape of the Mediterranean is very far from a realistic representation. Here the Mediterranean is connected to the Encircling Ocean (Atlantic) by a long narrow strait, lying at the extreme north of the globe. The African coast stretches to the west, and at about Tunisia makes a U-turn extending eastwards up to Asia Minor (Turkey). There, the coastline takes the form of a half-circle, reaching Andalusia (Spain). The Nile is clearly visible and only three islands are depicted. It is noteworthy that many other Islamic maps of the Mediterranean drawn in the thirteen century or earlier are more detailed and more accurate than al-Qazwīnī's.[17]

The reconstructed al-Idrisi's larger world map (1154) depicts the Mediterranean in a more realistic style. When compared with the Hereford mappa mundi, produced some thirty years later, in 1280, the larger world map of al-Idrisi is geographically more advanced (Fig. 8).[18]

In 2002 the Bodleian Library succeeded in acquiring a late twelfth-century copy of an Arabic cosmographical treatise, entitled *Kitab Ghara'ib al-funun wa-mulaḥ al-'uyun*, (The Book of Curiosities of the Sciences, and Marvels for the Eyes). This treatise was compiled by an anonymous author, perhaps in the late eleventh century, probably in the Fatimid

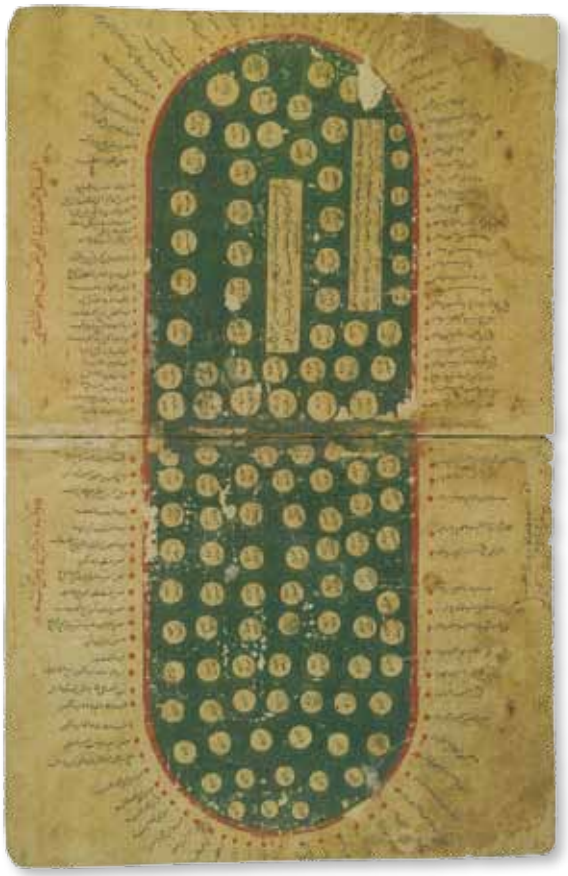


Fig. 9 The map of Mediterranean included in the *Book of Curiosities of the Sciences, and Marvels for the Eyes*. The oblong shape has 121 labels identifying islands and numerous ports. Courtesy of the Bodleian Library, University of Oxford, Ms. Arab. C.90, fols. 30b-31a.



Fig. 10 Detail of the map of the Mediterranean by Piri Re'is (early sixteenth century). Obviously this map was heavily influenced by the European mapmaking traditions of the time. Wikicommons, Creative Commons Attribution ShareAlike License.

Mediterranean, Egypt, Morocco or Sicily. In 2014 it was published with an English translation.[19] It includes two early world maps together with maps and illustrations of the Mediterranean Sea and southern Mediterranean islands. The map of the Mediterranean is unique and is the earliest, in any language, to depict that sea in such detail. The map shows a dark green oblong of water with 120 islands drawn as perfect circles, while the islands of Cyprus and Sicily are shown as large rectangles. Around its edge are 121 labels which list anchorages, bays, cities and fortresses along the Mediterranean coasts (Fig. 9).[20]

The decline of Islamic mapmaking

The traditional cartography of the Islamic societies seems to have peaked in the late thirteenth century. However, there were still a few prominent geographers and mapmakers working until the late fourteenth century and beyond, particularly in Persia and India.

The stagnation of indigenous cartography throughout the Islamic states coincided with the European Renaissance, the translation of Ptolemy's *Geographia* directly from Greek into Latin, and the reconstruction and printing of the Ptolemaic maps. Thus, the fall of Islamic cartography was simultaneous with the rise of European mapmaking. Increasingly influenced by the new practices of mapmaking in Europe, Islamic cartography rapidly lost its originality. Piri Re'is (1470–1554) is held to be the greatest cartographer of the Ottoman period. His book on the Mediterranean and its shores and islands *Kitab Bahriyah* (Maritime Matters) is perhaps the finest cartographic document of the time. The first edition of this book appeared in 1521, and contained 130 charts. The improved second edition was produced in 1526 with 210 charts. However, these and similar charts were heavily influenced by Portuguese, Catalan and other European charts of the period and, therefore, cannot be considered as indigenous or classical Islamic maps (Fig. 10).

Notes

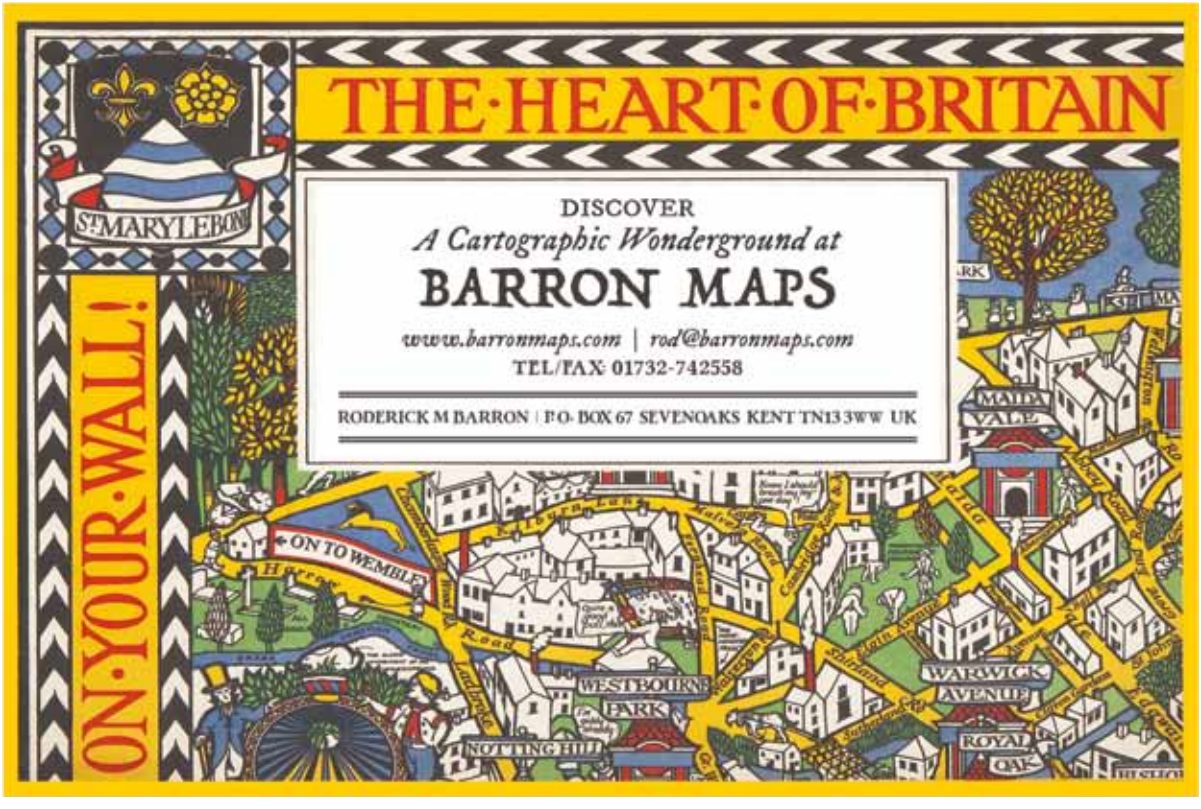
1 Konrad Miller's 6-volume compendium of Islamic maps is the largest anthology of Islamic maps ever published. Konrad Miller, *Mappae Arabicae: Arabische Welt- und Länderkarten des 9.-13. Jahrhunderts,* Stuttgart: Konrad Miller 1926–31.

2 For general information about Islamic cartography see Cyrus Alai, 'The traditional cartography of the Islamic classical societies', *The Portolan*, no. 54, Fall 2002, pp. 9–19; Entry 'Geography iv / Cartography of Persia' The *Encyclopaedia Iranica*, ed. Ehsan Yarshater, Vol. X, New York: Bibliotheca Persian Press, 2001, pp. 444–56; *General Maps of Persia, 1477–1925*, Brill, Leiden 2005, pp. 3–9. *History of Cartography*, Vol. 2, Book 1, Chapters 1–7, Chicago: University of Chicago Press, 1992. More recent publications include Karen C. Pinto, *Medieval Islamic Maps: An exploration*, Chicago: University of Chicago Press, 2016 and Tarek Kahlaoui, *Creating Mediterranean: Maps and the Islamic imagination*, Leiden: Brill, 2017.

3 *Hudud al-'Alam* (*The Regions of the World*, *A Persian Geography*) by an anonymous author written in 982, translated into Russian by the orientalist Alexander Toumansky and published by Vasily Barthold in 1930, and in 1937 into English by Prof. V. Minorsky; second ed. 1970, reprinted by Cambridge University Press, 1982.

4 For more information about Bayt al-Hikmah see *Encyclopaedia of Islam*, new ed. vol. I, p. 1141; *Encyclopaedia Britannica*, 15th ed. vol. I, p. 895, vol. 11, p. 992; Ibn Nadim, *Al-Fihrist*, a 10th-century survey of culture of Islamic societies, 2 vol., ed. and trans. Bayard Dodge, New York: Columbia University Press, 1970; Marashi Najafi & A. Rafii, *An introduction to the Encyclopaedia of the World Libraries containing Islamic manuscripts* (in Persian), Iran: Qum, 1995.
5 For more information about the Mu'tazilites see *Encyclopaedia Britannica*, 15th ed. vol. VII, p. 139.
6 Al-Zuhri Abu `Abd-Allah Ibn Abi-Bakr of Granada, fl. in the 12th century, wrote *Jughrafiya* (*Geography*) in which he described the map of Ma'mun.
7 Mas`udi, *Al-Tanbih wa Al-Ashraf*, ed. Michael Jan de Goeje, Bibliotheca Geographorum Arabicorum, Leiden: Brill, 1894, reprinted 1967, vol. 8, p. 33.
8 W. Spitta, 'Die Geographie des Ptolemaeus bei den Arabern', included in the *Proceedings of the Fifth International Congress of the Orientalists*, Berlin: 1881. Reprinted by Neuden, 1966, part 2, Semetic section, p. 28.
9 C.A. Nallino, *Al-Khwarizmi e il suo rifacimento della Geographia di Tolemeo*, Roma 1894, reprinted in *Nallino, Raccolta di scritti editi e inediti, Astrologia, astronomia, geografia,* vol.V, Roma, 1944, p. 485.
10 F. Sezgin, *The Contribution of the Arabic-Islamic Geographers to the Formation of the World Map*, Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 1987, pp. 18–19
11 The reconstructed world map of Ma'mun appeared in Fuat Sezgin, *Geschichte des Arabischen Schrifttums*, vol XII, Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 2000, p. 4.
12 For an extensive description of 'The Map of Ma'mun' see Cyrus Alai, *Mercator's World*, Vol. 3, No. 1, Jan/Feb 1998, pp. 52–57.
13 Konrad Miller, *Mappae Arabicae*, Stuttgart: Konrad Miller, 1926, Vol. I, Book 1, p. 27.
14 See Miller *Mappae Arabicae*; *Al-Masalik wa Al-Mamalik* by Istakhri; and *Hudud al-Alam*, Minorsky's translation.
15 Al-Istakhri, Al-*Masalik wa Al-Mamalik*, 10th century, Persian translation, third imprint, Teheran: Shirkat-i Intishārāt-i 'Ilmī va Farhangī, 1989, pp.71–74.
16 *Hudud al-Alam* [*The Regions of the World*]. See note 3, p. 53.
17 Cyrus Alai, 'The world map of Qazwini, the Islamic medieval geographer', *IMCoS Journal*, no. 52, 1993, London, pp.19–22.
18 P.D.A. Harvey, *Medieval Maps*, British Library 1991, p. 29.
19 *An Eleventh-Century Egyptian Guide to the Universe*, *The Book of Curiosities*, edited and translated by Yossef Rapoport and Emilie Savage-Smith, Leiden: Brill, 2014. Map of Mediterranean on the original Arabic folios 30B. A description of the Mediterranean can be found on p. 447.
20 The manuscript images should shortly be available through the Digital Bodleian.

Cyrus Alai *was born in Iran and received his PhD from the Technische-Universität, Berlin. In 1979 he settled in England and worked as a consultant engineer. His interest in maps of Persia and maps produced by Islamic medieval societies has resulted in numerous articles. His cartographic studies culminated in two award-winning and monumental volumes,* General Maps of Persia 1477–1925 *and* Special Maps of Persia, 1477–1925 *published by Brill in 2005 and 2010 respectively. In 2013 he donated his unique collection of old maps of Persia to SOAS, to be made available to all scholars, researchers and others worldwide.*



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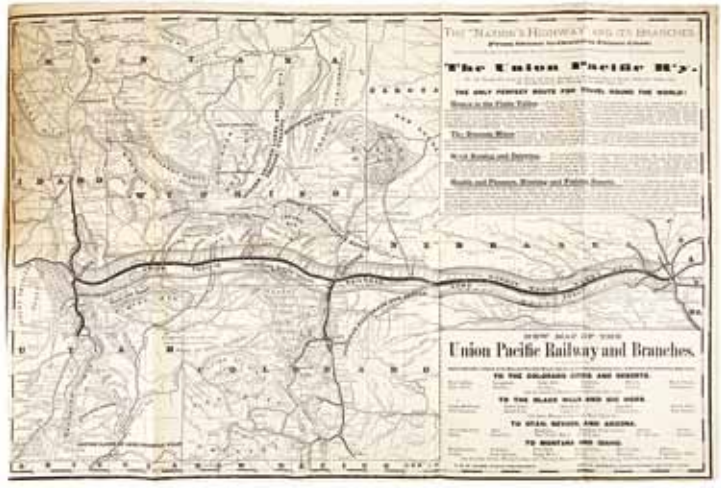
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To the Rockies and Beyond, or a Summer on the Union Pacific Railroad and Branches.... Omaha: Omaha Republican Print, 1878. First edition. Estimate: $2,000-3,000

RICHARD FRANCIS BURTON, Frontispiece drawing of Axim, from the Steamer's Anchorage intended for *To the Gold Coast for Gold.* A Personal Narrative, published by Chatto & Windus (London: 1883). Watercolor drawing on paper "with annotations in Burton's hand", 9 x 14.5 cm. Estimate: $1,500-2,500

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CARTOGRAPHY CALENDAR

Exhibitions

Until 26 March 2018, Paris
Galerie haute des expositions temporaires
Globes. Architecture & sciences explorent le monde
Information: www.citedelarchitecture.fr/fr/exposition/globes-architectures-sciences-explorent-le-monde

Until 29 March 2018, Cambridge, UK
Cambridge University Library
Landscapes Below, Mapping and the New Science of Geology
The exhibition explores how new subterranean visions of the British landscape influenced our understanding of the Earth. On show will be George Bellas Greenough's 1819 *A Geological Map of England and Wales* (the first map produced by the Geological Society of London.
Information: www.lib.cam.ac.uk

Until 6 April 2018, Madrid
Instituto Geográfico Nacional
Ecúmene: La evolución de la imagen del Mundo
Information: www.ign.es/web/ign/portal/ic-salas-expo-madrid-2017

Until 14 April 2018, Martin, Slovakia
Slovak National Library
Old Maps of Europe and Slovakia
The exhibition shows a collection of maps and graphic representations of Europe and Slovakia from the 15th to 18th century.
Information: www.snk.sk/en

Until 15 April 2018, Venice
Biblioteca Marciana
Vincenzo Coronelli (1650–1718) L'Immagine del Mondo – The Image of the World
In cooperation with the International Coronelli Society of Vienna, the Biblioteca will mount a special exhibition to celebrate Vincenzo Coronelli, the celebrated Venetian map and globe maker. On display will be maps and objects of Coronelli's life from the Marciana, as well as globes from the Rudolf Schmidt collection.
Information: www.coronelli.org

Until 24 June 2018, The Hague, The Netherlands
The National Archives
The World of the Dutch East India Company
This exhibition marks the digitisation of the archives of the Dutch East India Company (VOC).
Information: www.gahetna.nl

Until 26 May 2018, New York
Grolier Club
Westward the Course of Empire Exploring and Settling the American West
Washington Map Society member J.C. McElveen has curated an exhibition of his maps and books, focusing particularly on the exploration and mapping the American West in the 19th century, from Lewis & Clark to the Pacific Railroad Surveys.
Information: www.grolierclub.org

Until 12 August 2018, Tainan, Taiwan
National Museum of Taiwan History
Taiwan History in Maps
One of only six known maps remaining in the world that demarcate zones of residence of the Han from those of the Aborigines on Taiwan during the Qing Dynasty is on display with 70 other pieces.
Information: www.nmth.gov.tw

27 April–28 August 2018, London
The British Library
James Cook: The Voyages
To mark 250 years since Captain James Cook's ship *Endeavour* set sail from Plymouth, this major exhibition will tell the story of Cook's three great voyages through original documents.
Information: www.bl.uk/events/james-cook-the-voyages

19 May–30 September 2018, Mystic, Connecticut
Mystic Seaport, The Museum of America and the Sea
The Vikings Begin: Treasures from Uppsala University, Sweden
This exhibition will feature the Vinland Map, the document that ignited a controversy in 1965 as it purported to show the Vikings reached and mapped a portion of the New World long before Christopher Columbus. Experts concluded it is not legitimate, but it still has much to tell us about issues of authenticity and the origins of modern America.
Information: www.mysticseaport.org

1 June–28 October 2018, Oxford
Weston Library, Bodleian
Tolkien: Maker of Middle-earth
The exhibition will feature manuscripts, artwork, maps and letters from the Bodleian's extensive Tolkien Archive, artifacts from the Tolkien Collection at Marquette University in the USA and from private collections.
Information: www.bodleian.ox.ac.uk

Lectures and conferences

15 March 2018, London
Maps & Society Lectures, Warburg Institute
Dr Thomas Horst (Post-doctoral Fellow at CIUHCT, Lisbon)
Putting Saxton into Context: State Surveys in Early Modern Europe with Particular Reference to Palatinate-Neuburg (Bavaria), Saxony and England
Information: Catherine Delano-Smith at c.delano-smith@qmul.ac.uk or Tony Campbell at tony@tonycampbell.info

19–22 April 2018, Dresden
The 13th Atlastage [Atlas Days]
Information: Jürgen Espenhorst at panverlag@-online.de

24 April 2018, Stanford, California
The David Rumsey Map Center
Understanding Ice: The James B. Case Memorial Symposium
Information: library.stanford.edu/rumsey/events

20 April 2018, Glasgow
National Library of Scotland,
Constructing the Paper Landscape: Recent Research in Historical Maps of Scotland
Information: www.nls.uk

21 April 2018, Cambridge, UK
Institute of Astronomy
The Society for the History of Astronomy Spring Conference for 2018
Information: Dennis Osborne at meetings@shastro.org.uk

25–28 April 2018, Quito, Ecuador
San Francisco University of Quito
Cartography and Itineraries: Maps, Images and Memories based on the route
Official languages of the event will be Portuguese and Spanish.
Information: Sabrina Guerra Moscoso at 7siahc@usfq.edu.ec

26 April 2018, London
Maps & Society Lectures, Warburg Institute
Prof. Dr Ferdinand Opll (Hon. Prof. of Medieval History and Historical Auxiliary Sciences, Uni. of Vienna)
Early Modern Town Plans and Views of Vienna and their Importance in an International Context
Information: Catherine Delano-Smith at c.delano-smith@qmul.ac.uk or Tony Campbell at tony@tonycampbell.info

26 April 2018, Milwaukee
American Geographical Society Library at the University of Wisconsin-Milwaukee
29th Holzheimer 'Maps and America' Lecture
Carme Montaner ***Franciscan Cartography of the Peruvian Amazon in the second half of the Eighteenth Century***
Information: Marcy M. Bidney, bidney@uwm.edu

17 May 2018, London
Maps & Society Lectures, Warburg Institute
Prof. Susan Schulten (Dep. of History, Uni. of Denver, USA)
Map Drawing in Nineteenth-Century Education
Information: Catherine Delano-Smith at c.delano-smith@qmul.ac.uk or Tony Campbell at tony@tonycampbell.info

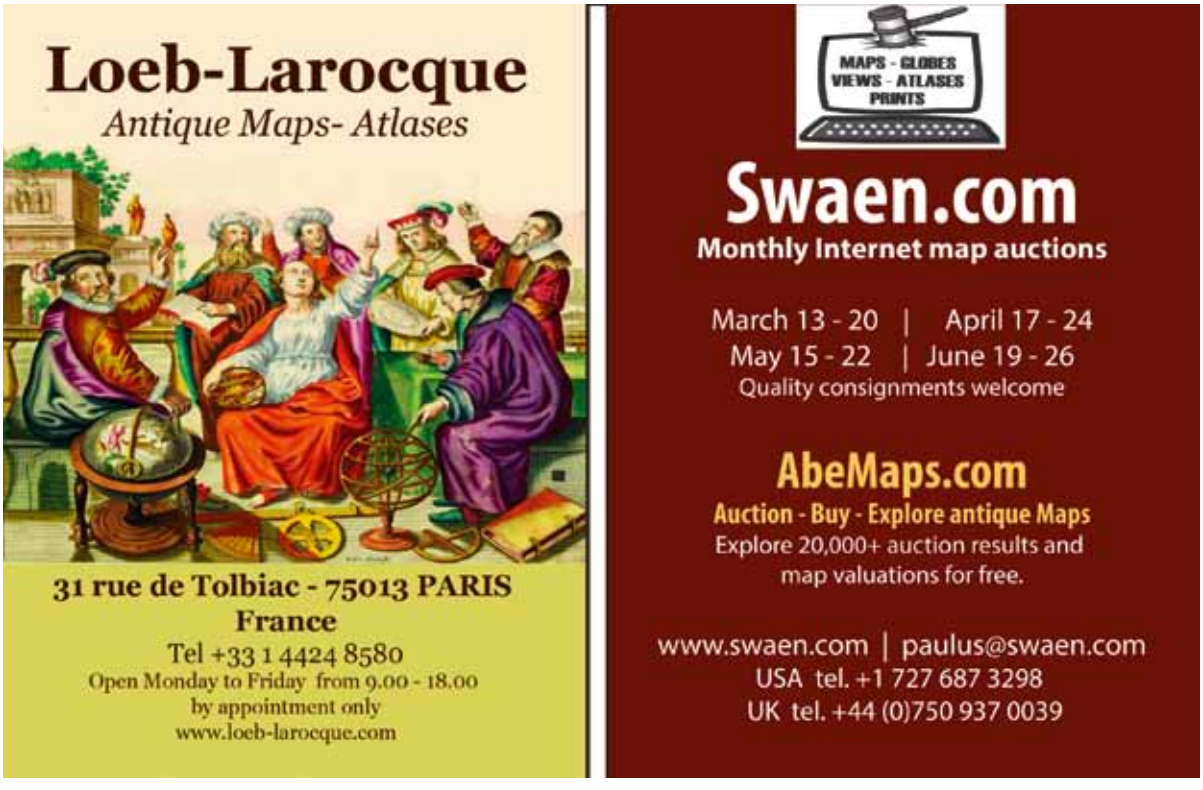
18 May 2018, Aberystwyth, Wales
National Library of Wales
The Welsh Map Symposium 2018: ***Charting the seas and coasts of the World***
Information: Huw Thomas at huw.thomas @llgc.org.uk For tickets phone: 01970 632 548 or events.library.wales

7–8 June 2018, Lisbon
Instituto Hidrográfico Marinha Portuguesa
Second International Workshop On the Origin and Evolution of Portolan Charts
The main objective of the meeting is to bring together researchers interested in the history of portolan charts.
Information: www.amqnunes.wixsite.com/portolan-workshop

Map and Book Fairs

24–26 May 2018, London
ABA Rare Book Fair London
Battersea Evolution, London SW11 4NJ
Information and your free ticket: www.rarebookfairlondon.com

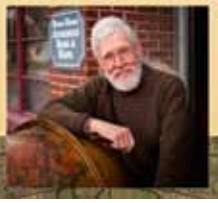
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EXHIBITION REVIEW

Cartographies of the unknown

Agustín Hernando

Under the enigmatic title – 'Cartographies of the unknown' – the recent exhibition, mounted by the National Library in Madrid, brought together more than two hundred documents (204 to be precise). Its aim was to illustrate six key ideas with which the curators invited visitors to reflect and broaden their understanding of maps and the use of cartographic language.

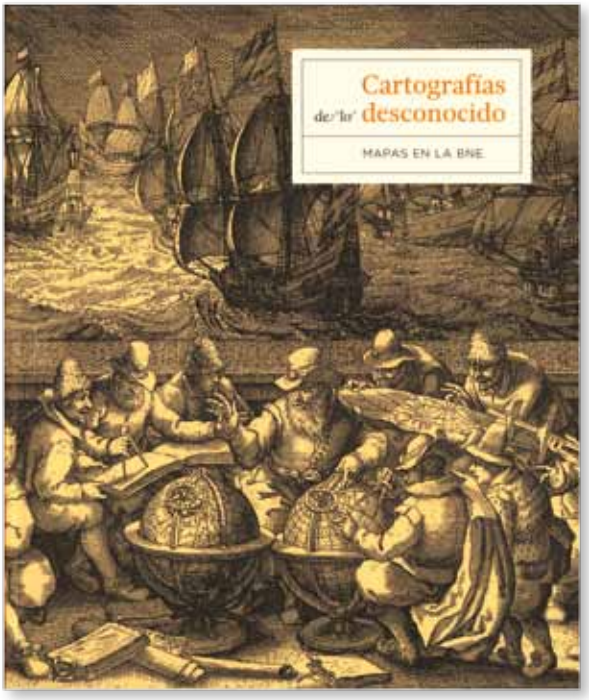


Fig. 1 The exhibition catalogue cover illustrated with an image from *Het Licht der Zee-Vaert* (Amsterdam, 1617) in which W.J. Blaeu immortalises a lesson on the use of nautical charts for future pilots.

Some ideas were difficult to appreciate on first viewing, because of their complexity, even for people versed in the subject of maps. For example, without having read the catalogue, it was difficult to reach an accurate understanding of the significance of seeing the first atlas of Spain published by royal geographer Tomás López in its Portuguese version, (closed), beside a Smartphone screen. Its purpose was to emphasise the portability of cartographic information, which society has always desired.

The first section of the exhibition, entitled 'The forms of the world', was illustrated with thirty-nine cartographical pieces. Among them were examples that ranged from Ptolemy's *Geographia*, reproduced in a beautiful medieval codex to elegant atlases published in the Netherlands in the sixteenth and seventeenth centuries. Included, also, was a handkerchief adorned with a map of the Iberian Peninsula. Printed on silk, and described as an escape map, it would have been given to a World War II pilot so that, in case of landing in unknown territory, he had the means to orient himself and find safety. Occupying a large part of the room were large plaster models of the earth's surface made in 2016 using 3-D technology. They were intended to raise the visitors' awareness of the environmental problems – climate change and rising sea levels – that face society today. The heterogeneity of cartographic representations was already evident in this opening section.

In the next section '*La terra incognita* uncovered', the curators invited viewers to reflect on how Western society made visible the territorial knowledge it was acquiring, and how the use of these resources has nourished and shaped geographical culture throughout history. The emphasis was on knowledge of the earth's surface. Displayed was a representation of the North American coastline on the famous portolan chart of Juan de la Cosa, published in 1837 by Ramón de la Sagra who was responsible for its acquisition and return to Spain.

The following section contained documents to support the existence of 'Other worlds, other people'. Its forty-six images revealed how society discovered the diversity of peoples who inhabit the Earth. Visitors were presented with contributions far removed in time: the oldest was an eighth- or ninth-century map of the world from the *Etymologies* of Isidoro de Sevilla and other codices from the early Middle Ages. There were also curious, and little known, creations brought from China and the Ottoman culture. One of the most seductive examples was the monumental *Hydrographic and Chorographic Chart of the Philippine Islands* with twelve views designed by Murillo Velarde, 1734 (Fig. 2). It may be the only complete one preserved in Spain.

The section entitled 'Imaginary Places' was somewhat surprising. It was dedicated to images of fictional territories devised by novelists in which to situate their narrative. The oldest of these scenarios corresponds to the representation of earthly Paradise as described in *Genesis*. In medieval maps it appears in the extreme east of Asia, perfectly delimited and adorned with the portrait of its first settlers, Adam and Eve (Fig. 3). There are later examples that try to give credibility to islands such as Utopia or Atlantis, as well as the interior of the Earth as conceived by the Jesuit polymath Athanasius Kircher; and those created by twentieth-century authors such as J.R.R. Tolkien. Spanish author Juan Benet's imaginary land of Región was also on display. A highlight amongst these inventions was Tomás López's map depicting the route of Don Quixote's adventures. The map chosen for the exhibition was not the original 1780 copy but one from the nineteenth century which had been embellished on three side with vignettes from the adventures engraved by Gustave Doré. Among the best-known examples of fantasy lands for specialists in the history of cartography is the map of the North Pole by the most illustrious of Renaissance mapmakers, Mercator. He depicts it as made up of four islands separated by rivers that begin at the centre of a giant whirlpool. Mercator's speculation, like the belief in a great southern continent *Terra Australis*, took several centuries before it was discarded as inaccurate.

The penultimate section 'The silence of the maps' illustrated the proposal of a critical researcher. With this challenging idea, Brian Harley in the late 1980s confronted the empirical and complacent reading of historical maps. The exhibits in this section attest to the grave omissions frequently made by the mapmakers and their commissioners. James Rennell's wall map of

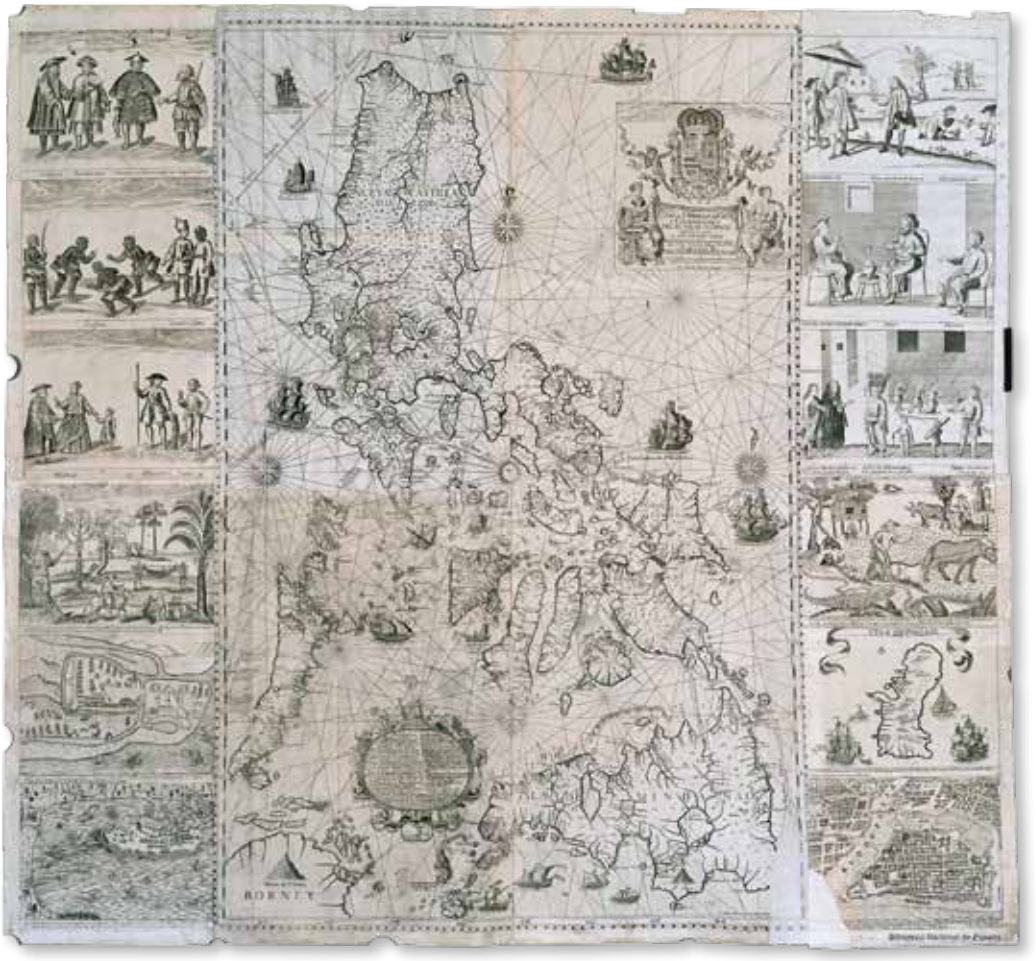


Fig. 2 'Carta Hydrographica y Chorographica de las Yslas Filipinas', Manila 1734. The wall map was drawn by the Spanish missionary Pedro Murillo Velarde (1696–1753). It is surrounded with illustration that reveal the life and activities of the Islands' inhabitants. Biblioteca Nacional, Madrid.



Fig. 3 The world map from the Beato de Liébana, 1047, Biblioteca Nacional. Madrid.

India is a prime example of omission. So too is the colossal map of South America patiently prepared by Juan de la Cruz Cano y Olmedilla; it was discredited and silenced for not agreeing with the political interests of the moment. Undoubtedly, the most eloquent expression of silence was dedicated to the African continent, with the striking informative emptiness of its interior.

The most daring, and concluding idea of all the ideas explored in this exhibition had the disconcerting title 'Other cartographies'. In this section we found a vast array of subjects from medical engravings taken from the anatomy manual of Andreas Vesalius to drawings made by Humboldt to visualise the distribution of the height of plants. Positioned between these diverse images were the familiar maps of the Madrid metropolitan transport or 'metro', still drawn in Euclidean space. Further evidence of the flexibility of scales and conceptual tolerance professed by the exhibition's curators was in the juxtaposition of books on architecture, opened on pages showing contours of buildings, with prints of constellations that adorn the celestial vault. There were visualisations of the heights of mountains and lengths of rivers, an innovation popular in nineteenth-century atlases reflecting the fervour of the period for new quantitative data. The culmination of this conflicting anthology of exhibits were two attractive wall prints produced for schools in the late nineteenth and early twentieth centuries and sold by well-known publishers from Madrid and Barcelona, the first who specialised in supplying pedagogical material in Spain.

The items displayed in this last section proved the versatility of the map metaphor. For those visitors with more essentialist sensibilities, the exhibition might have appeared as an adulteration or distortion of the identity which it proclaimed as its subject. However, for the curators, these many and various examples demonstrate the colonisation of the cartographic language.

In short, the exhibition was a clear tribute to the role played by maps in the course of history and also, to the talent, astuteness and originality of some creators committed to the task of capturing and making intelligible a portion of the imagined reality.

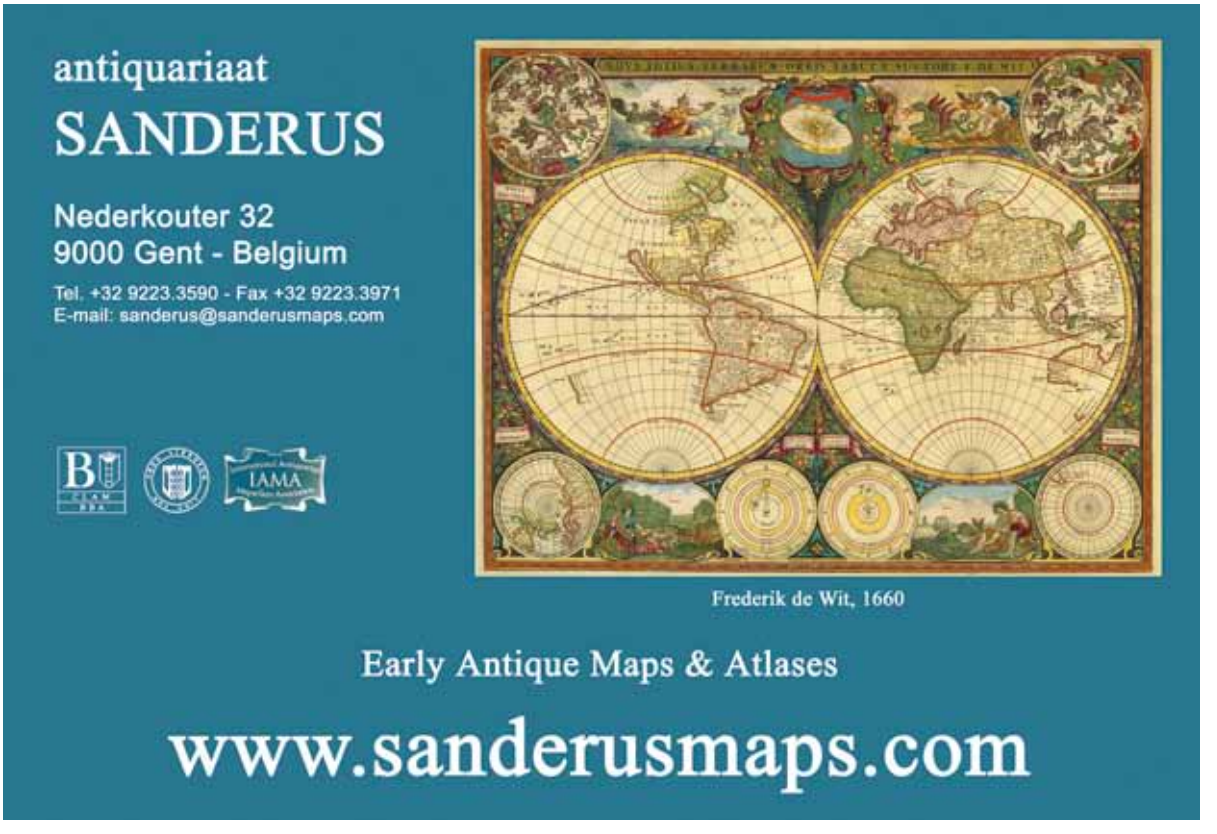
'Cartographies of the unknown' is a chronological story that begins at the dawn of the Middle Ages and concludes in the present, and is illustrated with

works that in a few cases are familiar to people fond of maps. Regarding the exhibits and areas covered, it is eclectic with wall maps, codices, atlases or books used to document and clarify the idea of each section. The thematic narrative of the exhibition is based on the six ideas described and is illustrated by a heterogeneity of iconographic resources. Each visitor could delight and examine carefully the examples that they deemed most important or significant, and discover in them curious, surprising or inspirational messages of greater emotional force.

Heartfelt congratulations must go to the National Library of Spain and to the people who collaborated in the preparation of this outstanding exhibition and made available our cartographic legacy, highlighting the intellectual relevance, aesthetic beauty and social utility of the works exhibited, from the most sumptuous to the most modest.

And to record this wonderful effort, curators Sandra Saenz-Lopez and Juan Pimentel produced a substantial catalogue *Cartografías de lo desconocido. Mapas en la BNE* in which, together with the list of works exhibited, they provide perceptive commentaries on the works chosen for the exhibition.

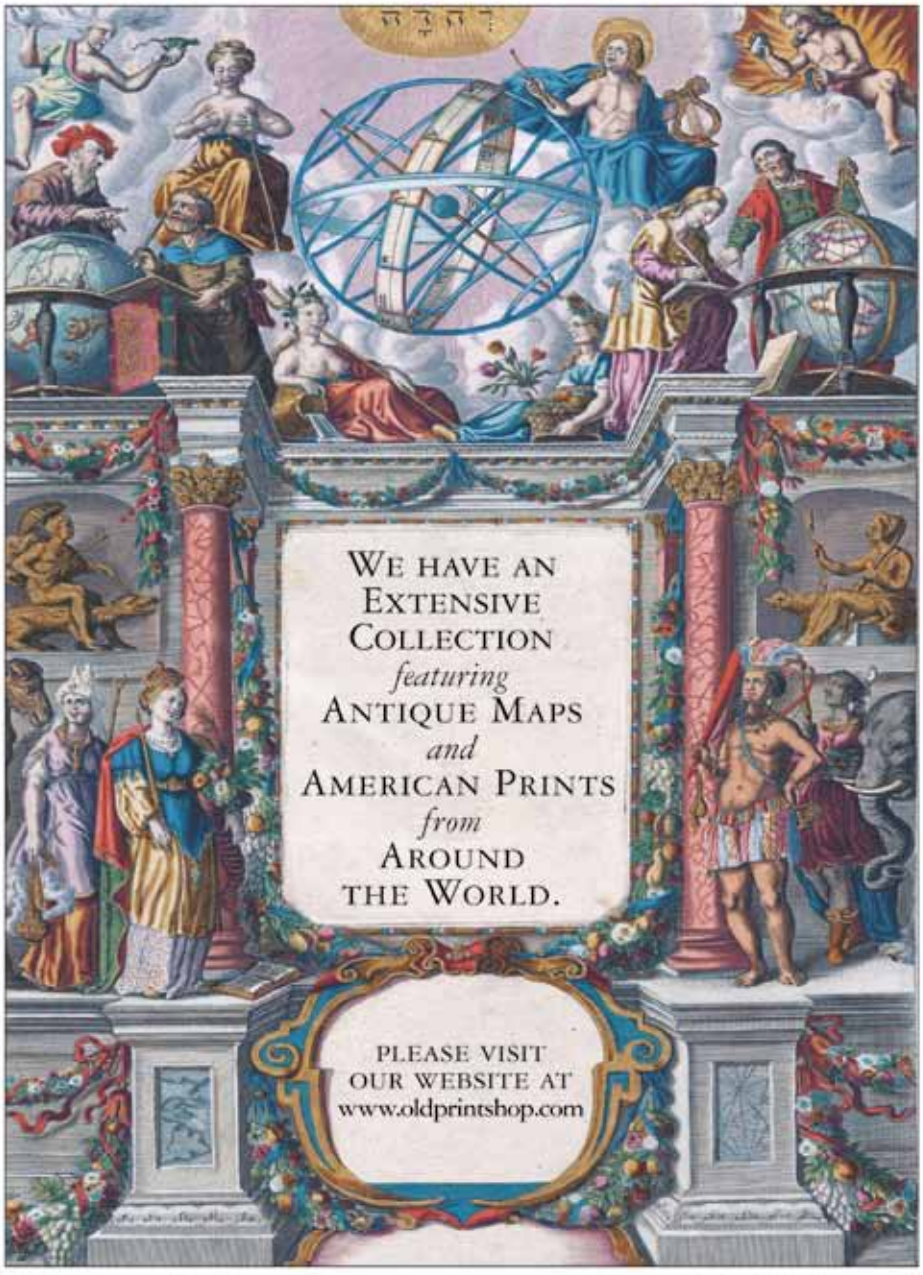




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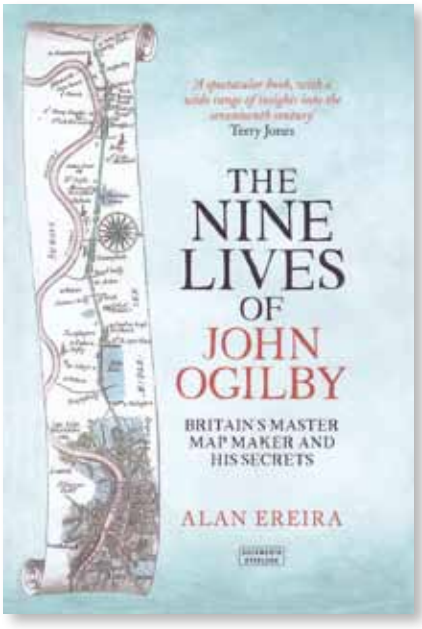
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BOOK REVIEWS

The Nine Lives of John Ogilby: Britain's Master Map Maker and his Secrets
by Alan Ereira. London: Duckworth Overlook, 2016. ISBN 9780715651100. HB with dustjacket, 354, many b&w illustrations £25 STG.



John Ogilby's *Britannia, illustrating the Kingdom of England and the Dominion of Wales* (1675) is hailed as the nation's first road atlas. Royal Cosmographer at the time of publication, Ogilby dedicated his mammoth work to Charles II to '*Improve Our* Commerce and Correspondency *at Home'*. Author Alan Ereira challenges the innocence of Ogilby's claim, suggesting that his fulsome dedication is charged with a more sinister intent. In a riveting piece of storytelling, Ereira endeavours to unmask the man, whose skill for reinvention is astonishing, and proposes that *Britannia* was part of a Royalist bid for power.

The book is divided into two parts. Part 1, 'The Journey to John Ogilby', examines the career of this extraordinary shape-shifter, arguing that the secret of *Britannia* can only be understood by understanding the man. Indeed, it is hard to understand how, at the age of seventy, without experience of mapmaking and surveying, he managed to have himself appointed Royal Cosmographer with the commission to 'invent a new way of knowing the kingdom'.

Ereira presents his protagonist as one shrouded in deliberate mysteries, commencing with the place of his birth. Contemporary correspondence or biographical information is slim: Hooke and Pepys mention him in passing. John Aubrey, who was employed by Ogilby to help with the text of *Britannia* includes his employer in *Brief Lives*. Ereira describes assembling Ogilby's biography as piecing together 'fragmentary references, cyphers, hints' which when answered 'lead to a further mystery'. Known is that John was born in 1600 and his father was admitted into the Worshipful Company of Merchant Taylors in 1606, however, much else of young John's early years, by way of Aubrey, is less certain such as the alleged winning of the lottery with which he was able to secure his parents' release from the debtors prison and buy himself an apprenticeship to a dance master.

As the title makes plain Ogilby resurrected and reinvented himself over and over again – a talent which Aubrey recognised when he curmudgeonly described Ogilby as a 'cunning Scott', and one who must be dealt with 'warily'. The chapters of Part I are neatly organised like a children's fortune-telling rhyme, each addressing a major reincarnation: dancer, soldier, impresario, agent, poet, publisher, translator and author, pageant master, and finally, in 1671, five years before his death, atlas maker. What unites these disparate roles is Ogilby's devotion to absolute monarchy and a desire to reassert the Stuart dynasty's power. His protagonist and his 'project' are as entertaining as the adventures of Don Quixote.

'The Atlas Maker' leads seamlessly into Part II 'The Journey to Britannia' in which Ereira unfolds Ogilby's intention behind *Britannia*: to land a French army of conquest in accordance with the secret treaty between Charles II and Louis XIV. Ereira argues that of the one hundred maps prepared for the single volume a number were of little value, some just 'an imprecise drovers' track' while other more important commercial routes, such as the road to Liverpool, were deliberately omitted. Ereira presents a convincing argument which he supports with a detailed, yet very readable account of the events of seventeenth-century Britain which impacted on Ogilby and the choices he made.

Whether your interest is in the history of

cartography, book history or the turbulent period of the Commonwealth and the Restoration, *The Nine Lives of John Ogilby: Britain's Master Map Maker and his Secrets* is a compelling read.

Ljiljana Ortolja-Baird, Quendon, UK

Patents and Cartographic Inventions: A New Perspective for Map History *by Mark Monmonier. Cham, Switzerland: Palgrave Macmillan, 2017. ISBN 9783319510392. HB, xv, 267, 88 b/w illustrations. STG £66.99.*



Mark Monmonier is well known for his books on cartography that have frequently explored the lesser known areas of the discipline. His latest, which examines the use and role of patents in cartographic innovation, provides an alternative account to that produced by academic literature. An initial chapter explores the use of patents to uncover the story of maps on streetcar transfer tickets, i.e. tickets that enabled a traveller to use a single ticket to complete a journey on more than one streetcar line. Research into patents has been made much easier with the introduction of Google Patents which is a database of patent applications which also contains downloadable, full-text scans of the applications. Mark explains that drawings were an integral part of the patent application and that the process of obtaining a patent could be extremely tedious and dogged by delays as the patent examiners ensured that any claims for originality were valid. Mark also goes beyond the information available on Google Patents by trying to track down the individuals who filed the patents, to find out how much formal education they had and what kinds of jobs they did. A surprising number had quite limited education and many were employed in fields far removed from conventional cartography. It seems many were simply trying to come up with solutions to problems they encountered in their every day lives.

Streetcar tickets with maps may well be familiar to some historians of cartography, and there certainly seems to be a market for them among collectors but some of Mark's other examples are unlikely to be familiar to most historians. In the second chapter Mark discusses various patents for identifying locations. This was important in the United States at a time when, outside of towns and cities, it was often difficult for travellers to find isolated farmsteads. Sign posting was still in its infancy in rural areas, resulting in a number of inventors developing aids to georeferencing. In most chapters a time series is included showing how many patents were filed in each year. In this chapter he identifies how many patents mention a georeferencing scheme, and how many patents had georeferencing as the predominant factor in the patent applications filed for maps and indexed maps (which are separate classes in the US patent system). He notes that there are three clusters, one around 1900, one between 1910 and 1920 and another in the 1990s. It is the earlier clusters that are of interest as these coincide with expansion of road transport. He describes a number of schemes for georeferencing based on grids or clock systems, some of which enjoyed short-term commercial success stretching into the 1930s, but none seem to have survived the 1940s.

The next chapter discusses a number of different patented devices designed to help drivers find their way along roads lacking sign posts. The earliest devices were simple strip maps that a cyclist or driver could wind on as they followed the route, but the more interesting devices were mechanical, driven by a flexible shaft from the wheels. This meant that the device would show the current location of the vehicle and alert the driver of any junctions coming up. However, unlike a modern satellite navigation system, they could not take into account any deviations from the intended route. Some devices relied on a disc which was inserted in the machine to give directions between two fixed points, a separate disc being needed for every new destination. Other devices were programmable. All the devices that were

developed for the market were relatively expensive, and sales seem to have been extremely limited.

The next chapter discusses various patented schemes for folding maps, something which academic cartographers have tended to neglect. Lucinda Boyle and Chris Board are among the few who have taken the subject seriously. Given the lack of interest among academic cartographers, it is ironic that patents in this area are among the few to be successfully exploited commercially. Gerhard Falk's innovation led to the creation of a successful map publishing company, and McDonald's 'Z-Cards' and Dacey's 'PopOut Maps' were also successfully developed for the market. It was in this chapter that I found one of the few factual errors in Mark's text, when he refers to Falk's training at the technical school of the Reichsamt für Landesaufnahme. He identifies the organisation as the military survey, whereas it was a civilian national mapping agency created at the end of the First World War.

Chapter Five considers patent applications for new map projections. The chapter starts with Mark's reference to the views of John Snyder who believed that patenting of projections was a mistake since there were so many freely available projections as good, or better than those patented that there was no incentive to use the patented ones. The evidence very much supports Snyder's assertion. For some reason Gerhard Falk is mistakenly referred to as Albrecht Falk on page 166.

Chapter Six deals with the large number of patents for terrestrial globes. Some globes were designed simply for display, while other were intended as teaching aids. The most complex was that of Herman Scholse, which was designed to show the position of the earth's shadow, mean solar and sidereal time at any degree of longitude. Illuminated from inside, the globe rotated through 360° every 24 hours while a filter inside the globe rotated about the illumination source through 360° in 365 days to show the progression of the seasons, the whole being driven by clockwork. While this globe was brought to market, it was very expensive and production did not survive the Great Depression.

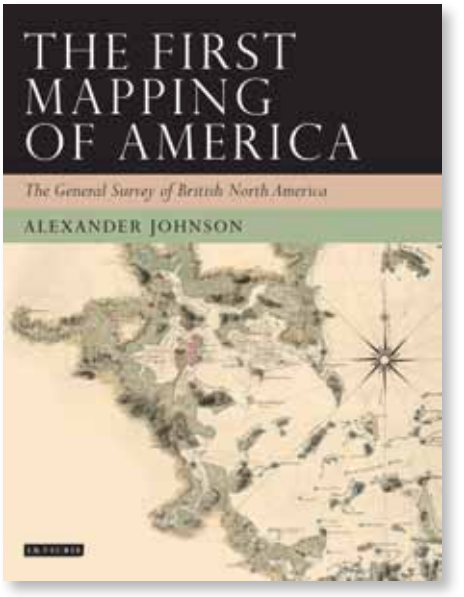
The final chapter discusses the variety of inventions designed to show positions on a map. The inventions discussed here include the kind of map once found quite commonly, especially in tourist areas, where someone could press a button by the name of an attraction and a small bulb on the map would light up showing the attraction's location. These devices are clearly forerunners of the electronic maps so widely in use today. Attractions paid to be included on the map in the same way that shops and attractions pay to be included on digital maps even if the way in which the charges are levied is different. Other patented devices were intended to indicate the location of a fire on a map in a fire station when an alarm had been triggered. Again, this can be seen as an early attempt to do something now done more effectively by GIS.

It is to be hoped that in drawing attention to the riches to be found in the patent files Mark will encourage other academics to explore the resource. It is to be regretted that modern academics have tended to be far too restricted in their focus to explore beyond their narrow area of expertise, something forced on them by the metrics that drive promotion. Unfortunately, the price tag on the book means that it is more likely to find a place on library shelves than on the shelves of individual readers.

Peter Collier, Southsea, UK

The First Mapping of America, The General Survey of British North America

by Alexander Johnson. London: I.B. Taurus, 2017. ISBN 9781780764429. HB, 320, col. & b/w illustrations. STG £69; US $110.



Exquisitely well researched and elegantly written, Alexander Johnson's *The First Mapping of America, The General Survey of British North America* is a gem of cartographic history.

After the close of the Seven Years' War, the British Empire expanded immensely in North America, and British ministers wanted detailed cartographic intelligence about their new lands. Accordingly, the government authorised the General Survey in 1764. At its inception, the survey was an ambitious, indeed revolutionary, undertaking. The outbreak of the American War of Independence brought a premature end to the Survey in 1775.

Johnson tells the engrossing tale of the survey in the full context of the intricate political, military and economic history of the mid-eighteenth century. The book's scope also includes the scientific methods of how the surveys leading to the maps were carried out. The author describes the painstaking measurements the teams had to make accurately in order to depict on paper the new lands and their exact longitude and latitude, all on a scale of one mile to one inch.

Adding to this fascinating story is the human element, and Johnson introduces the reader to the two prominent figures, namely, the Surveyor-Generals of the Northern and Southern Districts of the General Survey: Samuel Holland and William Gerard De Brahm. Aside from both having gifted skills as surveyors, they could not have been more different. Holland was a brilliant manager and an accomplished leader with superb political skills. De Brahm, on the other hand, was stubborn, argumentative and impolitic. Holland had statesman-like relations with all; De Brahm clashed notably with the military governor of East Florida, Col James Grant, and even with his one-time colleague Bernard Romans.

Holland's cartographic achievements are described as 'spectacularly successful' in charting Canada and then moving south. De Brahm faced special challenges of more limited resources and of operating in undeveloped areas (in addition to his irascible personality), but his team still made 'rapid and impressive progress' in mapping the Florida peninsula. The allocation for the survey was about 1,000 pounds per year for the northern and 700 per year for the southern districts.

Both Holland's and De Brahm's teams endured physical hardships along rugged coastlines and in inhospitable wildernesses, but what they achieved is considered 'one of the greatest scientific endeavours of the Enlightenment era' by virtue of the Survey's scope, systematic approach and its highest scientific standards of accuracy.

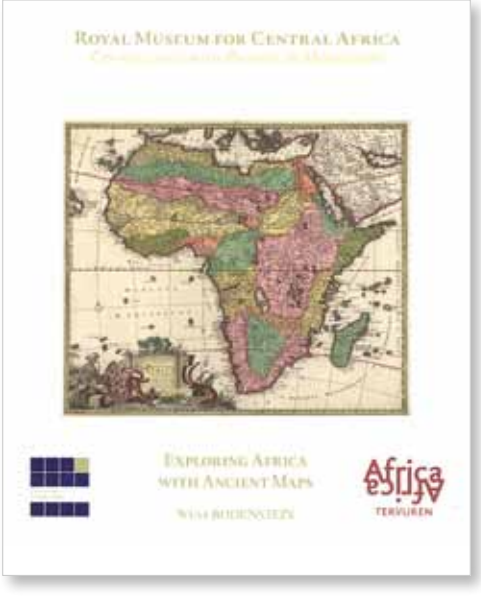
First Mapping of America is made up of Parts I through VII, beginning with the Introduction, entitled 'On the Tide of Enlightenment' and continuing with well-organised parts entitled 'The Antecedents and Genesis of the General Survey'; 'Mapping "Infant Colonies": 'The Commencement of the General Survey'; '"Closing the Net": The General Survey During the Administration of the Earl of Hillsborough'; '"A New Spring to our Future Endeavors": The General Survey under the Administration of the Earl of Dartmouth'; and 'The General Survey and the Militarization of Civilian Cartography'. Part VII is entitled 'Conclusion and Legacy'. The book is richly illustrated with forty-one black and white maps and sixteen handsome colour plates. Some of the maps have not previously appeared in print.

Both cartographic scholars and map collectors will find this new book of extraordinary interest.

Alexander Johnson holds a PhD in History from the University of Exeter. In 2014–15, he co-curated India's first major historical map exhibition and currently is an international dealer in antiquarian books, prints and maps, based in Munich.

Ronald S. Gibbs, San Francisco, USA

Exploring Africa with Ancient Maps *by Wulf Bodenstein. Tervuren: Royal Museum for Central Africa, 2017. ISBN 9789492244796. PB with flaps, 296, 80 maps plus details, DVD. The book is available in English, French and Dutch and details are available on the museum website www.africamuseum.be/museum/research/publications. €19.50.*



For anyone who has an interest in the history of western mapping of Africa Wulf Bodenstein's *Exploring Africa with Ancient Maps* is a *must*. He has made a selection of eighty maps taken from the Royal Museum for Central Africa in Tervuren. This has a collection of some 3,500 maps of which, he says, that some 600 can be described as 'ancient'. The selection made for the book covers the chronological development of mapping of Africa by centuries from the fifteenth century up to and including the twentieth century until the First World War. The chapters are organised by century and reflect the successive phases of exploration of the continent from the early coastal voyages of the Portuguese to organised campaigns of territorial reconnaissance in the 'Scramble for Africa'.

Bodenstein is a volunteer curator of the map room in the Stanley Pavilion at the Royal Museum for Central Africa and, since 1977, has played a key role in helping the museum develop and expand its collection of European maps of Africa. On encouragement from the museum and, in particular Patricia Van Schuylenbergh, Bodenstein undertook this book project in order to celebrate the museum's little known collection.

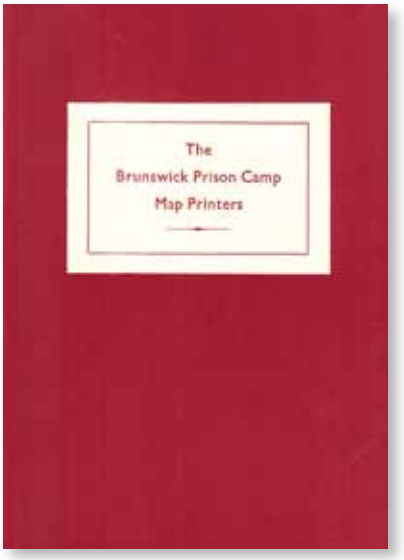
Unlike most publications of maps, this one is presented in an unusually small format (15 x 18 cm) so that a close study of each of the chosen maps as printed is not possible. To address this, a DVD comes with the book and includes all the maps, and more. They are high-definition, zoomable images enabling the reader to study and compare the maps in detail. The DVD offers a great deal more: for instance the book offers an image of Willem Jansz. Blaeu's 'Africæ Nova Descriptio' but on the DVD readers can avail themselves to all the pages of Volume 9 of Blaeu's *Atlas Major* (1662). The addition of the DVD facilitates easy studying and comparison of individual maps. A map of Africa as it is today showing the hydrography, a timeline setting out 'principle events relating to the history, exploration, and mapping of Africa' and a short bibliography are invaluable additions to the book.

The selection of entries given has been made with great care and the individual commentaries are concise and well presented. Each full-page map is accompanied by a generous description of its maker and context, as well as where it fits in the advancement of geographical knowledge of the continent. Bodenstein has put a great deal of effort into the research and presentation and is to be congratulated on a most worthwhile addition to the history of mapping of Africa.

Caroline Batchelor, Ashstead, UK

The Brunswick Prison Camp Map Printers

by Mark Evans. Liverpool: Juniper Press, 2017. PB, 44, 6 col. maps, 4 loose monochrome facsimiles. To buy: hand printed letterpress edition (150 numbered copies), STG £45 plus postage; facsimile printed edition (300 copies), STG £18 plus postage. See www.thebrunswickprinters.com.



The Brunswick Prison Camp Map Printers celebrates the work of printer Philip Radcliffe-Evans (1917–1992) who, while in a prisoner-of-war camp for Allied Officers, Oflag-79, near Braunschweig, 'instigated, built and operated a clandestine printing press for the purpose of producing escape maps'.

This slim book of just forty-four pages is organised in three parts: Part 1 'Setting the Scene' is a brief introduction to the author's father Radcliffe-Evans who, after the war, became managing director of the Liverpool-based printer Tinlings. Evans explains how the book was conceived with retired printer Ken Burnley who had worked under his father in the 1960s. Burnley authors Part 3 in which he pays tribute to the methods of lithographic printing which he uses to print *The Brunswick Prison Camp Map Printers*.

Part 2, which is the substance of the book, is a reprint of an article written by Radcliffe-Evans in 1951 for the *Printing Review*. In this article he sets how he managed to print over 1,000 maps during his time in Oflag-79 between May 1944 and the end of the war. Describing himself as one of those POWs who was 'always on the lookout for something to occupy my mind', Radcliffe-Evans was struck when washing stone tiles, which the prisoners used as plates for

eating, by how the grease from the food was absorbed and left an impression in the stone. Recognising that these rough cast tiles might be adapted for lithographic printing he quickly fashioned some ink from margarine and carbon to test his eureka moment. His hunch proved successful.

Amongst the 2,500 fellow captives Radcliffe-Evans found artists, cartographers, scientists, carpenters and printers with whom he could realise his ambition to supply 'one [map] for every man in the camp'. The war was in its final stages, and in response to rumours that the POWs were to be shipped further east, a plan for a mass breakout was being formulated. Their story is one of awe-inspiring inventiveness in sourcing the materials necessary for lithographic printing. For instance gum arabic, which is vital in the process, proved elusive until a scientist came with the idea of using powdered jelly. The jelly arrived in quantity in Red Cross parcels, and after washing out the sugars and flavourings it turned out to be a workable substitute. Ink too proved difficult to obtain. After considerable experimentation with their limited resources, it was discovered that pitch, dug up from between the concrete slabs in the pavement, made an acceptable printing ink when boiled to remove the dirt and then mixed with margarine and cooking fat.

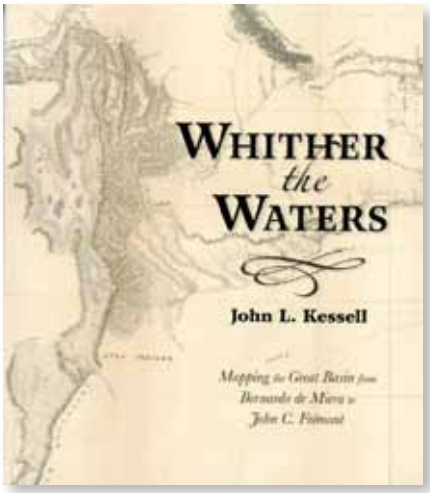
It is remarkable that despite all their technical challenges Radcliffe-Evans and his team managed to print 1,200 maps (on paper stolen from the Germans). They produced four maps, using two-, three- and four-colour printing: the Oflag-79 camp; the area around Braunschweig; the area around Osnabruck and Kassel; and Luneburg and the ports of Hamburg and Bremen. Facsimile of these are included with the book.

While the subject of escape maps has been addressed in depth by Barbara Bond in her book *Great Escapes, The Story of M19's Second World War Escape and Evasion Maps*, the value of *The Brunswick Prison Camp Map Printers* in furthering our knowledge cannot be underestimated. Radcliffe-Evans was not a cartographer but he recognised that his skill could serve those POWs wanting to 'have a go' to escape. It is this personal account of setting up a printing works to facilitate a mass escape which makes the book such an engaging read beyond its contribution to the subject.

Ljiljana Ortolja-Baird, Quendon, UK

Whither the Waters: Mapping the Great Basin from Bernardo de Miera to John C. Fremont

by John L. Kessell. Albuquerque, New Mexico: University of New Mexico Press, 2017. ISBN 9780826358233. PB, 120, 55 col. plates. US $29.95



In *Whither the Waters*, John Kessell explores the cartographic supremacy of Don Bernardo de Miera y Pacheco. Miera, an eighteenth-century Spanish colonial artist and engineer who served as cartographer for the epic 1776 expedition of the American Southwest led by Fathers Francisco Atanasio Dominguez and Silvestre Velez de Escalante. In the field of cartography, Miera would not be eclipsed until John Charles Fremont appeared on the scene seventy years later. This work is not Professor Kessell's first about Miera. In his previous book, *Miera y Pacheco: Renaissance Spaniard in Eighteenth-Century New Mexico* (2013), Kessell thoroughly explained the contribution of Meira to the cartography of Spanish New Mexico. The current volume expands on Miera's contribution to cartography and puts it in context with cartographers who were to follow.

On the Dominguez-Escalante expedition, Miera made field observations by astrolabe (probably a quadrant he made himself) and a compass. The resulting maps, which were amazingly accurate for the time, presented the first glimpse of the southern Rocky Mountains, the Colorado Plateau, the Wasatch Mountains and the Great Basin.

Several books have been written about the expedition, but there are few mentions of its underappreciated cartographer. Professor Kessell sets the record straight, and in *Whither the Waters,* he exposes the uncomfortable struggle within the Mexico

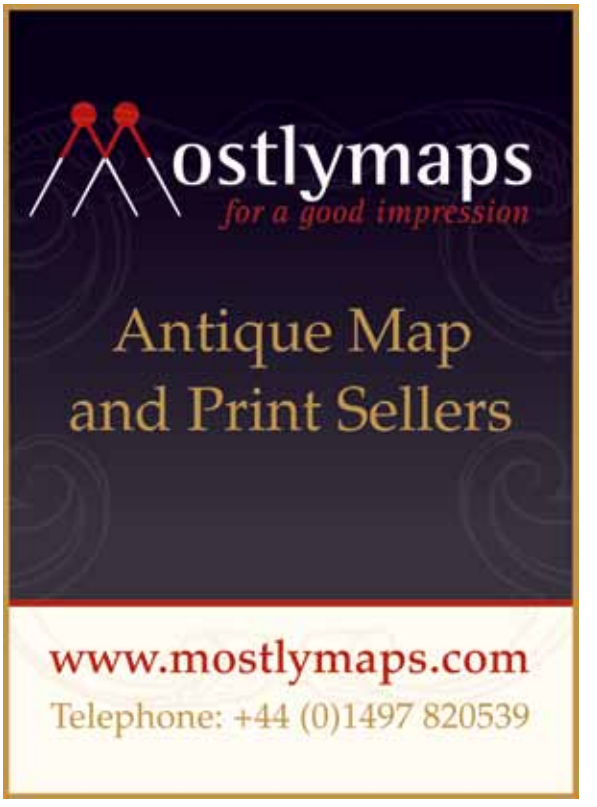
City-based Spanish cartographic hierarchy during the waning years of the Spanish empire. More importantly, he expertly describes how Miera's cartographic information bridges cultures and finds its way into the cartographic understanding of the territories west of a fledgling nation that was established on the east coast of North America in the same year that Miera was making his meticulous observations in the arid Southwest thousands of miles away.

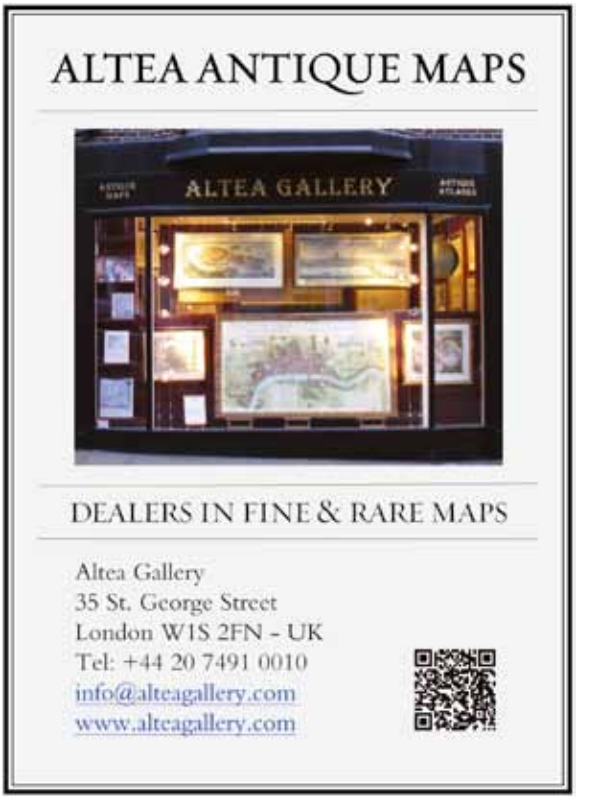
Professor Kessell recounts the fate of Miera's cartographic information. After being discounted by his peers, Meira's map was plagiarised by his superiors in Mexico City who shared it with legendary scientist Alexander von Humboldt, who in turn shared it with Thomas Jefferson, the third president of the United States. Jefferson made Meira's information available to Zebulon Pike who led the second exploration of the American west after Lewis and Clark. Pike also plagiarised Miera's information, obtained from Humboldt on his well-circulated maps. Ironically, Humboldt is known to have complained to Jefferson about Pike's blatant plagiarism of his cartographic information. Professor Kessell describes how Miera's inaccuracies (or, more correctly, his assumptions) were copied by the next generation of cartographers from Humboldt to Pike, and subsequently from Tanner to Fremont who finally dispelled the notion of a water connection from the Great Salt Lake through the Great Basin to the coast of California.

Also discussed is Miera's little-known contribution to the map created by Father José Antonio Pichardo in 1811. That map, 'El Nuevo Mexico y Tierras Adyacentes', was instrumental to the Spanish in negotiating the 1819 Adams–Onis Treaty, which established the boundaries between the recently purchased Louisiana territory and New Spain.

Whither the Waters is an enjoyable, well written, and important contribution to our understanding of the intricacies of early cartography of the American Southwest. In a recent conversation with Professor Kessell over a locally brewed beer in Durango, Colorado, not far from where Miera and the expedition had crossed the Animas River, I asked him why he chose to write a book about an area that is so sparsely populated. He agreed that it would be a challenge to sell a large number of books, but like any true scholar, he stated his goal was to share history and its power to enrich our perspective of the land we live in and of those who came before us.

Dirk de Pagter, Colorado, USA





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KIT BATTEN RHINE MAPS ON-LINE

IMCoS members may be aware I have a good collection of Rhine leporello maps from 1825-1900. These are the basis of a new web site cataloguing all Rhine leporellos I could find. Visit my new blogspot!

I am in the process of selling these and other maps from my personal collection: these are all listed at my new **Maps-For-Sale** web site. I have recently posted fifty World War One German propaganda postcards (with maps) – well worth a look – and there will be more to follow!

This web site has a selection of maps from my personal collection – I am not dealing commercially.

www.kitthemaps-rhine-panoramas.blogspot.de
www.maps-for-sale.com

IMCoS JOURNAL ADVERTISING

4 issues per year	Colour	BW
Full page (same copy)	£950	-
Half page (same copy)	£630	-
Quarter page (same copy)	£365	-
For a single issue		
Full page	£380	-
Half page	£255	-
Quarter page	£150	-
Flyer insert (A5 double-sided)	£325	£300

Advertisement formats for print

We can accept advertisements as print ready CMYK artwork saved as tiff, high quality jpegs or pdf files.

It is important to be aware that artwork and files that have been prepared for the web are not of sufficient quality for print. Full artwork specifications are available on request.

Advertisement sizes

Please note recommended image dimensions below:

Full page advertisements should be 216 mm high x 158 mm wide and 300–400 ppi at this size.

Half page advertisements are landscape and 105 mm high x 158 mm wide and 300–400 ppi at this size.

Quarter page advertisements are portrait and are 105 mm high x 76 mm wide and 300–400 ppi at this size.

IMCoS website Web banner

Those who advertise in our Journal have priority in taking a web banner also. The cost for them is £160 per annum. If you wish to have a web banner and are not a Journal advertiser, then the cost is £260 per annum. The dimensions of the banner should be 340 pixels wide x 140 pixels high and should be provided as an RGB jpg image file.

To advertise, please contact Jenny Harvey, Advertising Manager, 27 Landford Road, Putney, London, SW15 1AQ, UK Tel +44 (0)20 8789 7358 Email jeh@harvey27.demon.co.uk

Please note that it is a requirement to be a member of IMCoS to advertise in the *IMCoS Journal*.

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Fine Antique Maps, Atlases, Globes, City Plans & Views



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Recent acquisitions regularly added at

martayanlan.com

Contact us to receive a complimentary printed catalogue or register on our web site. We would be happy to directly offer you material in your collecting area; let us know about your interests. We are always interested in acquiring fine antique maps.
GALLERY HOURS: Mon-Fri, 9:30-6:00 and by appointment.

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