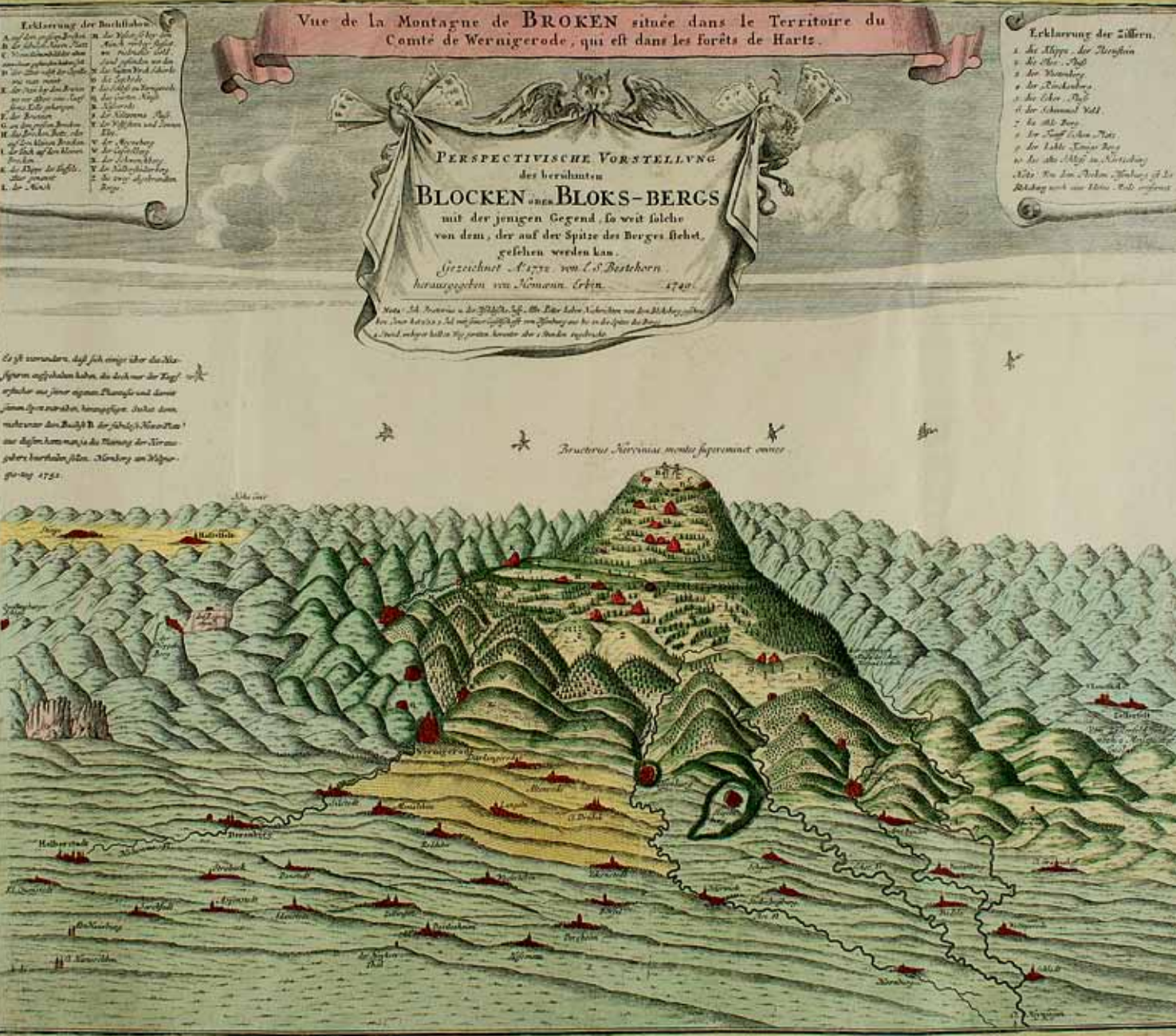


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JOURNAL

WINTER 2017 No.151





Detail of William Heather's spectacular 1802 Chart of the Mediterranean Sea dedicated to Admiral Horatio Nelson.

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mit derjenigen Gegend, so weit solche
von dem, der auf der Spitze des Berges
stehet, gesehen werden kann', 1732.
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A LETTER FROM THE CHAIRMAN

Hans Kok

This is my first and last chance to wish everybody a Merry Christmas and a Happy New Year! Or Season's Greetings for those who prefer a more general token of good will, as our membership comprises of many denominations worldwide.

Our 'Love for early maps' unites us as the international attendance at the Hamburg Symposium, just behind us, has proven again. Slightly fewer participated than expected, but the Symposium presentations offered, as always, a good mix of topics on early and later cartography, and presented in a very nice city indeed. Many thanks to Dr Vladi and his team! The visit to Eutin, where Oswald Dreyer-Eimbcke's fine collection is currently held since he passed away in 2010, was a thoughtful addition to the programme. He was our President for many years and is still fondly remembered for his friendly personality, his efforts to promote IMCoS and his Arctic and South American collections, and of course, for being instrumental in the International Symposium in Reykjavik/Iceland in 2000. The optional trip to Berlin this year also included a visit to the Berlin State Library, where Dr Markus Heinz especially selected a number of curious items, each prompting much lively discussion.

Our next Symposium will be a dual one, starting off in Manila, where we will be for three days, followed by a day for travel to Hong Kong and two more days at the Hong Kong Maritime Museum. The programmes are almost in place and promise interesting presentations in an area where historical cartography is booming on all counts: research, map fairs and trade, general interest and attention and publicity. Please consult the websites and the Journal for details. Dates: arrive in Manila on 14 October, the Manila sessions take place on 15, 16 and 17 October; relocate to Hong Kong on Thursday 18 October, followed by two days (19 and 20 October) at the Maritime Museum there. The usual tourist trips before and after are still on the drawing board.

I would like to take this opportunity to announce that Katherine Parker, an American researcher residing in London, has joined the Executive Committee. She specialises in maps of the Pacific Ocean area, thus increasing the Committee's expertise in this area.

Changing the date for the London Map Evening to autumn has regrettably not worked to increase the number of participants, so we are rescheduling the 2018 Map Evening back to spring. Further news on the Committee's activities can be found on page 7.

Repeating my opening lines: on behalf of your Executive Committee, we wish you all a smooth transfer into 2018, good health all around and Happy Hunting for your favourite map in the New Year!



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WELCOME TO OUR NEW MEMBERS

Diana Arhir, Germany

Stefano Bifulco, Italy

Vladimir Bulatov, Russia

Wolfram Dolz, Germany

Angela L. Huang, Germany

Charles Austin Johnson, Colombia

Pierre Joppen, France

Dr Stefaan Missinne, Austria

Christine M. Rafalko, USA

Collection interest: Maps with interesting artwork or historical significance

Douglas Sims, USA

Leah Thomas, USA

Luca Tricerri, Italy

Rob H. van Gent, The Netherlands

Michiel van Groesen, The Netherlands

Jacques von Speyer, Mexico

Collection interest: World, Holy Land

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You can check your expiry date and renew your membership on the **www.imcos.org** website, using your username and password. If anyone needs a reminder of their username please contact the Membership Secretary, **Peter Walker**, using **financialsecretariat@imcos.org** or the mailing address on page 3.

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GUEST EDITORIAL

Petra Svatek, Department of History,
University of Vienna

A few weeks ago IMCoS members enjoyed a successful Symposium in Hamburg, one of Germany's most beautiful cities. During many lectures and excursions to interesting map collections the participants got a brief introduction to Germany's long cartographic tradition. In the sixteenth century German scholars took a leading position in the development of cartography. Their maps influenced the entire century. Initially, it developed mainly in southern Germany, especially in Freiburg, Tuebingen, Nuremberg and Ingolstadt. In 1507 Martin Waldseemüller created his famous world map, in which he used the term 'America' for the first time. Other important cartographers include Philipp Apian who produced a map of Bavaria for Duke Albrecht; Johannes Schöner who became the most important globe maker of his time; and Erhard Etzlaub who created two of the earliest road maps of central and southern Europe. In the second half of the sixteenth century the cartographic centre moved to Duisburg, where Gerhard Mercator lived from 1552 until his death in 1594. There he produced his famous world map for nautical purposes (1569) and his *Atlas Sive Cosmographicae Meditationes de Fabrica Mundi et Fabricati Figura* (1595). This first important period of German cartography ended with the Thirty Years' War 1618–1648.

In the eighteenth century German cartography experienced a revival. Publishing houses were founded in Nuremberg and Augsburg and Johann Baptist Homann and the work of his successors Johann Christoph Homann, Johann Gabriel Doppelmayr, Johann Michael Franz influenced the cartography of the whole century. Matthäus Seutter and his publishing house set new standards of production. State organised topographic land surveys were established, of which the Electorate of Brunswick-Lüneburg and the Electorate of Saxony are examples.

At the turn of the nineteenth century scientifically based thematic mapping and atlas cartography reached its apogee. Germany assumed a leading role, largely influenced by the work of Alexander von Humboldt, Heinrich Berghaus, Emil von Sydow, August Petermann and Heinrich Kiepert. Berghaus' *Physikalischer Atlas*, originally intended to illustrate Humboldt's multi-volume book *Cosmos* is a masterpiece of thematic cartography. This development explains the boom in cartographic publishing in Germany. Justus Perthes of Gotha and the Geographical Institute of Weimar helped advance Germany's status in the production of cartographic materials. The period saw a growing general interest in geography, which Petermann fed with his well-known journal *Petermanns geographische Mitteilungen* and his maps of expeditions to Africa, Australia and the Arctic. Production of atlases expanded as teaching aids in schools of which *Stielers Handatlas* is a prime example, and cartography at German universities experienced a resurgence.

This issue includes four articles which give a short introduction to some special topics of German cartography. I hope you will enjoy reading them.



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IMCOS MATTERS

DATES FOR YOUR DIARY

12–13 April 2018

IMCoS visit to Cambridge

12 April at 2pm Visit to the Scott Polar Institute.

Map collectors' evening will be held in Cambridge at 6pm. Venue to be confirmed.

13 April Visits to Emmanuel College and to the map department at Cambridge University Library. Details will be posted on www.imcos.org.

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, filmmaker and author of *The Nine Lives of John Ogilby, Britain's Master Map Maker and His Secrets*.

9 June 2018 IMCoS AGM

Royal Geographical Society (with IBG).

9–10 June 2018 London Map Fair

Royal Geographical Society (with IBG).

Report from 35th Symposium in Hamburg

Members from as far afield as Mexico, Guatemala, Australia, the Philippines, India, Hong Kong and the USA joined European members in the Free and Hanseatic City of Hamburg for the 35th International Symposium. The city's official name reflects its history as a member of the medieval Hanseatic League, a free Imperial city of the Holy Roman Empire, a city state and one of the sixteen states of Germany.

The events of the symposium took place at two locations: the Hamburg Chamber of Commerce and Dr Götze Land & Karte travel bookshop. Their functions – trade and travel – neatly summing up the key components of the medieval alliance of European trading cities, known as Hanse.

Angela Huang, who is Head of Research at the Centre for Hanse and Baltic History in Lübeck, presented an informative paper on its elusive nature, describing it as a loose association of mainly northern European countries which came together between the fourteenth and seventeenth centuries to promote and protect their trade interests and diplomatic privileges. At its zenith the League stretch from its most eastern post in Novgorod to London its most westerly post and Bergen its most northerly. Learning that Elizabeth I expelled the League in 1579 from England drew mental parallels with the current unhappy UK–Europe alliance.

The territorial boundaries of Germany, as expressed in maps, until its unification by Bismarck in 1871 was the topic of the opening presentation by **Wolfgang Sarges**. He cited Sebastian Münster's 1540 *Tabula Europa III* arguing that the 'tribes' depicted in Germania are an early representation of the geographical shapes of what later become states and principalities. Using a dozen or more maps by, for example, De Wit, Homann, James Wyld and finally, Kiepert's 'Karte des Deutschen Reiches' of 1876, Sarges mapped the boundary development of the German nation.

Wolfram Dolz Senior curator at the Mathematisch-Physikalischer Salon in Dresden addressed the rich mapping history of the principality of Saxony under the direction of the Elector August. An adaptation of his paper appears on pages 23–32 of this issue.

As the Director of the State Library of Schleswig-Holstein **Jens Ahlers** was well placed to discuss the mapping of Germany's most northern state.



14–20 October 2018

36th IMCoS International Symposium in Manila and Hong Kong

'*Insulae Indiae Orientalis through European perspective*' is the theme of the 2018 Symposium.

It commences in Manila (14–17 Oct.) with an option to include an extension to Hong Kong (19–20 Oct.) using 18 Oct. as the travel day. The website www.imcos-2018-manila.com is up and running and the organiser Rudolf J. H. Lietz as IMCoS Representative for the Philippines and curator of the Gallery of Prints, supported by PHIMCoS, The Philippine Map Collectors Society, can accept your preliminary reservations.

Historically, the Duchies of Schleswig and Holstein have at different times belonged to either Germany or Denmark, or have been totally independent. A very early example that illustrates this dispute over sovereignty, which in this instance is not over boundaries but water, is the 1528 picture map of the Alster-Beste Canal which links Hamburg and Lübeck. Most memorable among the many maps he presented was the 12-metre long Hamburg Elbe River map by Melchior Lorichs which he made in 1568 for an Imperial lawsuit to prove Hamburg's claims on the river. See page 15 for a detail of Lorichs' map.

Burghardt Schmidt President of the University of Vechta in Lower Saxony discussed maps of Hamburg from the Early Modern era, drawing attention to examples by Matthäus Merian, Johan Mejer, Arendt Petersen, Daniel Frese and Peter Schenk. He outlined what each mapmaker chose to focus on.

While predominantly concentrating on German cartography, the symposium also offered participants a generous sprinkling of topics and geographic areas that looked beyond Germany's boundaries and German cartographers. The breadth of subjects offered underlines the interdisciplinary nature of the history of cartography.

Vladimir E. Bulatov map curator at the State Historical Museum in Moscow spoke about eighteenth-century Russians mapping of the Baltic Sea, an area crucial for trade and military success during the Russian-Swedish war. Bulatov explained the methods adopted by the Russians to chart a coastline infamous for the many ships that had ran aground in the shallows among the Norwegian and Swedish skerries.

Robert van Gent catapulted us into the celestial sphere with his talk 'Celestial Cartography and the Seaman'. Conveniently for his presentation, his audience was settled in the auditorium of the recently refurbished Hamburg Planetarium. A converted water tower from the 1920s, it boasts the latest in digital immersion projection. The massive dome allowed the audience to be enveloped in the heavens as seen by mariners and interpreted by astronomers of the sixteenth and seventeenth centuries. It was spectacular.

Stefaan Missinne presented the advances he has made in his research on the ostrich-egg globe since his article 'A Newly Discovered Early Sixteenth-Century Globe Engraved on an Ostrich Egg. The Earliest Surviving Globe Showing the New World' was published in *The Portolan* in 2013. Isolating particular pictographic details, as well as the way in which the engravings had been executed (by a left-

handed person), Missinne argued that the globe is by Leonardo da Vinci. The recent all-time record sale at Christies of *Salvator Mundi*, attributed to the Renaissance genius in which Christ holds a crystal orb, adds further interest to Missinne's research.

Michiel van Groesen spoke of printed accounts – text and illustrated – of seventeenth-century Dutch settlement in the north-east corner of Brazil and the role of the fledgling newspaper culture in spreading information of the success and failures of the colony. For those interested there is Van Groesen's book on the subject: *Amsterdam's Atlantic: Print Culture and the Making of Dutch Brazil*.

Ulrike Gehring considered how coastal profiles in Dutch pilot guides were employed by maritime painters of the Dutch Golden Age. She explained that this phenomenon might have occurred as a result of the communication between those artists and cartographers who belonged to the same of guild in Haarlem in the seventeenth century. Willem van de Velde, Salomon van Ruysdael and Hendrik Cornelisz Vroom are some the artists who, she argued, adapted such profiles in their seascapes.

Michael Bischoff explored the influences of art on the science of mapmaking. Following in the footsteps of IMCoS past President Rodney Shirley, Bischoff considered the iconography used on map cartouches and on atlas title pages, in particular he analysed the significance of representations of the figures of Neptune and Cybele, Mars and Mercury.

Stephan Hormes from Kalimedia Publishing in Lübeck is a mapmaker who uses maps as a source of digital storytelling. In his presentation he outlined some of the many interactive map projects that he had produced. For example the online map *Goethe's Frankfurt: Poetry and Truth* allows you to follow, on Matthäus Merian bird's-eye view map of the city of Frankfurt, Germany's national poet Johann Wolfgang von Goethe to his favourite haunts.

Two evening presentations were given at the Dr Götze Land & Karte bookshop, premises of symposium sponsor Dr Farhad Vladi. Vladi had been a regular visitor to Dr Götze's shop; here he bought maps for his business as realtor of islands. When Dr Götze retired seventeen years ago, Dr Vladi bought the business. While he is an enthusiastic collector, he is also eager to promote and support maps for humanitarian ends and for this reason he had invited **Ian Davies**, Fund Raiser and Marketing Manager for MapAction, a NGO that specialises in providing mapping for humanitarian emergencies. Davies explained that



The Symposium participants in front of the Eutin Landesbibliothek, now home to the map collection of past IMCoS President Oswald Dreyer-Eimbcke. Professor Dr Axel Walter on the far left of the photo gave us a very lively and entertaining account of the Library's history and holdings. Photo: Raissa Waskow, *Ostholsteiner Anzeiger*.

MapAction deploys skilled volunteers to disaster areas where they gather crucial data and translate it visually in the form of maps. By creating this 'shared operational picture' for aid agencies, governments and local partners, they can help them make informed decisions regarding the delivery of aid and emergency supplies to the right place, quickly.

David Goldthorpe Senior Director and Head of Department Books & Manuscripts at Sotheby's concluded the evening with a talk on maps from an auctioneer's perspective. He spoke on the future of maps and atlases. With many years of experience at Sotheby's and instrumental in several significant single-owner sales, including those of the Earls of Macclesfield, the late Lord Waddington and Lord Hesketh, he is well placed to remind collectors that fashion changes and as a result maps and atlases don't always hold their value, but rarity does.

Symposium excursions included a tour of the library of the Hamburg Chamber of Commerce where the morning lectures took place. The library was established in 1735 with the purpose of educating the city's merchants and traders, providing them with sources of information that would promote their business activity domestically and abroad, hence the library's good collection of early travel literature and atlases. What developed as a result has, over the centuries, become one of the most valuable collections of books in Hamburg. The visit to the City Archives (Staatsarchiv der Freien und Hansestadt Hamburg) gave us the opportunity to see their most precious item: the sixteenth-century painted map of the Elbe by Lorichs which Jens Ahlers spoke about in his presentation and which is also referred to by Regine

Gerhardt in her article on Braun and Hogenberg's views of Hamburg on pages 13–22. Thirty thousand metres of documents, housed at the Archives, record 300 years of the city's history.

Eutin, 100 km north of Hamburg, was our first stop en route to Lübeck. It is described in *Zedler's Universal Encyclopedia of all Sciences and Arts* in 1734 as 'a small town in Wagria in the centre of Holstein'. For a small town it has a rather special library. The origin of the Eutiner Landesbibliothek is the private collection of Peter Friedrich Ludwig, Grand Duke of Oldenburg. Amongst its holdings is an exceptional gathering of historical travel literature and in 1992 it was established as a centre of research for travel literature (Forschungsstelle zur historischen Reisekultur: www.dgej.hab.de). It also houses one of the most important collections of historical maps in Northern Germany of which the private collection of past IMCoS President Oswald Dreyer-Eimbcke (1923–2010) is a significant part. The broad scope of the map collection reflects the Library's acquisition history: the Eutinian Court had close connections with the Russian royal family and was able to procure numerous rare eighteenth-century Russian maps; the collection of Carl Martin Rohrbach and astronomer from Gotha concentrated on maps of the Arctic region, while maps of Chile, Patagonia and the Magellan route came via Dreyer-Eimbcke.

On display, especially prepared for our visit, was an exhibition of a small portion of their holdings of maps of the local area, all from Dreyer-Eimbcke's collection. The exhibition had fifteenth- and sixteenth-century examples of the town and the area of Holstein by Andreas Angelus, Johann Benjamin Brühl, Melchior Tavernier, Marcus Jordanus, Hondius and Johannes Mejer.



Left Organisers Wolfgang Sarges & Lisa Brümmer presenting IMCoS photographer David Webb with a map tie of Berlin to add to his collection.

Centre Caroline and Peter Batchelor at the reception at Dr Götze Land & Karte bookshop.

Right Host Dr Farhad Vladi receiving the Symposium plaque from Chairman Hans Kok.



L to R David Dare, Eckhard Jäger, Wolfram Dolz, Wes Brown, Ljiljana Ortolja-Baird & Michael Bischoff.



L to R Sonja Hertel, Peter Walker, Tom Sander, Alexandra Quauck, Cyrus Alai, Susanna Fisher, Robert Berg & Eugenie Sander touring the Commerzbibliothek.

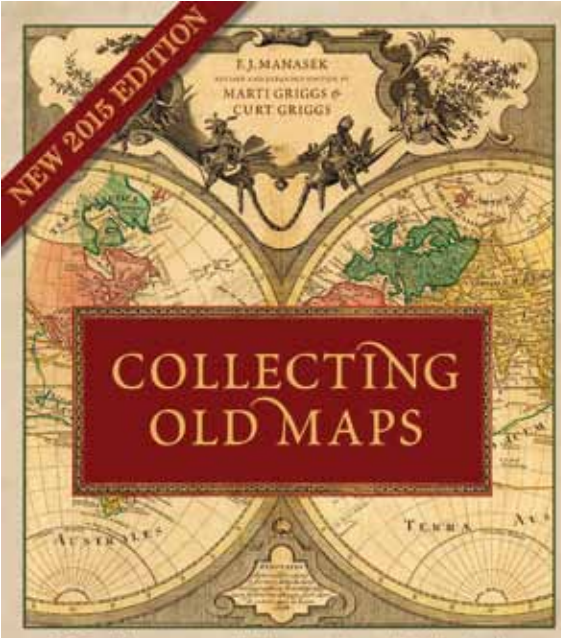


Left *L to R* Nancy and William Brandenburg, Peter Geldart, Lyn Hanon, Fedeliz Geldart & Stephen Hanon at the farewell dinner.

Right *L to R* Saraswati Sohdi, Peter Batchelor, Wulf Bodenstein, Manosi Lahiri & Jonathan Rosenwasser at the farewell dinner.

Photographs by David Webb.

A trip to Northern Germany is not complete without a visit to Lübeck, once the heart of the Hanseatic League; today it is listed as a UNESCO World Heritage site. While home to that delectable almond-based confection marzipan, our gaze was averted to the more worthy purpose of studying the Hanseatic League. Led by Dr Angela Huang director of research at the European Hansemuseum we were richly regaled with the history of this medieval commercial confederation. The museum consists of a permanent exhibition with exhibits of original historical objects, interactive elements and staged historical scenes from the former Hanse trading ports of Novgorod, Bruges, Bergen and London, as well as Lübeck. The original historical items displayed include documents, paintings and gold and silver coins from the so-called Lübeck Hoard. The exhibition is aimed at informing visitors about the overall history of the Hanseatic League from its formation to its dissolution, but also about its economic and trade networks as well as of everyday life in the historical time span during which the Hanse existed.



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HAMBURG TIMES THREE

The intellectual principles of the Civitates Orbis Terrarum

Regine Gerhardt



Fig. 1 'Lubeca' and 'Hamburga', No. 25 from *Beschreibung und Contrafactur der vronembster Stätt der Welt Tomus Primus*, Braun Hogenberg, 1574. UB Bern, ZB, Tyh 5212.1.

Volume I of *Civitates Orbis Terrarum*, a collection of city views, was first published in 1572 in Cologne. The series continued until 1617 with a further five volumes, all published in Latin, German and French editions.¹ Clergyman Georg Braun from Cologne was not only the primary publisher of Volumes I through V but he also authored the explanatory texts for the towns as well as extensive introductions. These are written from a humanistic viewpoint. The interrelationship between text and image make for a well-ordered structure.

Emphasising the innovative potential of city views throughout the text, Braun formulated the intellectual principles for the series. He set out the function and didactic aims, the preferred manner of representing

towns and the specific perception accompanying the visual images. The Hanseatic city of Hamburg appeared three times in the *Civitates*: in Volume I (1572) with a prospect; in Volume IV (1588) with a rare birds-eye view which was replaced with a third new version in 1590. The central theme of this article is not the development of town representations as such, but the visual images associated with the respective representations and the idealistic concepts they conveyed.²

Innovative potential

The idea for a book of city views is attributed to Franz Hogenberg who emigrated from the Netherlands to

Cologne and worked with Braun as co-editor until his death in 1590. Similar to the collection of maps published by Abraham Ortelius in Antwerp in his atlas *Theatrum Orbis Terrarum* from 1570 onwards, the editors of the *Civitates Orbis Terrarum* aimed to give a *Contrafactur und Beschreibung von den vornembsten Stetten der Welt*, as they stated in the title of the German edition. They intended to provide a collection of *Ebenbilder* (likenesses) of European and distant towns, variously depicted, which would be accompanied with *Histories*, written descriptions of the towns. These would contain historical, topographical and further local information. Following the antique dictum *prodesse et delectare*, which was popular in the Early Modern period, the aim of the city book, as Braun wrote in the introductions to Volumes I to IV, was not only to entertain the readers but to educate them; to offer a substitute to actual travel; to prepare those intending to travel; and supply models for architects, artists, the military and politicians. Braun declared this proposal unique. It was directed at a market increasingly interested in cartographic representations of the World and especially in visual representations of towns. At the end of the fifteenth century, self-contained images of towns in different modes of reality illustrated the travel descriptions to the Holy Land by Bernhard von Breydenbach and Hartmann Schedel's *Chronicle of the World*. As early as the middle of the sixteenth century, books were printed which dealt with representations of towns. The first such title *Cosmographie oder Beschreibung aller Länder, herrschaften und fürnembsten Stetten des ganzen Erdbodens* was published in Basel in 1544 by Sebastian Münster. It was followed by books by Guillaume Guérout in Lyon at the beginning of the 1550s. More were also published in Venice in the 1560s.³ Despite this precedent, Braun's claim to be innovative was justified because he aimed to address a wider audience, not only the educated reader, and he planned to concentrate on city views. In this way *Civitates* differed from Münster's *Cosmographie* which contained predominantly written descriptions of the habits, traditions and political systems of whole countries, and until 1550 used mainly fantastical visual representations of towns. Braun emphasised the special quality of the illustrations by Franz Hogenberg and Simon Novellanus. In his introduction to Volume I, he declared they were '*artlich / lebendig/ unnd mit aller Stätte proportion / gelecht / und gestalt an tag gethan*' (artistic, lively and with correct proportions and form). Furthermore, the towns were '*Topographische*

/ Geometrische / un[d] nach der perspectiff kunst / gelecht un[d] manier auff das allerfleissigst abgerissen' (carefully drawn with topographical and geometrical details following the art of perspective). Braun promised the reader visual representations of the towns of such a high quality that they would '*die Stätt selbst / für den augen scheint zu haben*' (have the town right before his eyes). This was the unique selling point of the *Civitates*. Braun's concept behind this method of representation and its resulting visual effect can be explained by considering the three city views of Hamburg.

The prospect of Hamburg – the town as an ideal microcosm

A prospect of Hamburg appeared in the first edition of the *Civitates* in 1572.⁴ Hamburg was depicted for the first time with a non-fictional city view for a wider public. The view of the Hanseatic town is from the south (Fig. 1) and is a typical depiction of the town which, as written sources indicate, was developed in Hamburg.⁵ One of the few surviving examples is on the famous 12-metre long map of the River Elbe by the Flensburgian artist Melchior Lorichs (Fig. 2).⁶ The map was commissioned in 1568 by the Council of Hamburg as evidence in a lawsuit concerning Hamburg's dominion over the Elbe. However, because of its greater topographical exactness in the depiction of Hamburg and its more modern use of a higher viewpoint, the Elbe map cannot be regarded as the source for the first view of Hamburg in the *Civitates*. The illustration in the *Civitates* shows a city view dominated by Christian buildings. It is seen from the south, across the horizontal stretch of the Elbe in the foreground. A modern ring of defence emphasises the town's powerful fortification and separates it from the countryside. On the other hand, bridges, gates and the harbour connect town and country. City dwellers are shown occupying the outskirts of the city. The waterways guide the viewer's gaze into the town. The sheer mass of houses, compact and tightly packed, shows the populous and prosperous community. Although the image is depicted from a slightly elevated viewpoint, the town seems to rise as if we are looking from below. This paradox has its origins in a medieval perspective technique. When attempting to make visible houses behind one another the artist would depict them above each other. The architecture is rarely differentiated, but prominent religious buildings are emphasised by their size. They demonstrate the strength of the town's Christian faith and help to identify the city.

A banderole with the title 'HAMBURCH EIN VORNE[M]LICHE HANSESTAT' (Hamburg, an elegant Hanseatic city) works together with the inscription in the cartouche to stress the special commercial orientation of the Hanseatic city and mentions the important relocation of the English textile market (Tuchstapel) from Amsterdam to Hamburg in 1567. Ocean-going ships and inland vessels indicate the significance of the waterways for trade. In this way, the visual and textual information work together.

The peaceful atmosphere of the landscape which surrounds the town is characteristic of the city views in the *Civitates*. The bright weather, the cattle grazing undisturbed and the people occupying themselves in the countryside indicate the lack of any threat from outside. In his introductions Braun conjured up the ideal community, celebrating the town as a civil achievement. He set out a history of the origin of human community, claiming that urban development had its roots in the social behaviour of human beings helping each other. He praised at

length an historical golden age when hostilities were unknown. The town as a social and political entity is an object through which Braun revealed a complex political concept of state and religion. In doing so, he did not omit explanations of recent conflicts. His claim that the worst evil which might ruin a country or a town would be the division of the Christian faith pointed to the religious and political events taking place in Germany, France and the Netherlands at the time. The Catholic clergyman pleaded for a common church service as a maxim of all political activity and as a fundament of civic organisation. He made no negative judgements about Protestant towns in the *Civitates*. Most important in Braun's concept of the ideal city is its role as a microcosm of a well-ordered polity. The town is a manifesto made of stone for which an ideal social, political and religious community comes close to the golden age. In this way Braun continued the medieval idea of utopia in which the Christian town is the perfect community and its social order is pleasing to God. The city views of the *Civitates* aim to



Fig. 2 Detail of Hamburg from 'Map of the River Elbe' by Melchior Lorichs, 1568. Drawing after the original. State Archive of Hamburg.



Fig. 3 'Hamburgum', No. 36 from *Urbium praecipuarum totius mundi Liber Quartus*, Braun Hogenberg, c.1588. State Archive of Hamburg, 421-1.



communicate this ideal. The image of the Protestant city of Hamburg illustrates this concept of a sheltered and peaceful town, surrounded by a well-ordered defence system, guided by the Church, successfully engaged in trade and summed up in an homogeneous ideal city construct. Because of this, there are generally no depictions of historic or contemporary political incidents like sieges or invasions of towns in the *Civitates*. Instead, Braun presents peaceful idealised city views which reinforce the validity of his message.

The double promise of reality

In Volume I Braun presented city views which were 'so artlich / lebendig / ... das man nit deren ebenbildt und contrafactur: sonder die Stätt selbst / für den augen scheint zu haben' (so artistic, lively... that you do not seem to have its likeness and image, but the city itself before

Fig. 4 Detail of Hamburg from 'Pinneberger Landtafel' by Daniel Frese, 1588. Niedersächsisches Landesarchiv, Staatsarchiv Bückeburg.

your eyes). The city views would have been painted or illustrated 'nach dem leben' (from real life). So, Braun gives a double promise of reality: the depiction was made after the real visual experience of the artist looking at the town and, they are of such a quality that the viewer believes he experiences this view himself, live. This seems to contradict the visual premise of the city views of the *Civitates*. The Hamburg prospect, for example, does not deny its character as an image: it contains schematically depicted elements, it is given from an artificial viewpoint and it is modelled after a specific idea of the town. It is an obviously contrived view which could not be perceived naturally.

An approach to solving this alleged contradiction can be found in the Early Modern concept of truth to nature and the antique rhetorical concept of *ekphrasis*, which means a verbal description of an object, a location or an incident in such detail that the listener becomes a viewer.⁷ The aim of *ekphrasis* is to gain the greatest possible clarity for the audience: the visibility working as evidence to the truth of the description. To name the visual quality of the verbal description antique authors used the same expression as Braun used in his introductions: the object has to be put 'in front of the eyes'.⁸ So, Braun used a topos of praise for his city views by which he focused less on laying claim on reality but on giving evidence by visual clarity. With visibility and focus, certainty arises. This visibility can be generated artificially. The artificial scope allowed for more to be seen than could be naturally. Braun promised the viewer images of the city in the way the artist experienced them – the images are not only the products of the viewing experience of the artist, but are also results of the mental and artistic adaptation of his observation. The issue of adapting nature, which occupied thinkers in Early Modern times, meant not only artistically capturing the outer appearance, but also idealising the visible in the artwork, which meant that nature was surpassed.⁹ The benchmark for the representation of the visible was the exact observation of nature. For artistic depiction individually observed sections were built up to form a second, artificial new 'nature' which did not match the real viewing experience. Braun's statement that the city views in the *Civitates* were made from observations did not contradict the mental process of the artistic transcription into the final city view nor did it lose its claim to being true to nature.

The older bird's-eye view of Hamburg – an insight into all paths

The number of editions of *Civitates* increased also by including new depictions of cities previously represented. For the first time in 1588, in the Latin edition of Volume IV, we find a view of Hamburg from bird's-eye perspective (Fig. 3).¹⁰ This very rare sheet shows Hamburg from the south from a simulated viewpoint of a bird looking towards a high horizon. The chosen perspective gives an overview of the layout of the city's structure and its geographical setting. At the same time the three-dimensional architecture of the town, as well as the shape of the surrounding countryside and its vegetation are depicted. An earlier source for this view of Hamburg in the *Civitates* is not traceable. Only on the 'Pinneberger Landtafel' by Daniel Frese of 1588, commissioned by Count Adolf XIV of Holstein-Schauenburg, showing the County of Holstein-Pinneberg, can we find a bird's-eye view map of Hamburg (Fig. 4).¹¹ Because of this it has been suggested that Frese might be responsible for the bird's-eye view of Hamburg in the *Civitates*. However, the Hamburg map differs stylistically from other works by Frese in the *Civitates*. Furthermore, the architecture of Hamburg depicted on the 'Pinneberger Landtafel' is from an earlier date.

Compared to the prospect of Hamburg in Volume I the bird's-eye-view offers new 'insights' into the Hanseatic town.¹² Now the shape of the defence and city walls, which were built between c.1531 and 1549 at a vast cost, are clearly visible. Prominent gates in the west, northwest, east and south show the interlocking of Hamburg with its surroundings, likewise the connection to the extensive area of the Elbe in the south and the River Alster flowing from the north into the Elbe. From a bird's-eye view, for the first time, the sheer size and function of the Niederhafen (low port) and the extension of the waterways within the town are visible. The cartouche points to this saying Hamburg has 53 bridges, some made out of wood, some out of stone. A great variety of water vessels presents the city as a busy trading place whose infrastructure and functional system of gates, open space, ecclesiastical and secular buildings, living space, ports and workshops can be detected. Contrary to the earlier depiction of Hamburg not only are churches prominent, but so too are other religious buildings. Everyday public places which are labelled, such as the town hall and the open air spaces around the stock exchange are evident. Hamburg was one of only four cities in Europe with a stock market at this time. With

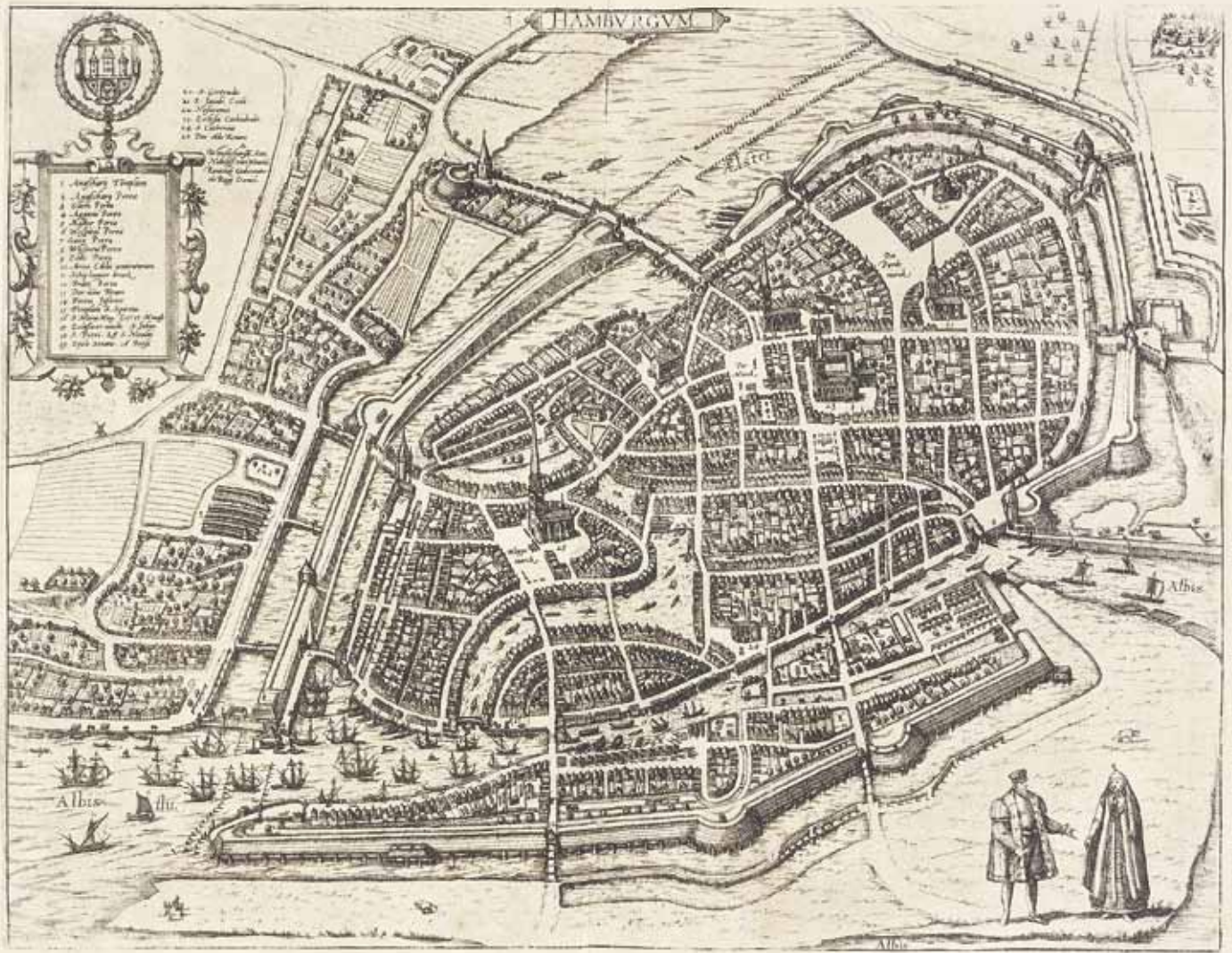


Fig. 5 'Hamburgum', No. 36 from *Contrafactur und Beschreibung von den vorembsten Stten der Welt Liber Quartus*, Braun Hogenberg, 1590. UB Bern, ZB, Tyh 5212.11.

the help of this map, despite the inaccurately widened streets and the artificial structure of the compactly arranged and schematically depicted houses, for the first time the viewer was able to orient himself within the topography of the town.

At the time this sheet was published in the *Civitates* in 1588 the architecture represented was no longer accurate. The map can be dated between 1568 (when Castle Wandesburg was erected) and the early 1570s, because in 1578 construction work began for the stock exchange which is not shown.¹³ The important advantage of this map over the prospect of Hamburg, was the possibility, '*dass der Leser in alle Gassen un[d] Strassen sehen / auch alle gebäu und ledige plazen anschauen kann*' (that the reader could look in all the lanes and streets and could see the architecture and the open space), which Braun had promised in Volume III. This claim for a special insight and

overview corresponds with Braun's wish to present the town in every detail as an architectural ensemble. Braun's socio-political idea of the town justified that it be considered worthy of representation in single views and be central to humanistic education. It is also justified by Braun's appreciation of architecture as an art form of the highest rank, as he explained in Volume I. Braun occupied himself less with the humanistic concept of an ideal city which dealt with an optimal plan for a town mirroring the sovereign order. He was more interested in celebrating a town as an artwork, following Leon Battista Alberti's (1404–1472) approach which insisted on the primacy of architecture with its social and political significance. In particular, the dominant use of bird's-eye view maps throughout the *Civitates* supports the perception of city views as an homage to architecture which reflected a well-run social order.

The younger bird's-eye-view of Hamburg – on the benefit of chorography

As early as 1590, in the German edition of Volume IV, a more current bird's-eye view, also oriented to the north, was published (Fig. 5).¹⁴ We can assume numerous reasons for changing maps:¹⁵ most importantly it would have been because the architecture was out-of-date. On the 1590 map, on which numbers identify key locations, we see the new bell tower of the St Jacobi church (No. 21) which was erected at the end of the 1580s and the new building for the stock exchange (No. 26) which was finished in 1583, but destroyed by lightning in 1589. It shows also the new bastions in the north, the building development in the area north of the cloister St Maria-Magdalena (No. 16) along the former old walls and the area west of the new walls. From the second half of the sixteenth century onwards Hamburg experienced a great influx of immigrants, mainly religious refugees from the Netherlands and Portugal. They strengthened the local economy with new wealth, trade relations and skills.¹⁶ The increasing population was the reason for more and more settlements appearing outside the city walls. This phenomenon is made very obvious in a 1587 engraving by Daniel Frese in which Hamburg is seen

from an unusual easterly direction which highlights the development of the western periphery (Fig. 6).¹⁷

The focus of the new bird's-eye view is, however, Hamburg's economic activity, especially its trade on the water. This is evident by the new perspective: instead of presenting the town from the familiar southern view it is now seen from the south-east. In this way the western lower port (No. 14) and the western part of Brook Island with its harbour activities and the dockyard are clearly seen in the foreground. The increased steep angle of the bird's-eye view focuses more on the ground plan of the town and offers a more detailed view of the street system, the waterways and the architecture. Similar to the older bird's-eye view, architecture and elements of the landscape rise from the ground plan, but they are more shortened by the steep view. At the same time, the town comes so close to the reader's eye that, for example, you can even observe the work on the ships at Schiffbauer Brook (No. 11). In the centre of the image is the new building of the stock exchange. The town hall, the crane (No. 27) and the stock exchange are the economic and political core of the city. Different boats and ship types demonstrate the different use of the waterways and the movement of goods. For example, the wooden rafts



Fig. 6 'Hamburgum', single sheet print by Daniel Frese, Christian Sylvius et. al., 1587. State Archive of Hamburg, 131-2/158.71.

before the upper harbour which are depicted here for the very first time refer to the importance of the transport of wood.¹⁸ Compared to the previous bird's-eye-view, the market places of the town are given more prominence. Equipment for textile finishing is depicted on the Wandrahm Island in front of the Winsers Gate (No. 8). Since 1530 this industry had been so successful that it was possible to finance building the stock exchange from the 'Stalgeld' which the finishers had to pay to the town.¹⁹ A consequence of concentrating on a new close-up of the town was that it was no longer possible to show the Elbe in full flowing along the Grasbrook Island. The new view also required a new place for the figures in local costumes. Braun describes them in Volume III as an important part of the travel experiences which the reader will enjoy with the help of the *Civitates*. The paired communicating figures in the foreground are symbols of a well-observed social order. By pointing towards the town they also function to lead the reader on his 'travel with his eyes' into town.

In Volume III Braun took up a discourse which developed the geographic-scientific background for the *Civitates*, namely the relationship between geography and chorography. Since the rediscovery of the antique texts of Ptolemy in the fifteenth century, and until the seventeenth century, the separation and the inter-relation between the two, which Braun described as between the *Weltbeschreibern* (those who describe the world) and the *Ortsbeschreibern* (those who describe the local place) was an important topic in scholarly discussions. Ptolemy defined geography as a 'copy of the whole known part of the earth with the help of drawings'. He explained the difference between geography and chorography with an example which Peter Apian illustrated at the beginning of the sixteenth century (Fig. 7): 'The nature of geography is this: it shows the connected earth as an entity and its nature and position ... in contrary the goal of chorography is the depiction of a single part, like copying an ear or an eye itself; the goal of geography is to observe the whole object like drawing the whole head'.²⁰ Ptolemy seemed to prefer the result of the geographer whose map was based on abstract mathematical recording, represented by dots and lines. Braun preferred chorography. In Volume III he pointed out geography's shortcomings which he claimed showed the whole, but superficially. He compared it to a good artist who knows how to paint the shape of a body, but unfortunately ruins the picture with a bad drawing of the face. On the other



Fig. 7 'Geographia' and 'Chorographia' from *Cosmographia sive Descriptio universi orbis*, Peter Apian and Gemma Frisius, Antwerp 1584, fol. 3. Staats- und Universitätsbibliothek Hamburg, Scrin A/747.

hand, the *Topographus* or *Ortsbeschreiber* (those who describe the local place) explains 'dasselbige alles einzlich nach einander / legt jedes theil der Welt / ... Historischer weiß sönnderlich auß / und stelt dem Leser ein jedes also für die augen / daß er sich lässt beduncken / als sihe er die Statt oder den ort / davon geredt wirt / persönlich für sich ligen' (the same thing piece by piece, interprets every part of the world in a historic way and brings everything to the eyes of the reader in such a detailed way that he believes that the town or the place in question is right in front of him). Braun confessed that he considered chorography to be a more successful *ekphrasis* because the sequence of detailed and exact city views, accompanied with the *Historien* (histories), provides clarity for the reader. When compared against a two-dimensional map – an abstract medium which needs an intellectual transfer by the reader – the topographic image, given in perspective, goes 'straight' to the eye of the reader. It pretends to mirror a viewing experience and demands interaction with the senses.

Braun adhered to the Early Modern discourse on the paramount importance of the visual sense. He

believed that knowledge of the world could only be gained by travelling and that all antique *Historienschreiber* (authors of history) undertook travel. But travel was a costly, dangerous, exhausting and time-consuming pursuit. Braun proposed his city book as an alternative. He explains in Volume III that the reader could ‘*in alle Gassen un[d] Strassen sehen*’ and ‘*frey und ohn alle forcht ... spazieren mag*’ (look in all the alleyways and streets and walk around freely and without the fear that one might experience if travelling in person). The *Civitates* is not only a substitute for travelling, but a better alternative. The suggestive power of the city views and their authenticity are not gained by pointing out surveying techniques or their mathematical basis but by their pictorial mode of representation. There are remarkably few cartographic elements like compass roses, scales or survey instruments to be found in the *Civitates*.

The mental experience of space

From the very first publication of the *Civitates Orbis Terrarum* city views and bird’s-eye view maps became more and more popular which confirmed the guiding principles set out by the editors. Braun’s commitment to visuality was reinforced and the elaborate and large city views framed by political descriptions and supplemented with historical, geographical and cultural information became the focal point of the books. The preference of viewing over reading, the emphasis on visual clarity and the suggestive power of the city views in the sense of *ekphrasis* and the praise of the pictorial chorography over abstract mathematical geography in Braun’s introductions are the principles with which the city views were conceived. These aspects are evident in varying degrees in the different types of representations. While the prospect of Hamburg, for example, in its representation meets Braun’s idea of the peaceful, ideal city community, the two bird’s-eye views stress in different ways the detailed insight into, and panoramic view, of the town, as Braun promised. The preference of seeing over reading plays not only a didactic role in the *Civitates*, but is at the core of it. It is an intellectual invitation to collect knowledge and understanding of the near and distant world through the visual experience, connecting it with Renaissance thinking which had been inspired by Ptolemy’s methodical approach. Ptolemy endeavoured to master space not only by the physical discovery of the World, but also by art and science. To recognise the world with the eyes – almost as an intellectual organ –

is mirrored in metaphors of seeing as expressed by Machiavelli, for example. In *Il Principe* (1513–14) he recommends that princes, in order to learn about the character of their subjects, should behave like an artist who climbs a mountain to gain an overall view over the landscape.²¹ The play of different points of view, as offered in the different modes of representation of the city views of the three Hamburg examples, highlights the significance of the point of view. They provide for different visual insights which reflect specific ideas of a (town-)reality. The topographic images are not only representations of the world, but are, at the same time, projections of the world which result in a mental awareness and valorisation of space.²² Contemporary literature recommended that travellers seek a high lookout to get an overview of the town they are visiting – the reason for this is not just to gain better orientation, but to learn about the overall structure of the town in an abstract sense.²³ What a real point of view is able to perform, an artificially created perspective can do better. While city views from a slightly elevated point of view imitate a natural viewing experience, the artificial point of view creates a visual radius which was deliberately chosen by the artist, as the bird’s-eye views from different distances and angles show. The intensity and the extent of the offered (in-)sight and knowledge seems to be limitless. The intellectual curiosity – forbidden since late antiquity – to see what is in heaven and thereby imitate the godly view of looking down on Earth from a height, is mirrored in the negative judgement of the mythological figure of Icarus. Not until the seventeenth century did Icarus become a positive symbol representing the conquest over borders.²⁴ Petrarch’s description of his ascent to the top of the Mont Ventoux in 1336 can be read as a sign for the beginning of a new perception of the earthly world freeing itself from religious restrictions. Petrarch was startled by his own bravery, but afraid that he may lose his salvation he descended quickly. That divine skills are at work is implied by the wide, open view seen from above. It resembles the bird’s-eye view maps produced 240 years later in the *Civitates*. This inference is reinforced in a poem by Alexander Grapheus which prefaces the Latin edition of Volume I. It recounts the story of Panoptes and Thaumastes. While leafing through the pages of the *Civitates*, Panoptes declares that he can see as much as Jupiter can from heaven. Braun too offers his readers a ‘visible’ world in which city views are messengers of geographic and mental space.

Notes

1 The basis for this article are the original editions and single sheets from the collection of the Staats- und Universitätsbibliothek Hamburg, the State Archive of Hamburg and the Commerzbibliothek Hamburg as well as the facsimile editions *Braun & Hogenberg Civitates orbis terrarum 1572–1618*, introduced by Raleigh A. Skelton, Bärenreiter Verlag, Basel et al. 1965, and *Georg Braun und Franz Hogenberg, Beschreibung und Contrafactur der vornembster Stätt der Welt*, introduced and commented by Max Schefold, Müller & Schindler Verlag, Stuttgart et al. 1965. The quotes come from the latter facsimile. The facsimile editions date: Vol. I (1574), Vol. II (1576), Vol. III (1582), Vol. IV (1590), Vol. V (1598). The first editions in Latin were published: Vol. I (1572), Vol. II (1575), Vol. III (1581), Vol. IV (c.1588), Vol. V (c.1598), Vol. VI (1617), see Skelton 1965, pp. 11. The Volumes have different titles, in the article the city books are called *Civitates*.

Most recent on Braun & Hogenberg: *Die schönsten Städte Europas, die Städtebücher von Georg Braun und Franz Hogenberg*, exhibition catalogue ed. by G. Ulrich Großmann, Germanisches Nationalmuseum, Nuremberg 2017. For a compact overview: Lilli Martius, 'Darstellung des Ortsbildes in Ansicht und Plan', in: idem. and Olaf Klose, *Ortsansichten und Stadtpläne der Herzogtümer Schleswig, Holstein und Lauenburg*, Neumünster 1962, pp. 27–136, pp. 45–94. See also Ingrid von Kampitz, 'Civitates Orbis Terrarum' *Ein Städtebuch von Georg Braun und Franz Hogenberg*, Cologne 1953. A bibliography: Peter van der Krogt, *Koeman's Atlantes Neerlandici*, Vol. IV The Town Atlases: Braun & Hogenberg, Janssonius, Blaeu, De Wit, Mortier and others, Houten, 2010.

2 The article was published in German: Regine Gerhardt, 'Drei Mal Hamburg – zum intellektuellen Programm der *Civitates Orbis Terrarum*', *Cartographica Helvetica* 38 (2008), pp. 3–12.

3 See Lucia Nuti, 'The Perspective Plan in the Sixteenth Century: The Invention of a Representational Language', *Art Bulletin* 76 (1994), pp. 105–128. On early topographic literature see Ulrike Valeria Fuss, *Matthaeus Merian der Ältere. Von der lieblichen Landschaft zum Kriegsschauplatz – Landschaft als Kulisse des 30jährigen Krieges*, Frankfurt a. M. 2000, pp. 114–130. See also Wolfgang Behringer, 'Die großen Städtebücher und ihre Voraussetzungen', *Das Bild der Stadt in der Neuzeit: 1400–1800*, ed. by idem and Bernd Roeck, München 1999, pp. 81–93 and in a wider context: Jeremy Black, *Metropolis, mapping the city*, London, 2015.

4 *Civitates Orbis Terrarum*, Vol. I, Antwerpen 1572, No. 24, Staats- und Universitätsbibliothek Hamburg, KS 189/963:1 (hand coloured etching, 47.2 x 15.8 cm).

5 See Hermann Hipp, 'Hamburg', *Das Bild der Stadt in der Neuzeit: 1400–1800*, ed. by Wolfgang Behringer and Bernd Roeck, München, 1999, pp. 235–244. Also Burghart Schmidt, 'Die Metropolregion Hamburg in der topographisch-kartographischen Überlieferung der Frühen Neuzeit', *Aufsicht – Ansicht – Einsicht. Neue Perspektiven auf die Kartographie an der Schwelle zur Frühen Neuzeit*, ed. by Tanja Michalsky, Felicitas Schmieder and Gisela Engel, Berlin, 2008, pp. 28–31.

6 *Elbkarte*, 1568, State Archive of Hamburg (coloured drawing in sepia, 1200 x 100 cm). See Jürgen Bolland, *Die Hamburger Elbkarte aus dem Jahr 1568, gezeichnet von Melchior Lorchs*, 3. ed., Hamburg 1985. On Lorchs, see Erik Fischer, Ernst Jonas Bencard and Mikael Bogh Rasmussen (Ed.), *Melchior Lorch*, Vol. I, Copenhagen, 2009.

7 Nikolaos of Myra (5th century), see Wolf-Dietrich Lohr, 'Ekphrasis', *Metzler Lexikon Kunstwissenschaft. Ideen, Methoden, Begriffe*, ed. by Ulrich Pfisterer, Stuttgart, 2003, pp. 76–80.

8 While the antique model concentrates on speech, there is a wider medial scope in early modern times: the Latin phrase for *ekphrasis*, *descriptio*, was now used for pictorial representations also, especially for cartographic material. See Svetlana Alpers, *Kunst als Beschreibung. Holländische Malerei des 17. Jahrhunderts*, 2. ed., Cologne, 1998, pp. 218, 237–240.

9 See Valeska van Rosen, 'Nachahmung', *Metzler Lexikon Kunstwissenschaft. Ideen, Methoden, Begriffe*, ed. by Ulrich Pfisterer, Stuttgart, Weimar 2003, pp. 240–244. Also Klaus Nieher, "'Ad vivum – al vif" Begriffs- und kunstgeschichtliche Anmerkungen zur Auseinandersetzung mit der Natur im Mittelalter und in der Frühen Neuzeit', *Natur im Mittelalter. Konzeptionen – Erfahrungen – Wirkungen. Akten des 9. Symposiums des Mediävistenverbandes*, Marburg 14.-17. March, 2001, ed. by Peter Dilg, Berlin, 2003, pp. 472–487.

10 *Urbium praecipuarum totius mundi liber quartus*, 1588, No. 36, State Archive of Hamburg, 421–1 (hand-coloured etching, 47.4 x 32.6 cm).

11 *Pinneberger Landtafel*, Niedersächsisches Landesarchiv – Staatsarchiv Bückeburg (hand-col. drawing on linen, 436 x 500 cm). See Barbara Uppenkamp, 'Daniel Frese, A Renaissance cartographer to be discovered', *IMCoS Journal* 141 (2015), pp. 17–25 and Doris Meyn, 'Daniel Freses "Landtafel" der Grafschaft Holstein (Pinneberg) aus dem Jahre 1588', *Die Heimat* 70 (1963), pp. 301–312.

12 See also Hipp, 1999, pp. 236–237.

13 Hans Walden dates the bird's-eye-view map of Hamburg to 1574/75, see Hans Walden, *Stadt – Wald: Untersuchungen zur Grüningeschichte Hamburgs*, Hamburg, 2002, p. 67.

14 *Contrafactur und Beschreibung von den vornembsten Stten der Welt Liber Quartus*, Cologne 1590, No. 36 (Schefold-facsimile, see footnote No.1); *Urbium praecipuarum totius mundi Liber Quartus*, c.1600, No. 36, Staats- und Universitätsbibliothek Hamburg, KS 189/964:4; *Beschreibung und Contrafactur von der vornembsten Stten der Welt*, Bd. IV, No. 36, Commerzbibliothek, Hamburg, S/572.

15 The sovereign dependence of the Hanseatic city of Hamburg from the duchy of Holstein, which is prominently depicted on the first bird's-eye-view map by the coat of arms on the left, was politically controversial as early as 1588. It was also assumed that the old printing plate was broken. There are no sources evident which give a reliable reason for the change of the graphics.

16 Rainer Postel, 'Reformation und Gegenreformation 1517–1618', *Hamburgische Geschichte der Stadt und ihrer Bewohner*, Vol. I, ed. by Hans-Dieter Loose and Werner Jochmann, Hamburg, 1982, pp. 191–258, pp. 239–240.

17 *Hamburgum*, 1587, State Archive of Hamburg, 131-2/158.71 (single sheet print, 24.5 x 36.5 cm).

18 See Walden, 2002, pp. 81.

19 See Jörgen Bracker, 'Bildquellen zu Hamburgs Hafenanlagen im 16. Jahrhundert', *Das alte Hamburg (1500–1848/49)*, ed. by Arno Herzog, Berlin, 1989, pp. 15–38, p. 21.

20 'Das Wesen der Geographie aber besteht darin, dass sie die zusammenhängende Erde als Einheit zeigt und welches ihre Natur und Lage ist. ... Dagegen liegt der Endzweck der Chorographie in der Einzeldarstellung, wie wen man etwa ein Ohr allein oder ein Auge nachbilden wollte; der Endzweck der Geographie hingegen in der Betrachtung des Ganzen, geradeso als ob man den ganzen Kopf abzeichnen wollte, Ptolemy, *Kosmographia*, translated by Hans von Mzik, *Des Klaudios Ptolemaios Einführung in die darstellende Erdkunde. Theorie und Grundlagen der darstellenden Erdkunde*, ed. by idem, Vienna, 1938, pp. 13–16. The phrases *Kosmographie/Geographie* respectively *Chorographie/Topographie* are often used as synonyms.

21 Carlo Ginzburg, *Holztaugen: Über Nähe und Distanz*, Berlin, 1999, pp. 223–224.

22 For the cartographic perception of the world as phenomenology of the mind see Karl Schögel, *Im Raume lesen wir die Zeit. Über Zivilisationsgeschichte und Geopolitik*, Vienna, 2003, p. 12.

23 Jan Simane, 'Die Welt im Bild – Städte und Landschaftsdarstellungen im 16. und 17. Jahrhundert', *Das Bild der Stadt in der Neuzeit: 1400–1800*, ed. by idem and Bernd Roeck, München 1999, pp. 56–65.

24 Carlo Ginzburg, 'High and Low: The theme of forbidden knowledge in the sixteenth and seventeenth centuries', *Past and Present* 73, (1976), pp. 28–41, pp. 29–33.

Acknowledgment

Thank you to Hans-Uli Feldmann, editor Verlag Cartographica Helvetica. This article was first published in 2008 in German in *Cartographica Helvetica*.

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MAPPING SAXONY

*Surveying and drawing of the dominion during the reign of
Elector August (1516–1586) and August the Strong (1670–1733)*

Wolfram Dolz

Like many historic German territories, Saxony has had a very turbulent history. Territorial insecurities and the need for effective administration led to the development of a new type of map which ruling princes could use to proclaim their power and ownership over a dominion. In 1547, at the Battle of Mühlberg, Catholic Emperor Charles V (1500–1558) defeated the Protestant Elector Johann Friedrich of Saxony (1503–1554). Since the Duke Moritz of Saxony (1521–1553) had fought alongside the Emperor, the electoral dignity was bestowed on him, meaning that the position of Elector was transferred from the Ernestine to the Albertine line of the Saxon House of Wettin. After Moritz's death, his brother, Elector August (1526–1586), acceded to power. Under his rule, the Electorate of Saxony developed into one

of the leading German territories, both politically and economically. Its prosperity continued, lasting throughout the reign of Elector Friedrich August (1690–1733), until the outbreak of the Seven Years' War in 1756. The territorial policies of these rulers are reflected in the history of cartography in Saxony.

Two of the earliest maps of Saxony are the small woodcut 'Misnia', produced in 1560, and the large painted wall map entitled 'Duringische und Meisnische Landtaffel' [General map of Thuringia and Saxony] dating from 1566. Both these maps were produced in Meissen by the humanist Hiob Magdeburg (1518–1595). On the small woodcut map, the Elbe can be seen as a large river, fed by numerous tributaries, running diagonally across the sheet (Fig. 1). The towns are shown with small dots and labelled in Latin.



Fig. 1 'Misnia' by
Hiob Magdeburg,
Meissen, 1560.
12.2 x 13.4 cm.
Courtesy
Ratsschulbibliothek
Zwickau.

The Ore Mountains and the Thuringian Forest are represented in the form of 'molehills'. The cartouche at the top right includes the initials 'HMA', which stand for Hiob Magdeburg Annaburgensis, and the year 1560. Below that is a sundial with a compass. Owing to the small scale of approximately 1:2,000,000 the map can only give a rough overview of the Electorate. Nevertheless, it came to the attention of Elector August of Saxony, because shortly afterwards Hiob Magdeburg was commissioned to map the entire territory of Saxony.

'Duringische und Meisnische Landtaffel' shows the dominions of the Electorate of Saxony at a scale of approximately 1:250,000. The geographical area represented extends north as far as Magdeburg, east as far as Zittau, south as far as the Eger (Ohře) and west as far as Treffurt. In the bottom left-hand corner

of the map there is small, circular map providing an overview of the territory as a whole. This wall map is exceptional in that it shows a very large number of settlements, more than five hundred are marked. Hiob Magdeburg distinguishes between large, medium-sized and small towns, as well as between market towns and villages with, and without, a church. The symbols for these are explained in a legend, as on modern maps. Settlements and rivers are shown in the form of a ground plan, whereas the mountain ranges, such as the Harz and the Ore are depicted with a three-dimensional effect, from a bird's-eye view. The economically important mills and forests were also marked on the map. The position of the settlements in relation to one another is astonishingly accurate. The map is surrounded by forty-six portraits representing the ancestors of Elector August (Fig. 2).



Fig. 2 Detail of 'Duringische und Meisnische Landtaffel' by Hiob Magdeburg, Meissen, 1566. Paint on paper. 119 x 151 cm. Courtesy Sächsische Landesbibliothek – Staats – und Universitätsbibliothek Dresden (SLUB). The full image can be seen at www.deutschefotothek.de/documents/obj/90007626



Fig. 3 Detail of 'Landtaffel der Marggraffthümer Meissen und Lausitz' by Bartholomäus Scultetus, Görlitz showing the bridges over the Elbe at Dresden, Meissen, Torgau and Wittenberg, 1568. 26 x 35 cm. Courtesy Kupferstich-Kabinett, Staatliche Kunstsammlungen Dresden.

Hiob Magdeburg evidently conducted the surveying on which the map was based, because in the bottom right-hand corner we can see surveyors measuring angles with a compass in their hands and determining distances with a measuring rod and a large set of dividers. Above the group is a geodetic astrolabe, also known as a graphometer, which was one of the most important angle measuring instruments of the period.¹

Since the large 'Landtaffel' map was intended only for the Elector, no information about it was passed on to the general public. Hence the mathematician Bartholomäus Scultetus (1540–1614) from Görlitz created a woodcut map of Saxony at the same time as the 'Landtaffel' was being drawn. Scultetus' map bears the title 'Landtaffel der Marggraffthümer Meissen und Lausitz' [Map of principalities of Meissen and Lausitz] and is dedicated to Elector August (Fig. 3). At the end of 1568 Scultetus sent a few trial impressions to the Elector, for which he received a gift of 20 gulden. Initially, for military reasons, August wished to prohibit its printing,² however, on studying the map and the woodblock in detail, he realised that the scale of approximately 1:850,000 only allowed for a small number of settlements to be shown, and that it was

not sufficiently accurate for military operations. The printing of the map was therefore eventually permitted. The map is designed as a bird's-eye view and emphasises large towns such as Erfurt and Freiberg by means of iconographic tower symbols. Another detail worth mentioning is the representation of bridges over the Elbe at Dresden, Meissen, Torgau and Wittenberg. These are the oldest large bridges in Saxony.³

The systematic surveying of the territory of Saxony began with the mapping of the forests belonging to the Elector by the Leipzig professor of mathematics Johannes Humelius (1518–1562). From 1555 until his death in 1562, Humelius created nine coloured maps of the Elector's forests on the basis of his own surveys.⁴ They include a map of the wooded area known as the 'Dresdner Heide' (Dresden Heath) drawn up in 1560. Besides Humelius, the mining surveyors of the Öder family were also commissioned to produce maps of the forests. Thus, as early as 1551, the map of the administrative region of Schwarzenberg was produced by Georg Öder the Younger (c.1511–1581). His son Matthias (active 1575–1614) created the large painted wall map on parchment of the forests around Schwarzenberg which was published in 1582.

Elector August's great interest in the mapping of his territory is reflected in the surveys he conducted himself and the maps he drew. In the year of his death in 1586, he produced his cartographical masterpiece entitled 'Sechzehn Stück kleine Land-Täfflein der Churfürstl. Sächs. und angrentzenden Länder von Churfürst Augusto aufgetragen' (Sixteen Small Maps of the Electorate of Saxony and Adjacent Territories Created by Elector August). The fact that the Elector drew these maps is confirmed by an entry in the 1587 inventory of the Dresden Kunstkammer: *1 Rot in Leder vorguldt Buch oder futtral, dorinnen ezliche kleine Mappen, welche herzogk Augustus Churfurst zu Sachßen etc. seliger selbstem gemacht*⁵ (1 red leather gilt book or box containing several small maps which were made by Duke August, Elector of Saxony etc. himself). According to information noted in 1744, the box was decorated with the Saxon and Danish coats of arms (the marital coat of arms of the electoral couple) along with the year 1584.⁶ Today, the maps are assembled in a single book and thus form a small atlas.⁷ The majority of the maps have a uniform scale of 1:620,000. Only the sheet entitled 'Hessenn und Thuringenn' (Hesse and Thuringia) has a much smaller scale of 1: 3,000,000. They have a quite modern appearance because they are oriented north, with 'midnight', i.e. north, at the top. According to the linear scale, the length of a mile is 8.1 km. The fifteen equal-scale maps are titled after the city located in the middle of the sheet, for example: 'from Dresden' (Fig. 4).



Fig. 4 'Von Dresden aus' from *Sechzehn kleine Land Täfflein* (Sixteen small country maps) by Elector August, Dresden? 1586. 18.5 x 18 cm. Courtesy SLUB, Mscr.Dresd.K339.

The maps cover an area extending from Braunschweig in the north-west and Schmalkalden in the south-west, to Bautzen and Tetschen (Děčín) in the east, and St Joachimsthal (Jáchymov) in the south. The maps are like coloured landscape depictions, with blue mountains and green forests and are viewed in perspective. The network of rivers is generally represented more accurately than in the maps of Hiob Magdeburg and Scultetus. The degree of inaccuracy of the distances is about 10 per cent, and so the maps are not based on uniform surveying methods.⁸

Elector August of Saxony stands out among sixteenth-century princes by the fact that he carried out his own surveys using mechanical odometers or waywisers. These functioned in the same way as modern mileage indicators on bicycles. The waywiser was mounted on a carriage. The distance travelled is the circumference of the wheel multiplied by the number of revolutions. In simple designs, it was sufficient to have a pin fixed in a spoke of the wheel which activated a lever with a spring. The lever and the measuring instrument were connected by a ripcord. For measuring angles, the Elector used a marine compass. The Cardan suspension of the compass made it possible to take bearings in the landscape quickly from the carriage, even if it was not standing evenly. The highlight among the Elector's innovative ideas is the masterfully crafted and highly reliable waywiser manufactured by Christoph Trechsler the Elder (b. c.1546, d. between 1624 and 1627) in 1584 (Fig. 5). The instrument consists of a stand, a counting device and a mapping board. The hollow cylinder of the stand, which is decorated with the coat of arms of the Electors of Saxony, could easily be mounted on a wooden peg in a carriage belonging to the Elector. Trechsler selected the transmission ratios in such a way that the distances covered could be read off directly from the dial in the units of length called *Rute* (rod) and *Meile* (mile). Two thousand rods (*Straßenruten*) constituted one 'mile' (1 mile being equivalent to 9 kilometres). Using this mechanical waywiser, Elector August perfected the art of measuring distances while travelling. During his travels he noted the angle and distance from one place to another in surveying lists. At the end of the journey, so-called route scrolls were created on the basis of the measurements recorded. Six such scrolls have been preserved in the Saxon State and University Library (SLUB) in Dresden. The most beautiful one was made during the journey from Mühlberg on the Elbe to Regensburg on the Danube, where the Imperial Diet was held in 1575 and Rudolf



Fig. 5 Odometer by Christoph Trechsler, Dresden, 1584. Courtesy Mathematisch-Physikalischer Salon, Staatliche Kunstsammlungen Dresden.

II was elected Emperor (Fig. 6).⁹ This scroll is about 13.4 metres long and has a median scale of approximately 1:35,500. Along the route, which is depicted as a straight line, villages, rivers, mountains, forests, stone crosses and other landmarks, such as mills, were recorded. Printed engravings depicting villages and other landmarks, as well as compass dials to provide orientation between villages and were stuck on. The total distance was 54 $\frac{1}{2}$ *Meilen* and 162 *Ruten*. This journey took the Elector twelve days to complete. If the *Dresden Rute* (rod), measuring 4.54 metres, is taken as the basis, one ‘mile’ corresponds to 6.8 kilometres. Using these values, it can be calculated that the average speed was approximately 4.5 such miles per day (approx. 30 km per day) and the total distance was approximately 370 kilometres.

The first full survey of Saxony based on measurements was begun shortly after the death of Elector August in 1586, during the reign of his son Elector Christian I (1560–1591). The mine surveyors Matthias Öder and Balthasar Zimmermann (active 1588–1634) were commissioned to conduct the work. Between 1586 and 1633 they surveyed and mapped around 20,000 km² using a measuring line, quadrant and compass. Their maps are among the first precise surveying records anywhere in Germany. They were kept secret and did not appear in print.¹⁰

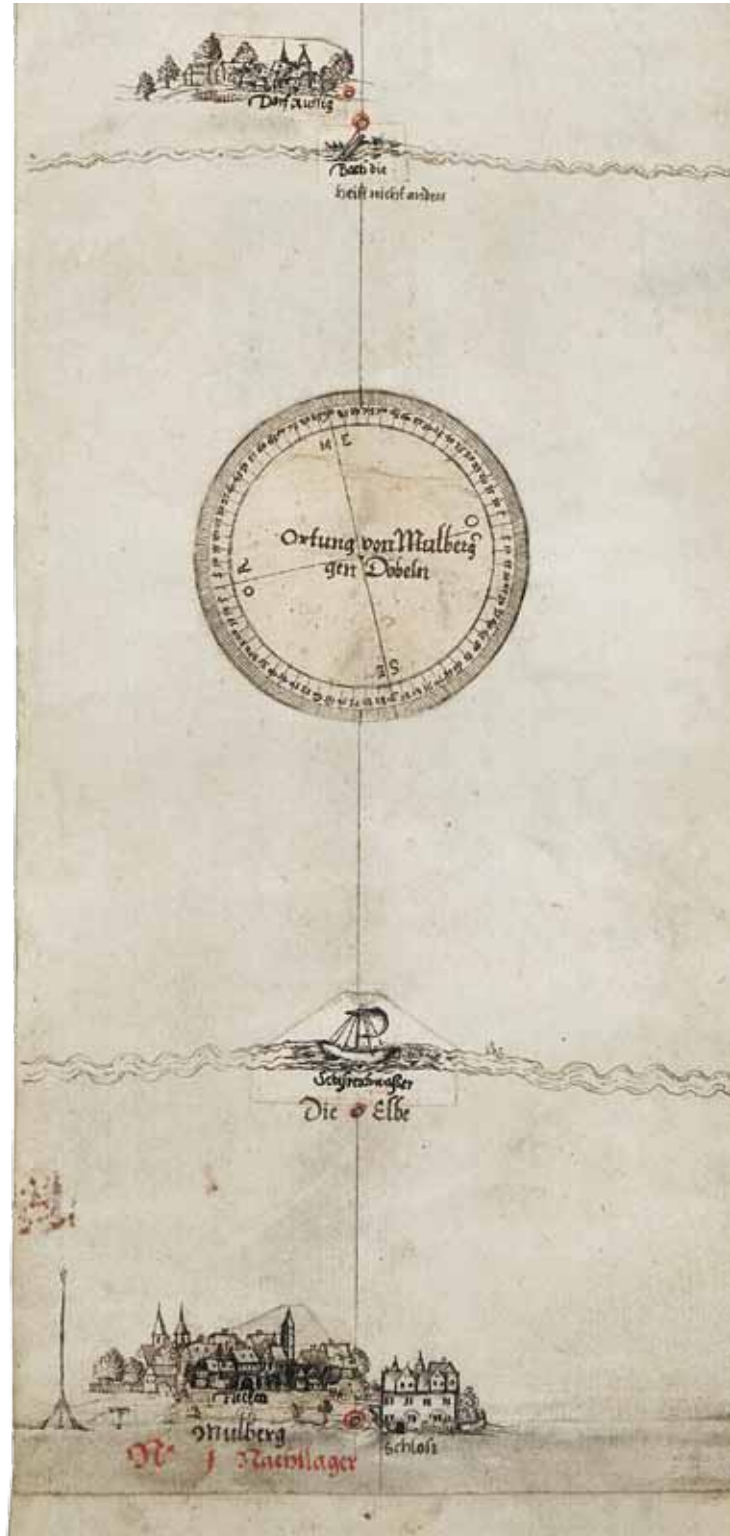


Fig. 6 Detail of route scroll from Mühlberg to Regensburg by Elector August and Friedrich Bercht, 1575. Length: 13.36 m. Courtesy Sächsische Landes – Staats – und Universitätsbibliothek Dresden.



Fig. 7 'Neue Chur Saechsische Post Charte' by Adam Friedrich Zürner, 1718. 90 x 120 cm. Courtesy Sächsisches Staatsarchiv, Hauptstaatsarchiv Dresden.



During the Thirty Years' War, the mapping of Saxony came to a standstill. After the gradual regeneration of the population, Saxony enjoyed renewed economic growth, particularly during the reign of Elector Friedrich August I (1670–1733), also known as August the Strong. This is reflected, among other things, in the development of the electoral capital Dresden with its architecture and cultural treasures, which still survive today. In 1713 August commissioned the theologian Adam Friedrich Zürner (1679–1742) to create a new map of Saxony. The commission would result in the *Atlas Augustaeus Saxonicus* (Fig. 8).

Zürner's activities as a cartographer began in 1711 when he drew up a map of the region around Großenhain under the title: 'Accurate Geographische Delineation der in dem Meißenischen Creise [...] liegenden Dioeces oder Superintendentur Grossen Hayn'. After he had presented the finished manuscript map to August the Strong, he requested permission to publish it. Approval was granted on 18 August 1711. The Großenhain map was published in the same year by the renowned publishing house of Peter Schenk the Elder (c.1661–1711) in Amsterdam. Zürner's map attracted considerable attention, even beyond Saxony. Encouraged by this accomplishment, he also succeeded in publishing his map of the Dresden region ('Amt Dresden'). This project was published in 1712 by Peter Schenk the Younger (1693–1775). A map that is particularly worth mentioning is the 'Neue Chur Saechsische Post Charte' with a scale of 1:335,000 which was drawn up in 1715. It was one of the first large maps of post roads in Saxony. The first editions were published by Moritz Bodenehr (1665–1749), beginning in 1718 (Fig. 7).¹¹ The original hand-drawn map, which was used as the model for the engraving, has been preserved in the Main State Archives in Dresden.

When Zürner began mapping Saxony in 1713, he was aware that he would need assistance for this major project. He employed four talented men and instructed them in his surveying methods, paying them out of his own pocket. His most able and closest associate was Johann Paul Trenckmann (1676–1747), who was three years his senior. Trenckmann primarily mapped the districts in the regions around Leipzig, in Thuringia, in the Kurkreis and in the Ore Mountains, as well as in the Mansfeld territory. After mapping Saxony, Trenckmann entered the service of the Wettin rulers of Altenburg and mapped their principality. Zürner's other assistants, known as *Kondukteure*, were employed on a temporary basis. The first was Johann Ludwig

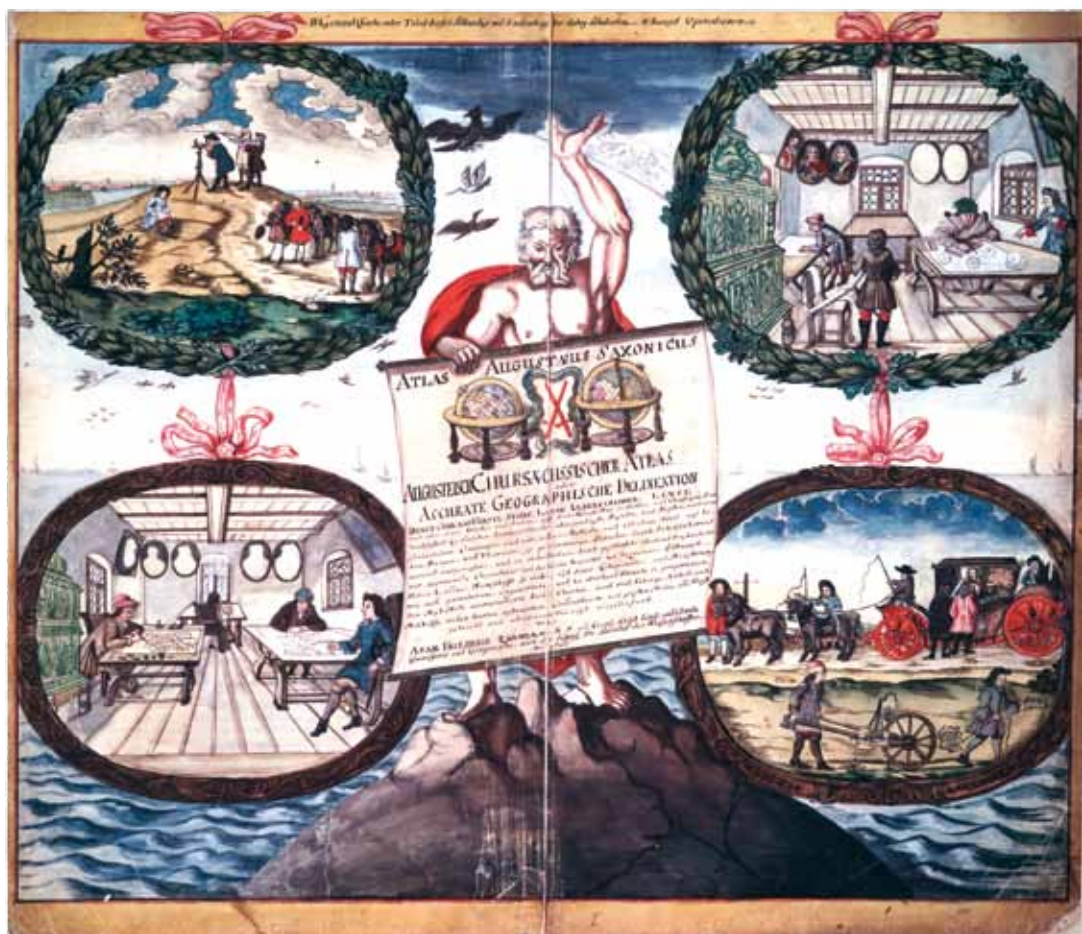


Fig. 8 Title page of the *Atlas Augustaens Saxonicus* by Adam Friedrich Zürner, 1713–1742. Courtesy Sächsisches Staatsarchiv, Hauptstaatsarchiv Dresden.

Valerian Fischer who is said to have carried out trigonometrical observations of more than three hundred and thirty hills. He produced district maps of the areas around Zwickau and Chemnitz. Similar work was done by Paul Christian Winkelmann who worked as a geometrician in Skassa in 1718 and Christoph Josua von Suttinger, son of the well-known artillery captain and engineer Daniel Suttinger who had mapped the city of Vienna. In addition, Zürner mentions between six and fourteen copyists, painters, scribes and other attendants.

Zürner's mapping methods

1 Mensuration: surveying a territory

For drawing up his district maps, Zürner used a technique that was customary for the time and might be described as small-scale triangulation. Usually on an elevated point in the landscape with a good

all-round view, he or one of his assistants set up a graphometer with a circular dial, which later became known as a *Zollmannsche Scheibe* (Zollmann's Disc).

According to Zollmann's own description, this angle-measuring instrument consists of a circular plate which is made of well-dried wood, on to which a paper disc is affixed with gum (similar to that later used on postage stamps), over which a brass sighting ruler could then rotate.

According to Zürner's reports, measurements were taken at some 1,000 points, probably producing around 2,000 paper discs, and records were made in handwritten registers of a large number of hills throughout Saxony. He reported that at each point, up to 300 locations were sighted. This is contradicted, however, by the experiences of the surveyor Zollmann, who was able to record up to 150 sightings on his disc with a diameter of approximately 20 cm.

2 Elaboration: evaluation of the paper discs and handwritten register

The medallion at the top right of the title page depicts the second operation (Fig. 8). The consistent fitting of the directional discs is shown being performed in a domestic setting. This method was also called graphic triangulation.

3 and 4 Amendment, revision and correction

The last two operations were connected with the correction of the official maps and the derivation of district maps from the official maps.

All the maps were delivered in duplicate between 1722 and 1725. The first was coloured and given to the Elector; the second was monochrome and was submitted to the Chamber. Two copies of the hand-drawn *Atlas Augustaens Saxonicus* were created, each consisting of 100 sheets, of which 37 were district maps, with scales ranging from 1:120,000 to 1:130,000. In addition to the two specimens of the *Atlas Augustaens Saxonicus*, a large hand-drawn map of the Electorate of Saxony has also been preserved in the Main State Archives in Dresden. It consists of four parts with a scale of 1:125,000 and measures 2.2 x 3.2 m. The pictorial

cartouches show August the Strong and Zürner himself with a graphometer in his hand (Fig. 9).

After Zürner's death his famous *Atlas Saxonicus novus, including not only the lands governed by the Elector of Saxony according to its districts ..., but also those of the principalities and territories of the princely house of Saxony* was published in 1752 by Peter Schenk the Younger in Amsterdam. The map designs were probably delivered to Schenk by Trenckmann.¹² Apart from the maps of Großenhain and Dresden, the atlas produced by Schenk is not a direct copy of Zürner's hand-drawn *Atlas Augustaens Saxonicus*. Several editions of the atlas were published up to 1810.

For his mapping of Saxony, Zürner was initially paid very little, considering that he had to pay his assistants himself. In 1715 it was agreed that he should receive six groschen for each location recorded. For the maps of the districts of Hohnstein, Lohmen and Pirna, which included 802 locations, he charged 200 thalers and twelve groschen. For the district of Chemnitz, including 112 locations, he could only demand 28 thalers. Later, the amount was increased to eleven groschen per location.

The complaints about Zürner's poor financial

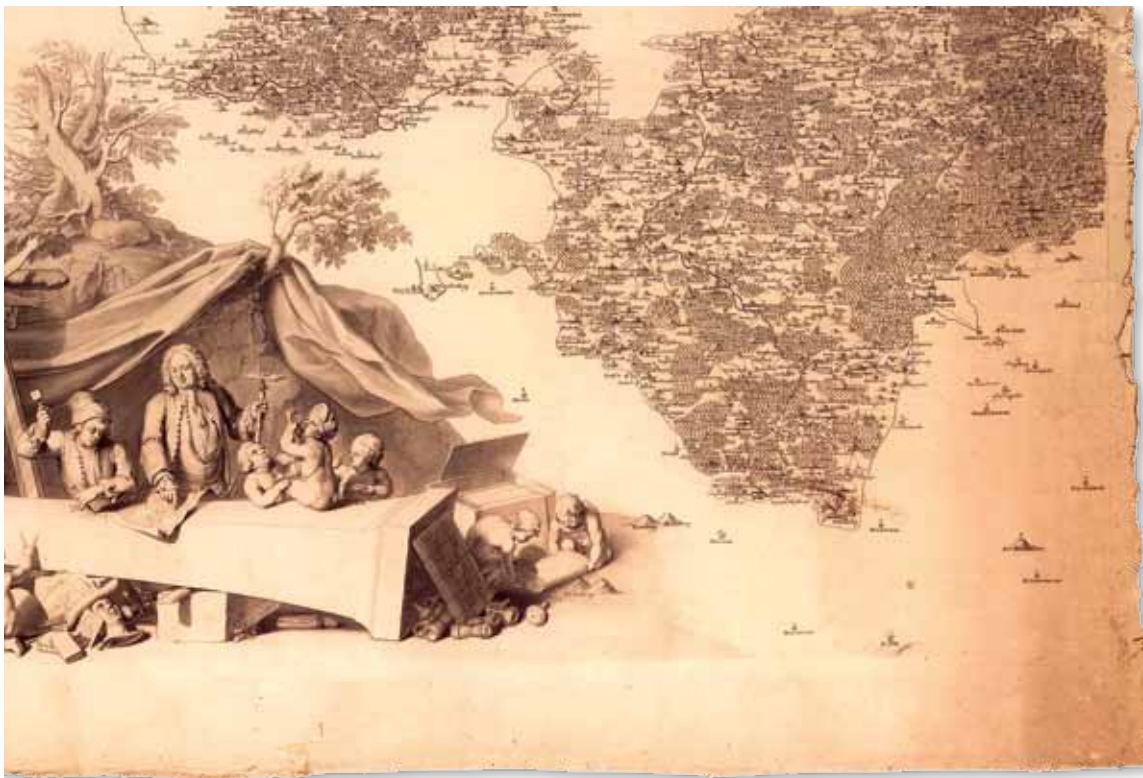


Fig. 9 Detail of the large map of the Electorate of Saxony by Adam Friedrich Zürner, c.1730. 2.2 x 3.2m. Courtesy Sächsisches Staatsarchiv, Hauptstaatsarchiv Dresden.

situation probably reached the ears of August the Strong, for in 1721 Zürner was appointed Commissar for Land and Borders with an annual salary of 600 thalers. This position also involved the surveying of the postal roads and the setting up of the Saxon distance columns. According to his own reckoning, Zürner covered 8,000 miles [72,400 km] during the surveying of the postal and long distance roads. For the measuring of distances, Zürner used what he called a 'Geometric Carriage' (Fig. 10).



Fig. 10 'Geometric Carriage' from the *Atlas Augustaeus Saxonicus* by Adam Friedrich Zürner, 1713–1742. Courtesy Sächsisches Staatsarchiv, Hauptstaatsarchiv Dresden.

The mechanical waywiser was built into the horse-drawn carriage and connected to the wheel by a chain. On impassable stretches surveying barrows were used. They could be taken apart and transported in the carriage. The waywiser was mounted on the cart in a similar way. Zürner described the measuring cart as the so-called 'fifth wheel on the wagon'. The purpose of surveying the roads was to set up postal milestones. These were made of sandstone and were positioned along the postal roads at intervals of 125 rods, or a quarter of a *Grenzmeile* (border mile). In addition, there were quarter-mile and half-mile stones, as well as distance columns. The distance columns show the distances between towns in hours. One mile corresponded to 9 km, a distance which could be covered in two hours. Thus, the journey times given can also be interpreted as distances.¹³

The colourful distance columns, found in many market squares in towns throughout Saxony, are part of its cultural heritage and are now protected as historic

monuments. They are also attractive reminders of the role of surveying in the history of mapping Saxony between the sixteenth and eighteenth centuries.

Notes

- 1 Wolfram Dolz and Yvonne Fritz, *Genau messen = Herrschaft verorten. Das Reißgemach von Kurfürst August, ein Zentrum der Geodäsie und Kartographie*. Dresden, Berlin, München: Deutscher Kunstverlag, 2010, pp. 20–24.
- 2 Fritz Bönisch, 'Kleinmaßstäbige Karten des sächsisch-thüringischen Raumes' in *Kursächsische Kartographie bis zum Dreißigjährigen Krieg*. Berlin: Deutscher Verlag der Wissenschaften, 1990, p. 218.
- 3 Staatliche Kunstsammlungen Dresden, Kupferstich-Kabinett, Inv.-Nr. A 129218.
- 4 Peter Wiegand, 'Johannes Humelius und der erste Auftrag einer systematischen Landesaufnahme von Sachsen' in Dolz & Fritz, *Genau messen = Herrschaft verorten. Das Reißgemach von Kurfürst August, ein Zentrum der Geodäsie und Kartographie*. Dresden, Berlin, München: Deutscher Verlag der Wissenschaften, 2010, p. 27.
- 5 Staatliche Kunstsammlungen Dresden, Inventare der Kunstkammer, Inventar Nr. 1, 1587, fol. 73v/73v.
- 6 Johann Christian Götz, *Die Merkwürdigkeiten der Königlichen Bibliothek zu Dresden*, Dresden: Walther, 1743, p. 129.
- 7 Sächsische Landesbibliothek- Staats- Universitätsbibliothek, SLUB, Msc. Dresd. K 339.
- 8 Bönisch, 'Kleinmaßstäbige Karten des sächsisch-thüringischen Raumes', p. 229.
- 9 Reiseroutenrolle, Örtung der Reise von Mühlberg bis Regensburg. Churfürstentag, 1575. Sächsische Landesbibliothek – Staats- und Universitätsbibliothek Dresden, Msc. Dresd. L.451.
- 10 Fritz Bönisch, *Die erste kursächsische Landesaufnahme ausgeführt von Matthias Öder und Balthasar Zimmermann von 1586 bis in die Anfangszeit des Dreißigjährigen Krieges*. Atlas zur Geschichte und Landeskunde von Sachsen. Beiheft zu den Karten H 4.1 und H 4.2, Leipzig und Dresden: Verl. der Sächsischen Akademie der Wissenschaften, 2002.
- 11 Marianne und Werner Stams, *Amt, Burg und Stadt Stolpen in alten Karten und Plänen. Abriss zur Geschichte der sächsischen Kartographie von den Anfängen bis zur Gegenwart*. Stolpen 1998, pp. 30–34.
- 12 Peter Wiegand, 'Bella cartographica' in *Neues Archiv für sächsische Geschichte* 78. Band, Neustadt an der Aisch 2007, p. 136.
- 13 Wolfram Dolz, 'Von der richtigsten Methode accurate Spezial=Charten zuzufertigen Adam Friedrich Zurners (1679–1742) Aufnahme- und Kartiermethoden zum Atlas Augustaeus Saxonicus' in 11. *Kartographiehistorisches Colloquium Nürnberg 2002: Vorträge und Berichte* (in publication).

Wolfram Dolz is the Senior Curator of the collection of globes and surveying instruments at the Mathematisch-Physikalischer Salon (the Royal Cabinet of Mathematical and Physical Instruments), at the Staatliche Kunstsammlungen Dresden (State Art Gallery). An engineering graduate from the Technical University of Dresden, where he also studied cartography, Dolz has published widely in the fields of the history of cartography and geodesy, especially on the collection of the Mathematisch-Physikalischer Salon. He is a member of several commissions of the Deutsche Gesellschaft für Kartographie and since 2010 is the Vice-President of the International Coronelli Society for the Study of Globes.



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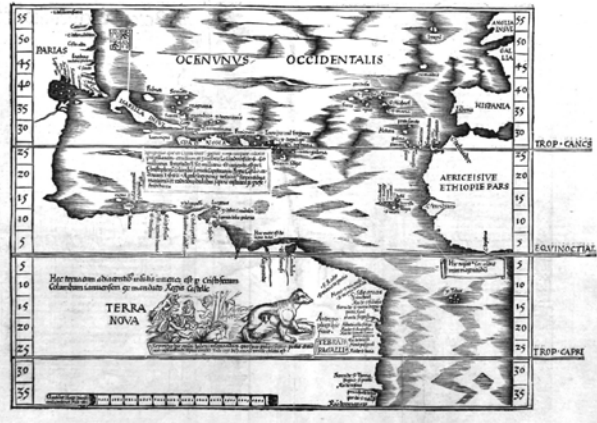


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Oceani occidentalis sive terre nove tabula, woodcut map by L. Fries from the Ptolemaeus edition by J. Grüninger, Strasbourg, 1525

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THE HARZ MOUNTAINS

Their depiction on maps, 1500–1900

Hans-Martin Arnoldt

The exploitation of the rich natural resources beneath the Harz Mountains, and covering them, gave impetus to much of the early mapping of this area which, today, straddles Lower Saxony, Saxony-Anhalt and Thuringia. Also the location of the Imperial City of Goslar, a medieval seat of power on the western slopes, invited early representations of this mountain range on maps. The thirteenth-century Ebstorf map, the oldest document of the art of cartography in Northern Germany, records the city of Goslar by name and the Harz Mountains as an unlabeled brown mountainous strip of land.¹

The Harz Mountains: mapping its resources

Although already in use in the late Middle Ages, so-called *Augenscheinkarten* or *Streitkarten* (maps that were drawn from inspections, rather than from surveys) flourished in the sixteenth century.² These hand-drawn maps (sketches or coloured illustrated maps) can often be found as a supplement/enclosure/attachment to court papers. For example, in the records of the Imperial Chamber Court,³ one such *Augenscheinkarte* is regarded as the oldest surviving cartographic evidence of the northwestern Harz Mountains and of Lower Saxony. It is a ‘trial map’ dating from the first half of the sixteenth century. It depicts the forests around Goslar and was made to settle the dispute between the Imperial City of Goslar and the Dukes of Braunschweig-Wolfenbüttel over forest and mining rights. Thus, the utilisation of resources with regard to forestry and mining can at this point be seen as the impulse for creating a map.⁴

Another example of a very early topographic representation of a mining area in the Harz Mountains is the well-known *Streitkarte* from 1581 showing the mines of Clausthal and Zellerfeld.⁵ In the large hand-drawn ‘Chorographia der Hildesheim Stiftsfehde’ from 1591 (map of the conflict between the Bishop of Hildesheim and the Dukes of Braunschweig-Lüneburg-Wolfenbüttel and other nobles), also created for a trial at the Imperial Chamber Court, the Guelphic mathematician and cartographer Johannes Krabbe (1553–1616) depicted an area of mid-range mountains at the margin of the picture map which he identified as ‘Hartz’ and singles out the Brocken as *Blocks Berg*.⁶

Mine plans

The mining of copper, silver and lead has had a long and productive history in the Harz district. However, plague epidemics during the Middle Ages depopulated the region and almost brought the industry to a standstill. Also the technology available had reached its limits with maximum shaft depths of up to about 60 metres. The Dukes of Brunswick-Wolfenbüttel during the first half of the sixteenth century were largely responsible for reinvigorating the industry in the Upper Harz Mountains. Mine managers adopted the advanced technologies developed by the Saxons in the mines of the Erzgebirge (Ore Mountain Range). No mine plans, drawn to scale, of the Harz Mountains existed until the beginning of the sixteenth century⁷ and few representations of mines before the Thirty Years’ War have survived. Some of the oldest are of the Upper and Lower Harz Mountain mining towns which were drafted by Zacharias Koch, clerk of the local mining authority and tax collector, and engraved by Daniel Lindeiner in 1606.⁸ They show the mines of Wildemann, Zellerfeld and Clausthal, Sankt Andreasberg and the Rammelsberg near Goslar.

Saxon Balthasar Rößler’s (1605–1673) invention of the miner’s compass in 1633 provided the basis for the modern drawing of mine plans on several projection planes.⁹ Through appropriate horizontal, vertical and profile plans it became possible to depict mines in three dimensions. In 1661 Adam Illing, a pupil of Rößler and son of mine manager Caspar Illing of Goslar, drew an ornate vertical plan of the mines in the district of Clausthal (‘Seigerriss des Burgstätter Gangzuges’) probably for representational purposes.¹⁰ At the same time, Daniel Flach (1620–1694) who had also been trained by Rößler in Saxony designed the monumental mine plan ‘Zellerfelder Hauptgang’ (mother lode of Zellerfeld). It measures 950 cm in width and 100 cm in height.¹¹ This plan, with its picturesque, almost naturalistic representation, also shows, next to the mine, the drainage adits with their (reversible) waterwheels and the overground facilities such as pithead buildings, smithies, stamp mills and flat rod systems. Flach had been a mine surveyor in Zellerfeld since 1666 and became Deputy Senior Mine Manager

in 1669 and in 1672 Senior Mine Manager of the *Kommunionharz* (a district extending over the Upper Harz area with shared administration by both Guelphic territories).¹² On leaving the mines in 1686, Flach worked as a tax collector in Clausthal until his death in 1694. It is thought that he initiated the surveying of the *Kommunionforsten* (forest)¹³ in the Harz Mountains, particularly since it is known that his most important pupil, and successor as Community Senior Mine Manager, Jochim Christoph Buchholtz, participated in these works.¹⁴ We will hear about Buchholtz again later in connection with the surveying of the forests. Nonetheless, what should be mentioned are his geodetic works on the Rammelsberg (a mountain on the northern edge of the Harz range rich in silver, copper and lead) and especially, a wooden model of a mine, produced in 1683, which, unfortunately, has not survived. However, a small thirteen-page atlas made by Buchholtz, measuring 23.5 x 35 cm and containing vertical sections of the ‘Zellerfelder Hauptzug’ and the Bockswiese mine district does survive.¹⁵ By 1675 mine surveyor Christian August Reinerding had produced a similar atlas of plans of the drainage adits between Wildemann and Zellerfeld.¹⁶ Active staff transfers between other European mining regions (Erzgebirge, Denmark, Norway, Central Sweden) brought important technical innovations to the Harz Mountains such as Swedish folding mine plans.¹⁷ These plans consisted of fold-out strips of paper, affixed to the plans, which made it possible to depict objects that lay beneath each other in the projection plane or crosscuts.

Selected maps of outstanding cultural value

In Martin Waldseemüller’s map of Germany from Sebastian Münster’s *Cosmography*, published in 1540, the ‘Hartz Forest’ appears as one large coherent area of woodland.¹⁸ In the somewhat later maps of Germany by Mercator their entry reads as *Auff dem Hartzwald*.¹⁹ Also the 1620 map of the Duchy of Braunschweig-Lüneburg by Caspar Dauthendey (c.1588–1640), who was the direct successor of Krabbe as mathematician and geometrician to the Guelphic dukes, represents the area of mid-range mountains as *Auf dem Hartz*. Dauthendey’s map was later included in the Blaeu family atlases and their followers (Janssonius, de Witt, Schenk, Seutter, Homann etc.).²⁰

One of the prominent figures of mining in the Upper Harz Mountains was mine surveyor and later head machine manager Bernhard Ripking (1682–

1719). He was particularly interested in advancing mining techniques and undertook a journey to central Sweden in 1708–1709 to inspect their mines. Around 1715 Ripking drafted the first printed map of the Upper Harz Mountains under the title ‘*Sylvae Hercinae Tabula*’ (Fig. 1).²¹ Ripking’s map shows the Harz Mountains extending from Langelsheim in the north to Lauterberg in the south, and from the Brocken in the east to Gittelde in the west. It also marks the location of the mines. In the margins of the map, left and right, is listed in German and French all the mines in the region with a legend of symbols identifying the metals extracted. Above the map scale is an allegoric depiction of the wooded Harz Mountains decorated with the coat of arms of the seven Bergstädte (mining towns of the Harz Mountains). A vignette in the lower-left corner illustrates a cross-section of a mine with shafts and adits. Forest officer Christian Böse’s map of the Harz Mountains c.1730 is based on Ripking’s map and was also published by Homann Heirs in Nuremberg in 1737 under the title ‘*Delineatio aureae Sterilitatis Herciniensis i[d] e[st] Hercinae Metalliferae accurate Chorographica*’.²² His map is more illustrative and he has added the coat of arms of the Guelphic sovereigns.

Ripking’s map and its derivatives, was apparently supposed, first and foremost, to serve as a base map for the extensive water management planning that was required for mining, as well as for a survey of the forests, another vital resource for profitable mining. Water management was essential to mining, it provided the energy to drive the machinery. Ripking’s map inspired a large number of speciality maps of the Harz Mountains. His influence continued until the end of the nineteenth century.²³ A small selection of such maps is listed in Appendix 1.

L.S. Bestehorn’s curious copper engraving of the highest peak of the Harz Mountains ‘The Brocken’ from 1732 (and revised 1749/1751) has been included in the category of ‘outstanding cultural value’ as it is the first known bird’s-eye view map of the Harz Mountains (see front cover). It is entitled ‘*Perspectivische Vorstellung des berühmten Blocken oder Bloks-Bergs mit der-jenigen Gegend, so weit solche von dem, der auf der Spitze des Berges stehet, gesehen werden kan*’ (A view of the famous Blocken or Bloks Mountains with views of the surrounding areas as far as can be seen from the summit) and was also published by Homann Heirs in Nuremberg.²⁴ The prospect is seen from the north and includes the Rivers Holtemme, Ilse, Ecker, Radau and Oker, as well as the surrounding

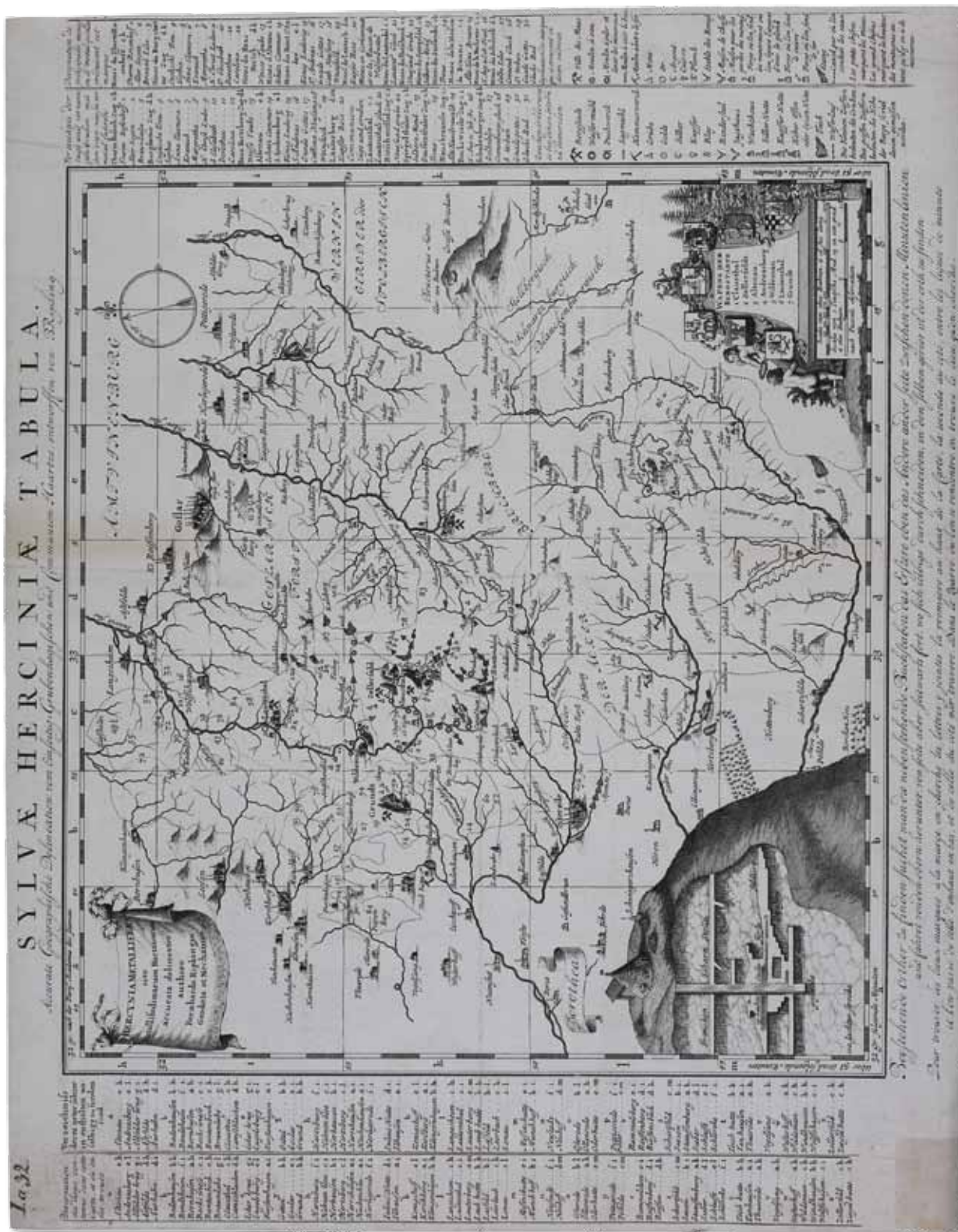


Fig. 1 'Sylvæ Herciniæ Tabula. Accurate Geographische Delineation vom Einseitig-Grubenhagischen und Communion Haartzte', by B[ernhard] Ripking', 1715/16. Scale: c.1:120.000, 39 x 4.5 cm. NLA HA Kartenabteilung Nr. 250 K/76 pm.

und den Brocken besuchen' (map suited to travellers wanting to visit the Harz and the Brocken) by Franz Ludwig Güssefeld, published in 1801 by the Geografisches Institut, Weimar. The 1817 map 'Charte vom Harz', by Dr I.H. Fritsch, was published as a supplement to the second edition of Friedrich Gottschalck's *Taschenbuch für Reisende in den Harz* (Pocket Book for Travellers in the Harz) by the same publisher (Fig. 3). Hiking maps were produced for the Harzklub (an organisation, founded in 1886, dedicated to maintaining the traditions of the Harz mountains and looking after its walking trails). The '[Wander]-Karte des Harzes' (walking map of the Harz) at scale of 1:50,000, based on the official Prussian ordnance survey maps was released in nine sheets by the publishing house of H.C. Huch in Quedlinburg in 1906.³⁰

Border maps

Worth mentioning are the special maps of the new Harz county border, which were made in the years 1798 and 1799 after the Kommunion forests were divided, as well as the corresponding general

maps on a scale of 1:20,000 made by mine surveyor J.C.H. Laenge of Clausthal from 1800 onwards.³¹ They not only convey the marking of the Harz borders by boundary stones or posts, but also contours, grassland, field and forest names and mines, buildings and ruins.

Ordnance survey maps

With the Age of Enlightenment an era of exact surveying began during which topographic land surveys on the basis of trigonometry were finally performed.³² The Harz region, which was included into the ordnance survey of the Guelphic territories in the eighteenth century, presented an organisational and technical challenge due to the nature of the rough mountainous terrain.

The Kurhannoversche Landesaufnahme (Survey of the Electorate of Hanover) took place between 1764 and 1786 under the direction of Georg Josua Du Plat and Ludwig Hogrewe. The sheets containing the Harz Mountains were drawn between 1784 and 1786.³³ By comparison the Harz district of the Principality of Braunschweig-Wolfenbüttel with the Kommunionharz

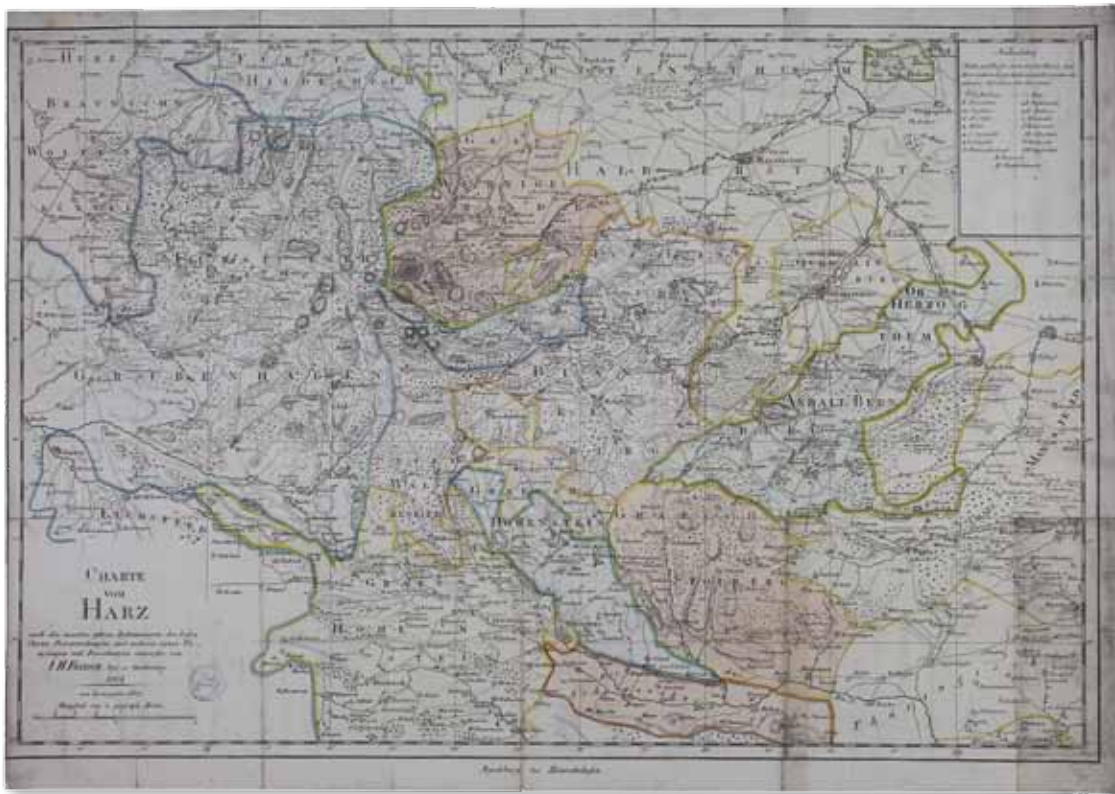


Fig. 3 'Charte vom Harz nach den neuesten astron[omischen] Bestimmungen, den besten Charten, Privatzeichnungen und mehreren eignen Vermessungen und Berechnungen', I. H. Fritsch, 1804, new edition 1817. Scale: 1:170,000, 41.5 x 59 cm. NLA HA Kartenabteilung Nr. 20/16 pm.



Fig. 4 Sheet 62, 'Brocken' from *Topographischer Atlas des Königreichs Hannover und Herzogtums Braunschweig nach einem Maßstab von 1:100,000 der wahren Länge auf den Grund der von dem Geheimen Hofrat Gauß geleiteten Triangulierung bearbeitet von A[ugust] Papen* 1832–1848. Courtesy NLA HA Kartenabteilung Mappe 112.

had already been mapped in 1767 with the Principality of Blankenburg and the Diocese of Walkenried in 1768 by engineering officer Johann Heinrich Daniel Gerlach (1735–1798) of Brunswick ('Gerlachsche Karte des Fürstentums Braunschweig-Wolfenbüttel').³⁴

The mapping of the Harz region benefitted immensely from the work of Professor Carl Friedrich Gauß (1777–1855), a mathematician, astronomer and geometer at the University of Göttingen. He began in 1821 to instal a framework of triangulation points for Northern Germany and in 1828 was commissioned by King George IV of the United Kingdom and Hanover to triangulate the entire Kingdom of Hanover to establish a geodetic basis for the existing ordnance surveys. His work also included his observations and bearing measurements from the top of the Brocken.

When Captain August Papen (1799–1858) of Hanover created his *Atlas for the Kingdom of Hanover and the Duchy of Brunswick* 1832 he could base his works on

Gauß's Triangulation (Fig. 4). The topographic maps for the Harz region on a scale of 1:100,000, which were included in Gauß's work, remained of great importance for those parts of the administration that used maps, as well as for anybody interested in them.³⁵

Appendix 1

'Generalcharte der gesamten Communion-Oberharzischen Bergwerke und aller dahin gehörigen Züge, Gruben, Hütten und Puchwerke, nebst Teichen, Graben und Wasserfällen' (a general map of the entire Upper Harz Mines and all the accompanying mines, huts and stamp mills, along with ponds, trenches and waterfalls) by J. H. Eggers, 1730.

'Topographische Carte des Harz Gebirges' (topographical map of the Harz Mountains), Georg Sigismund Otto Lasius, 1789.

‘Charte vom Harz-Gebirge mit geognostischer Bezeichnung’. (Map of the Harz Mountains with geonostic surveys) After Lasius, Villefosse, Julius, Berghaus und Hoffmann. Mit eigenen Berichtigungen gezeichnet (with corrections) by E. Schlick, Darmstadt 1832. It appears that it was an accompaniment to Christian Zimmermann’s 1834 publication *Das Harzgebirge*, a handbook designed for travellers and anyone wishing to know the mountains in greater depth.

‘Charte von dem Harz Gebirge und einem Theile der umliegenden Gegenden (Nach den besten vorhandenen Hülfsmitteln und einigen Messungen und Reise-Bemerkungen’ (Map of the Harz Mountains and surrounding area). First published in 1817 by Friedrich Julius, fully realised in 1818–1821 by Heinrich Berghaus. Copperplate engraving, published by Heinrich Brose. C.W. Ramdohr’s Hof-Kunsthändler Braunschweig, 1844.

‘Karte vom Harzgebirge nach den Originalkarten des Königlichen Berg- und Forstamtes zu Clausthal’ (Map of the Harz Mountains after the original map of the Royal mountain and forest district of Clausthal). Designed by Carl Prediger after Papen and Berghaus, Stuttgart 1859.

‘Karte vom Harz nach den besten Quellen’ (map of the Harz from the best sources). Designed by Wilhelm Castendyck. Lithographisches Institut von August Wehr, Braunschweig. [c.1865].

‘Karte des Harzgebirges. Im Auftrage des Königlich Preussischen Berg- und Forstamtes zu Clausthal’ (Map of the Harz Mountains by the authority of the Royal Prussian mountain and forest districts of Clausthal). Designed under the direction of E. Auhagen, Stuttgart 1867.

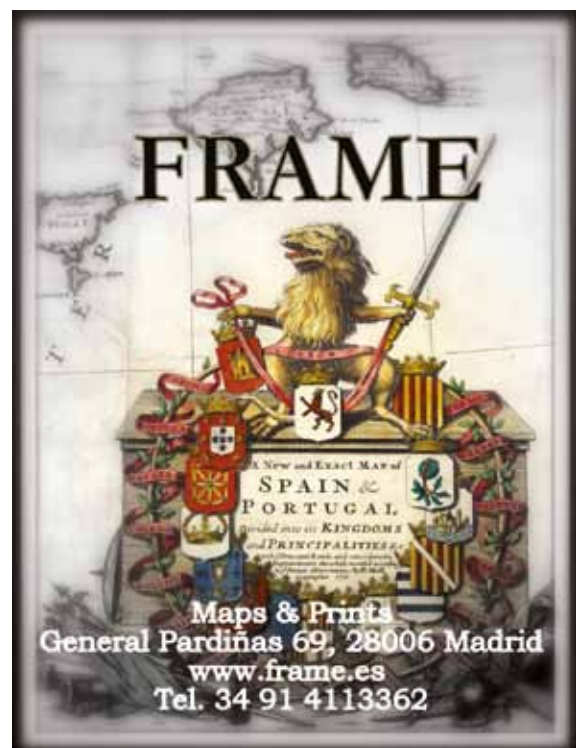
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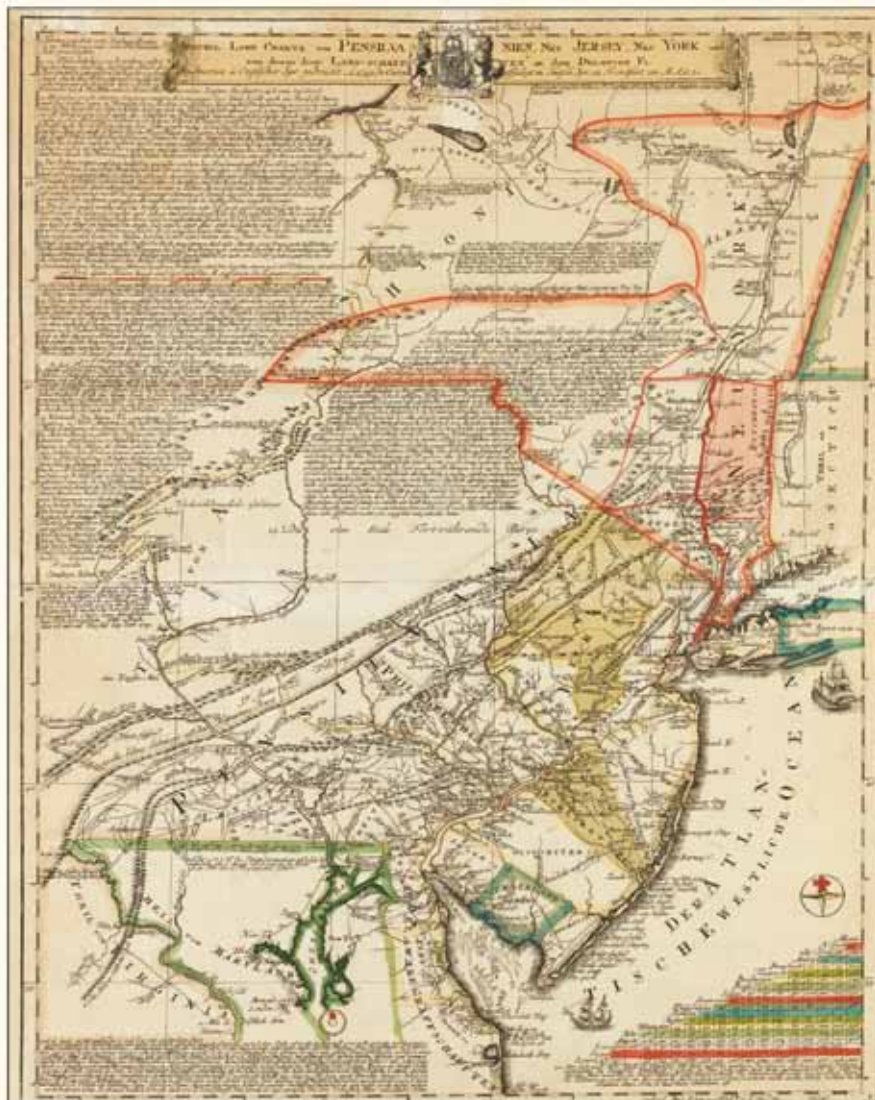
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- 35 Dieter Grothenn, *Der Topographische Atlas des Königreichs Hannover und des Herzogtums Braunschweig von August Papen*, Hannover 1997; Pitz, *Landeskulturtechnik*, p. 373.

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Lewis Evans, *Speciel Land Charte von Pensilvanien, Neu Jersey, New York*; with original hand-coloring, Frankfurt, 1750. Sold June 2017 for \$37,500.

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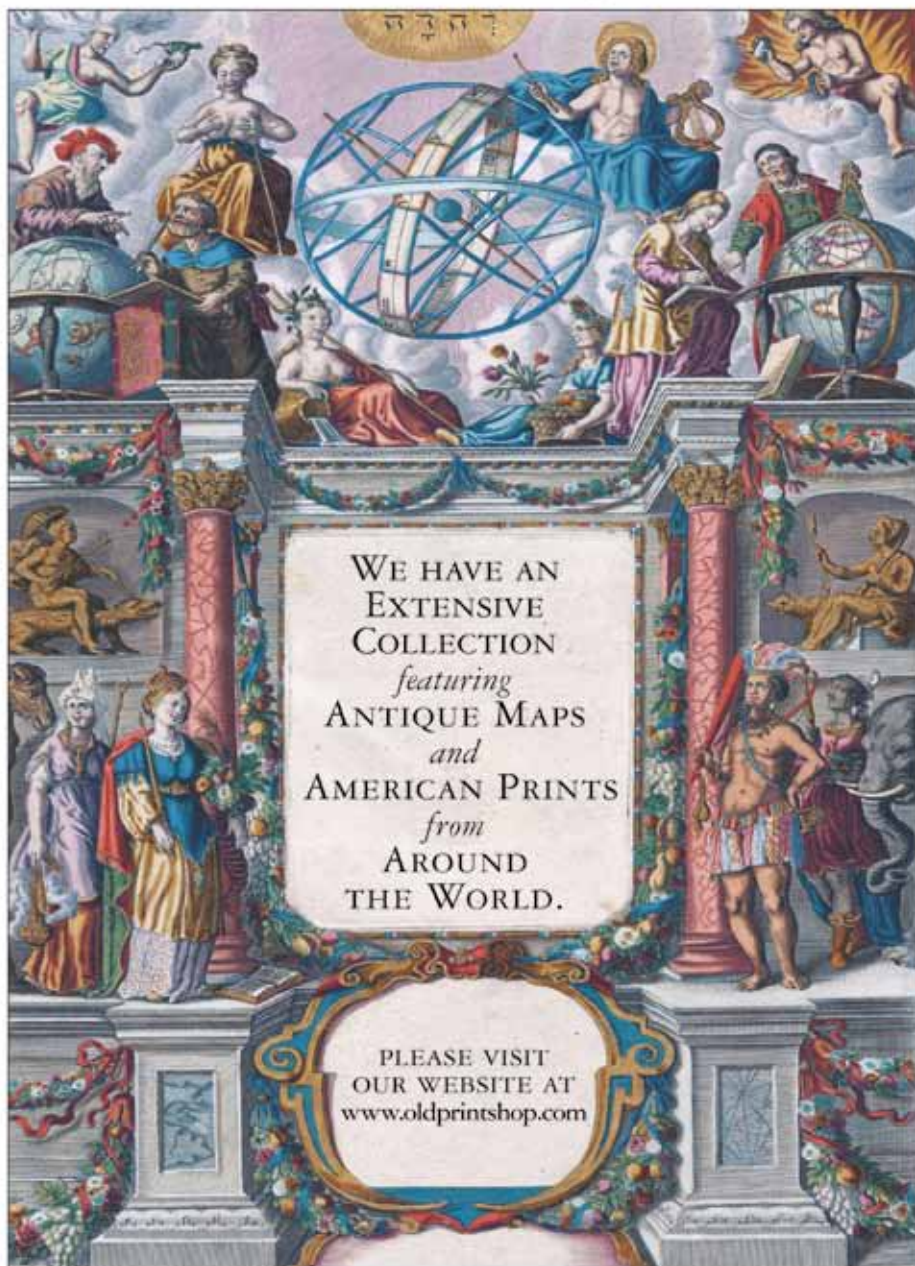
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THE ROLLED WORLD

German school wall maps and their publishers in the nineteenth and twentieth centuries

Norman Henniges

Wall maps have been in evidence since the Early Modern period, when they were used as exclusive items in the education of the nobility and the upper middle class, or in trading companies.¹ With the development of colour lithography and the far-reaching pedagogical reforms of the first half of the nineteenth century, wall maps became an inexpensive mass medium suitable for large sections of the population. Based on didactic and innovative design principles new types of wall maps were developed for schools. They became effective teaching tools mainly by means of cartographic generalisation, the use of standardised symbols and bright regional area colouring.² The key features of these maps were reduction of content and simplification, together with a striking visual impression of the terrain. The reason for these design criteria was, that unlike the school atlas which had been developed for individual usage, the school wall map had to service group lessons presented from the front of a class. Therefore it was necessary to achieve a 'distance view-effect'.³ It was intended that the map and its 'characteristic' details could be seen even from the back row of the classroom. The colourful portrayal of the terrain made them eye-catching. In particular, mountains, rivers, and cities were generalised for the purpose of a better visibility.

Schools normally had a standard collection of wall maps consisting of a world map, a map of Europe, a map of Germany or Central Europe, a map of the home region and a map of Palestine respectively the Holy Land.⁴ These school wall maps, which were produced according to the concepts of *Länderkunde*⁵ (regional geography), became successful long-time sellers, with only few improvements in new editions over many decades. Most of these so-called 'wall map atlases' or wall map series were structured and scaled by *Erdteile* (continents), *Länder* (regions) and *Landschaften* (landscapes).

Before the lesson began, the bulky map was taken out of its case and placed directly in front of the class.⁶ With the hanging up and rolling out of the map,

new regions unfolded in front of the children's eyes. The large maps dominated classrooms because of their physical dimensions; sometimes they measured more than 3 square meters. For reasons of cost, school wall maps, in particular during the nineteenth century and especially in many smaller rural schools, were sometimes their only cartographic medium. As the visual centrepiece of the classroom, these maps presented children and young people with their first glance of their own country, other world regions or, the Earth as a whole. In other words, they shaped the 'world view' of several generations of pupils.

The publishing houses

At the end of the nineteenth century there was a wide variety of publishing houses producing school wall maps.⁷ The competition in school cartography was 'particularly hard'.⁸ Among the leading German publishing houses around 1900 there were several well-known firms competing for business.⁹ Most of them specialised in cartography. Renowned houses of high reputation included Carl Flemming¹⁰ (Glogau, est. 1790), Georg Westermann¹¹ (Brunswick, est. 1838), H. Wagner & E. Debes¹² (Leipzig, est. 1835, respectively 1872), Dietrich Reimer (E. Vohsen)¹³ (Berlin, est. 1845), Georg Lang¹⁴ (Leipzig, est. 1864) which became Hilmar Klasing & Co (Leipzig, est. 1901), List & von Bressensdorf¹⁵ (Leipzig, est. 1907); in Austria, Eduard Hölzel¹⁶ (Vienna, est. 1861) and Kartographische Anstalt Freytag & Berndt¹⁷ (Vienna, est. 1879); and in Switzerland, Kümmerly & Frey¹⁸ (Bern, est. 1852). Further important cartographic firms included Carl Chun (B. Fahrig)¹⁹ (Berlin, est. 1876), Columbus Verlag²⁰ (Berlin, est. 1909), Oskar Eulitz Verlag²¹ (Lissa, est. 1826), Gea Verlag²² (Berlin, est. 1861), Priebatsch's Buchhandlung²³ (Breslau, est. 1861), Lithographische und kartographische Anstalt Wilhelm C. Rübsamen²⁴ (Stuttgart, est. 1868), Geographisches Institut und Landkartenverlag Julius Straube²⁵ (Berlin, est. 1858), Druckerei und Verlag L. Schwann²⁶ (Düsseldorf, est. 1821) and Geographische Anstalt Karl Wenschow²⁷ (Munich, est. 1937). Probably the most

renowned of all was the Geographische Anstalt Justus Perthes.²⁸ It was founded in the city of Gotha in 1785 by Justus Perthes (1749–1816) and became, during the nineteenth and early twentieth centuries, one of the most important international map producers and promoters of geographic knowledge. While Justus Perthes produced several eminent atlases, such as the premium *Stieler Handatlas*, as well as leading scientific journals such as *Petermanns Geographische Mitteilungen*, it also became one of the most important publishers of school maps.

The cartographers and the design of school wall maps

The name Justus Perthes is mainly associated with the development of school wall maps based on the work of the Prussian officer Emil von Sydow²⁹ (1812–1873) who is considered to be the founder of ‘methodical’ school cartography.³⁰ In the late 1830s von Sydow began to develop his own school wall maps while he was working as an instructor at the cadet school in Erfurt between 1832 and 1843. During his teaching career he realised that the cartographic material available at the time was inadequate for didactic purposes. For this reason he experimented with colour lithography in order to produce better school wall maps. The new lithography print technology developed by Alois Senefelder (1771–1834) enabled cartographers to create multi-coloured prints by using multiple stone plates. The technology resulted in school maps being able to be produced more cheaply and sold in higher quantities. In his so-called ‘oro-hydrographic maps’ von Sydow removed all unnecessary elements, leaving just the main landscape features, such as mountains, hills, rivers and the coastline which gave more focus and created a ‘total impression’ of the earth’s surface.³¹ Furthermore, he combined the depiction of the terrain with bright so-called ‘regional colours’, which enabled pupils to easily perceive the main landscapes features according to a succession of ‘natural’ colours (green for lowlands, brown for highlands, blue for lakes and rivers). Although von Sydow was not the first to formulate innovative map design criteria for teaching purposes, his improvements gave the school wall map its specific abiding appearance, with a colour scale which is still used (with modifications) in current school cartography.³²

With his first results von Sydow convinced the publishing house Justus Perthes to produce a series of wall maps according to his principles. *Asia* which he

produced in 1838, was the prototype for the *Wand-Atlas über alle Theile der Erde* (1838–1856). The new atlas included maps of other parts of the world which were published in the following years: *Europa* and *Africa* in 1839, *Nord-Amerika* and *Süd-Amerika* and *Erdkarten* (World) in 1840, *Deutschland* in 1847 and *Australien* in 1856.³³ Although he didn’t manage to publish all of the planned twenty-four maps, the production of these seven was an enormous economic success and more than 8,000 copies were sold.³⁴ Von Sydow entered the Perthes publishing house in 1855 and worked there until 1860, refining his innovations and developing more school maps and atlases which were published in several foreign languages.³⁵ In the same period Justus Perthes also published school wall maps on the history of Europe in the *Historisch-Geographischer Wand-Atlas* by Anton Bretschneider (1808–1878), a teacher from Gotha.³⁶

The cartographers of the next generation continued to use von Sydow’s basic principles but also improved them. After von Sydow left in 1860 the production of school cartography fell into neglect for a long time in Gotha.³⁷ In the meantime cartographic publishing houses elsewhere were able to gain an important market share. They included Dietrich Reimer in Berlin, Wagner & Debes in Leipzig and Georg Westermann in Brunswick. The geographer and cartographer Heinrich Kiepert (1818–1899) began work as head of the cartographic department at Dietrich Reimer in 1852. There he developed a series of physical and historical school wall maps.³⁸ Another important publisher and competitor to Justus Perthes was the Verlagsanstalt H. Wagner & E. Debes, founded 1872 in Leipzig by Heinrich Wagner (1846–1921) and Ernst Debes³⁹ (1840–1923). Debes was a disciple of the cartographer August Petermann (1822–1878) and received his training at the Perthes publishing house in Gotha (1858), where he spent ten years. Debes developed high-quality maps and atlases for middle and upper-level schools. His work was later continued by his disciple Hans Fischer (1860–1941).⁴⁰ At the same publisher Georg Westermann brought out school atlases for upper-level schools. With their *Diercke Schul-Atlas* (which first appeared in 1883, and is still being published today) Westermann became the market leader.⁴¹ Its editor Carl Diercke (1842–1913), and later his son Paul (1874–1937), also began to develop a school wall map programme around 1900, which corresponded in colour, details and terrain portrayal to school atlases.⁴² Compared to these developments, the

cartographers in Gotha began very late with a new school cartographic programme.⁴³ After neglecting it for almost twenty years, von Sydow's school wall maps were reworked and supplemented with further maps by cartographer Hermann Habenicht (1844–1917).⁴⁴ Habenicht enlarged the scale, made the maps bigger and brighter. The improved and extended sixteen maps were a success and were published as the *Sydow-Habenicht's Methodischer Wand Atlas* (1888–1896). It appeared in several editions and continued far in to the first half of the twentieth century (Fig. 1).⁴⁵

The actual innovator of school cartography was the cartographer Hermann Haack (1872–1966)⁴⁶ at the beginning of the new century. Haack was a pupil at the Ernestinum school in Gotha.⁴⁷ The publisher Bernhard Perthes (1858–1919) financially supported this gifted young man. On completing school Haack studied geography in Halle and Göttingen and became the geographer Ferdinand von Richthofen's (1833–1905) assistant in Berlin. In 1896 he finished his doctorate in Göttingen as a student of the geographer Hermann Wagner (1840–1929), a former employee of Justus

Perthes, and began work for Justus Perthes, where he received practical training as a cartographer. Haack belonged to a new generation of cartographers.⁴⁸ Because of his academic background he could reflect on his practical knowledge and refine the traditional principles and methods according to the motto 'Check everything and keep the best!'⁴⁹ Haack improved von Sydow's traditional tinted scale of greens and browns with brighter and more vigorous colours.⁵⁰ Furthermore, he added a bright red to emphasise the highest elevations and combined it with an extremely accurate depiction of the terrain by using a combination of hachures, hypsometric colouring and shadowing, which was based on the so-called traditional 'Gotha cartographic style'.⁵¹ The viewer could follow the elevation from the colder colours of the water and the lowlands to the warmer colours of the highlands. Thus, he gave the maps a warmer overall appearance and a very detailed portrayal of the terrain with characteristic landscape features which could be seen comfortably from a distance. Additionally, the use of a black frame helped to increase the impact of the colours.



Fig. 1 Herman Habenicht and Emil von Sydow, 'Erdkarten', 1:20,000,000, 6th edition, 173 x 206 cm, [Sydow-Habenicht, *Methodischer Wandatlas*], Gotha, J. Perthes [c.1930]. Reproduced with the permission of the map collection of the National Library, Leipzig.



Left

Fig. 2 Eduard Gaebler, 'Deutschland' [physical], 1:800,000, 45th edition, 191 x 158.5 cm [Gaebler's *einheitliche Schulwandkarten*], Leipzig Lang/Klasing, [c.1939]. Reproduced with the permission of the map collection of the National Library, Leipzig.

Opposite page

Figs. 3 & 4 The differences in the design of school wall maps are illustrated in the details of Figs 3 and 4.

Left Fig. 3 The (physical) school wall map of 'Palästina' (1:25,000, 114 x 110 cm, Gotha Justus Perthes, 1907) by Friedrich Burbach and Hermann Haack.

Right Fig. 4 The (physical) school wall map of 'Palästina' (1:200,000, 202 x 156 cm [with further maps], Leipzig List & von Bressendorf, 1910) by Heinrich Harms. Reproduced with the permission of the map collection of the National Library, Leipzig.

To achieve this he adopted and improved critically the theoretical work of the Austrian cartographer Karl Peucker (1859–1940) who by developing new principles about the use of hypsometric colouring had stimulated discussion about terrain portrayal.⁵² In several detailed methodological articles and reviews Haack reflected on and described his new principles of map design.⁵³ His principles, such as *Richtigkeit*, (correctness), *Klarheit* (clarity) and *Anschaulichkeit* (vividness) left a long-lasting impact on the appearance of school maps.⁵⁴ At the same time he planned and executed a huge programme of more than 250 school wall maps, subdivided into several wall map atlases, such as the *Großer Geographischer Wand Atlas* in 1907, the *Großer Historischer Wand Atlas* in 1912 and the *Physikalischer Wand Atlas* in 1913. With this programme he realised and published 135 school wall maps between 1907 and 1938.⁵⁵ In 1913 Haack published an illustrated booklet called *Wie eine Schulwandkarte entsteht*, (How to make a school wall map), describing for the general public the complex process of creating and lithographically printing school wall maps.⁵⁶

Between 1898 and far into the 1950s Haack became the leading figure of the publishing house. He was

mainly responsible for the tenth edition of the *Stieler's Handatlas* and became editor of *Geographischer Anzeiger* (Geographical Gazette), the journal for school geography. In this position he also played an eminent role in the foundation of the Association of German School Geographers in 1912.⁵⁷

Around the turn of the century Leipzig became, besides Berlin, home to many leading map manufacturers.⁵⁸ Eduard Gaebler (1842–1911),⁵⁹ was a noted publisher of school wall maps. He began as a cartographer working for Georg Westermann and then as editor of the *Diercke Schul-Atlas*. Gaebler later founded his own firm in Leipzig where he produced 100 school wall maps (Fig. 2), most of them for the publishing house of Georg Lang (later Hilmar Klasing & Co.). A further important publisher of school cartographic products was List & von Bressendorf, founded 1907 in Leipzig by Paul List and Felix von Bressendorf, who took over the geographical department of the publishing house of Hellmuth Wollermann.⁶⁰ The firm specialised in cartographic materials for middle-level schools. The history of this publishing house is mainly connected with the name of teacher and school geographer Heinrich Harms (1861–1933).⁶¹ Harms trained as a



school teacher at the seminary in Oldenburg,⁶² after which he joined the Prussian school service and taught between 1881 and 1904 at a village school near Plön in Holstein. The strain of overwork forced him to take early retirement, which left him a lot of time for reading, travelling and writing. An autodidact he extended his geographical knowledge and became involved in issues of school reform. His main interest was to improve the teaching of geography. He wrote numerous books on the methodology of school geography and also published school textbooks, atlases and wall maps in which he embarked on a new approach to the representation of relief. Harms' intention was 'to bring more vividness, more warmth, roughly said more pleasure into the lesson'.⁶³ His first attempt *Schulwandkarte von Deutschland* (School wall map of Germany) (1899) was heavily criticised by Haack because of its 'inaccurate' cartographic reduction of landscape features.⁶⁴ While Haack used a very accurate combination of hachuring and hypsometric colouring, Harms used also a tinted scale with warm colours but, for the purposes of teaching, his terrain portrayal was much simpler (Figs. 3 & 4). He aimed for greater plasticity and a vivid eye-catching rendering of the terrain which he claimed would make it easier for pupils to grasp the characteristic landscape features. Therefore to create relief he combined brightly coloured hypsometric curves with strong light and shade effects. Additionally, Harms used special red

coloured symbols to denote sizes of cities to help students remember information. He also introduced political boundaries into physical maps.⁶⁵ His work improved over the years and it was widely recognised among teachers.

Heyday and hubris, c.1900 to 1945

Besides the obligatory physical-geographic school wall maps more and more thematic ones (history, politics, economy, trade, religion, trade, climate, geology, etc.) were added to reflect the changing school curricula around 1900.⁶⁶ While trying to maintain good visibility from a distance and with bright colouring, school wall maps became more complex and contained more information. Teacher Georg Lukas described the new diversity of thematic school wall maps in 1906: 'More and more vegetation areas and boundaries are being noted. Completely new is the representation of the undersea surface of the earth by depth stages. Economic geography is also beginning to be used. We still lack earth maps about isobars and winds, the magnetic conditions, the earth's flora areas, the spread of human races and religions'.⁶⁷

Thematic maps were mostly used in high schools and universities. All these new topics needed specialised knowledge. Therefore cartographers worked together with a variety of experts, such as teachers, geographers, geologists, historians, theologians, anthropologists, ethnologists and so on.⁶⁸ Some years before the

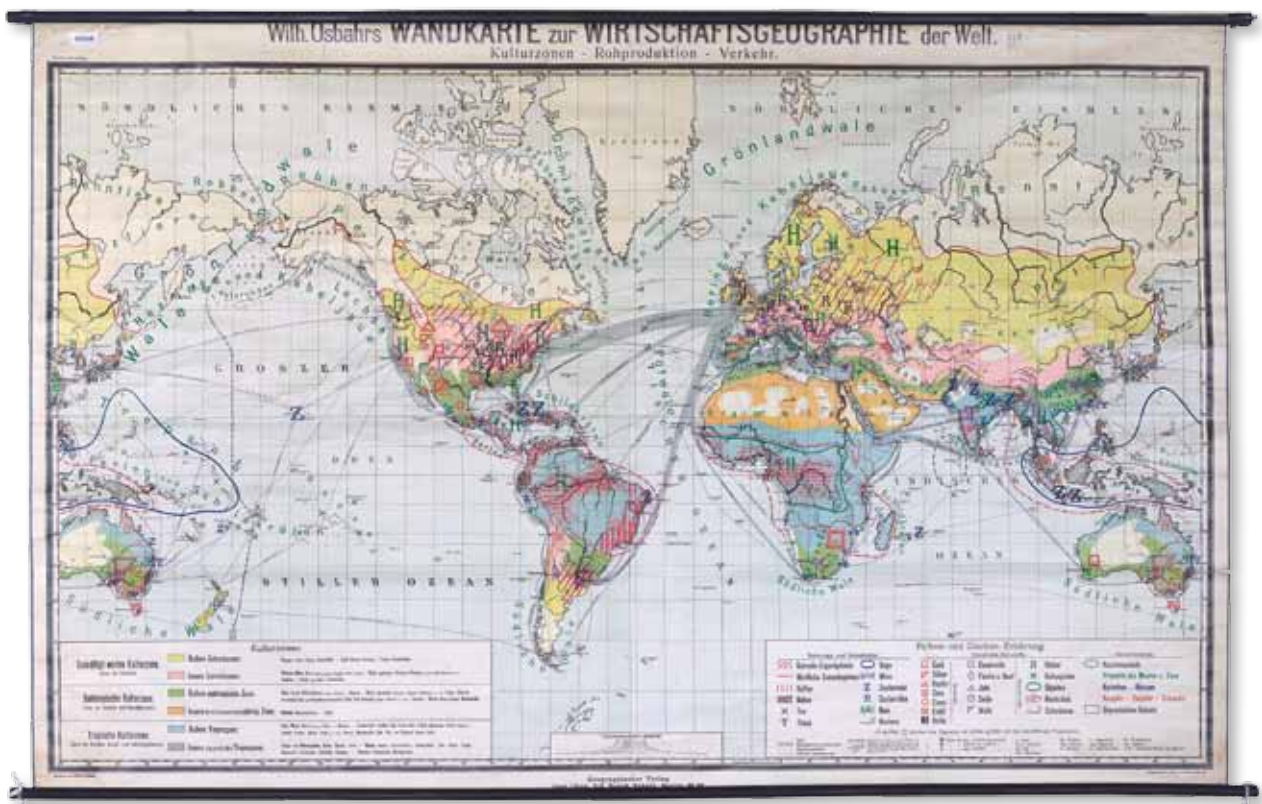


Fig. 5 Wilhelm Osbahr, 'Wandkarte zur Wirtschaftsgeographie der Welt: Kulturzonen, Rohproduktion, Verkehr', 1:20,000,000, 230 x 145 cm, 2nd edition, Berlin C. Chun, Bernh. Fahrig [c.1908]. Reproduced with the permission of the map collection of the National Library, Leipzig.

outbreak of the First World War, German school wall map production reached its heyday. A large number of publishers competed in what at the time was a fiercely contested market. Especially after 1900 new school wall maps were produced that dealt with topics such as the German colonies, world traffic and world economy (Fig. 5).⁶⁹ The cartographic design was not only made more effective, but also the physical size of the maps became increasingly bigger. Some of Eduard Gaebler's maps measured more than 4 square metres.⁷⁰ Haack presented a giant map of Germany at the world exhibition for book and graphic trades (BUGRA) in Leipzig in 1914; it measured almost 9 square meters.⁷¹ It was probably produced less for sale than as an expression of the cartographic and printing technology possibilities which publishers like Justus Perthes proudly demonstrated at the international exhibition.⁷²

After the First World War, with the foundation of a map department (1919) at the Deutsche Bücherei (German Library) in Leipzig, the largest German-language wall map collection was assembled. The head of the department, the geographer and librarian Hans Praesent⁷³ (1888–1946), not only systematically collected all German-language school

wall maps that had been available since the beginning of the new century, but he also organised public exhibitions and thematic conferences which offered users the opportunity to compare the products of different manufacturers.

Cartographic publishing houses in the 1920s met with increasing difficulties. Their method of production needed to be brought up-to-date. Offset printing gradually replaced lithographic printing for school wall maps.⁷⁴ At the same time, many publishers were struggling with economic and financial problems. The post-war economic crisis of the 1920s and the Great Depression in the early 1930s forced several traditional publishing houses such as Oskar Eulitz (1928), Carl Chun (1929) and Carl Flemming & C.T. Wiskott (1932) into decline and bankruptcy.⁷⁵ Nevertheless, despite the shortage of paper and ongoing economic problems, many new school wall maps were created and new themes were introduced according to changes in the school curricula. In addition to the existing subjects, and under the influence of an increasing extreme right movement, new nationalist ideologies such as *Volks- und Kulturboden* (German national and cultural soil) or *Geopolitik* (geopolitics) were added, and soon after 1933 were

followed by more extreme topics such as *Rasse* (race) and *Blut und Boden* (blood-and-soil).⁷⁶

Cartographers worked increasingly together with academic experts who belonged either to the extreme nationalist right or to the national socialist movement. H. Wagner & E. Debes worked with the geographer Albrecht Penck (1858–1945); Georg Westermann with the geographer Ewald Banse (1883–1953) and the teacher Bernhard Kumsteller (1890–?); Justus Perthes with the teacher Max Georg Schmidt (1870–1956), the physical anthropologist Egon von Eickstedt (1892–1965), the geographers Hermann Rüdiger (1889–1946) and Walter Geisler (1891–1945) and the *Oberarbeitsführer* Erich F. Berendt (?–?).⁷⁷ The new geopolitical school wall maps were different from the standard ones. Cartographers used enlarged dynamic symbols such as coloured lines and curved arrows.⁷⁸ Although these maps were full (and sometimes overloaded) with details, most of them maintained the important aspect of good visibility and striking appearance, but they were also extremely politically suggestive. The maps underlined the dynamic geopolitical character of the world, depicting spheres of geopolitical interest, influence and power. They emphasised concrete territorial claims from the past, which placed expectations of expansion in the near future.⁷⁹ The depiction of changing boundaries, as well as the distribution of peoples and races, reflected the process of political and social radicalisation of the German society that paved the way for National Socialism.

Conclusion

Many of the traditional publishing houses were destroyed or severely damaged during the heavy air raids between 1943 and 1945. After the end of the Second World War only a few publishers survived. In West Germany publishing houses like Georg Westermann in Brunswick and Paul List in Munich continued to produce school wall maps. Other companies, in particular in the Soviet occupied eastern part of Germany, perished as a result of nationalisation, scarcity of materials and emigration. However, school wall map production did not disappear in the GDR. Gotha and Leipzig retained their historical positions as leading centres of map production.⁸⁰ The former private firm Justus Perthes became nationalised in 1953 and was renamed VEB Hermann Haack in 1955 and continued to produce school wall maps for the national and international market. The Perthes family fled to West Germany shortly before expropriation, and without any compensation re-established the

Verlagsanstalt Justus Perthes in Darmstadt, where the firm produced only school wall maps.⁸¹ Werner Painke (1920–1988) who worked for Justus Perthes in Darmstadt, Willy Eggers⁸² (1901–1974) who worked for Paul List in Munich and the cartographers of the VEB Hermann Haack improved the classic map design of Haack and Harms, while maintaining the main principles of their predecessors.⁸³ New technologies were added in the 1950s, like the method of relief sculpturing which had been developed by the sculptor Karl Wenschow (1884–1947) in the 1920s. The procedure was based on an accurate plaster model of the terrain which was precisely carved by an automatic milling machine (pantograph) then lit and photographed from a distance.⁸⁴ With this method, cartographers could create shaded reliefs that gave the terrain greater plasticity. The technique was adopted for school atlases and school wall maps.

Today Sydow, Kiepert, Gaebler and Debes have almost completely disappeared from the collective memory. While Haack, Harms and Diercke are still well-known brand names for supplying teaching materials, most of the original publishers have long since ceased to exist. With the arrival of the digital age school wall maps are largely being replaced by interactive whiteboards and web services. Only a few publishers still advertise them in their catalogues. For historians, on the other hand, they are becoming more and more interesting. A planned digitisation of 4,000 school wall maps in the collection of the German National Library in Leipzig aims to make them available again to an interested public.⁸⁵

Notes

1 Despite their importance for the history of education and cartography school wall maps, in comparison to other school media did not become until lately a focus of historical research. The probably best overview article about the history and design of German school wall maps is Walter Sperling, 'Wandkarte, Schulwandkarte', Ambros Brucker (ed.), *Handbuch Medien im Geographie-Unterricht*, Düsseldorf Schwann, 1986, pp. 145–160. See further Wolf Günther Koch, 'Wall Maps', Mark Monmonier (ed.), *The History of Cartography*. Vol. 6, 2. *Cartography in the Twentieth Century*. Chicago/London: University of Chicago Press, 2015, pp. 1693–1695. For the history of Dutch school wall maps see Lowie Brink and Lucie Holl, *De wereld aan de wand: de geschiedenis van de Nederlandse schoolwandkaarten*, Zwolle: Waanders, 2010.

2 The design, aims and applications of school wall maps were widely discussed by cartographers and school geographers in several articles. See for example Hermann Haack, 'Neue Schulwandkarten!' *Geographischer Anzeiger*, No. 2, 4/5, 1901, pp. 51–53. Rudolf Langenbeck, 'Ueber Schul-Wandkarten', *Geographische Zeitschrift*, No. 11, 3, 1905, pp. 162–177. Max Georg Schmidt, 'Zur Methodik geschichtlicher Schulwandkarten', *Geographischer Anzeiger*, No. 35, 20,

- 1934, pp. 467–472, 491–498. Emil Hinrichs, 'Das Wesen der Schulwandkarte und die Grenzen ihrer Darstellungsmöglichkeiten', *Zeitschrift für Erdkunde*, No. 12, 1944, pp. 45–58. Egon Breetz, 'Schulwandkarten', *Potsdamer Forschungen/C*, H. No. 64, 1986, pp. 54–62.
- 3 Sperling 1986, p. 145.
- 4 Since religious education was part of the school curriculum in the German states school walls maps of Palestine belonged to the standard equipment of almost every German school. See Jakob Moskopp, *Die Behandlung der Landeskunde Palästinas im geographischen Unterricht. Ein Beitrag zur Geschichte der Geographiedidaktik und Schulgeographie*. Diss. Trier, 1984. Walter Sperling, 'Heinrich Kiepert's Wandkarte von Palästina' (1857), Hartmut Asche and Theo Topel (eds.), *Beiträge zur Geographie und Kartographie. Festschrift für Ferdinand Mayer zum 60. Geburtstag (Wiener Schriften zur Geographie und Kartographie, Vol. 3)*. Wien: Institut für Geographie der Universität Wien, 1989, pp. 194–207.
- 5 Ute Wardenga, 'Theorie und Praxis der länderkundlichen Forschung und Darstellung in Deutschland', Frank-Dieter Grimm and Ute Wardenga (eds.), *Zur Entwicklung des länderkundlichen Ansatzes. Beiträge zur Regionalen Geographie*, Vol. 53. Leipzig IfL, 2001, pp. 9–35.
- 6 Jeremy Howard, 'Classroom Genres. Aspect, Values and Interpretations of painted School Interior Scenes'. Sjaak Braster, Ian Grosvenor and María del Mar del Pozo Andrés (eds.), *The Black Box of Schooling. A Cultural History of the Classroom*, Brüssel: Lang, 2011, pp. 59–77.
- 7 As standard dictionary for the history of German publishing houses see *Würffels Signete Lexikon*, ed. by Reinhard Würffel, Berlin: Grotesk Verlag, 2010. As introduction about the history of German cartographical publishing houses see the following articles of Joachim Dammhain, 'Entwicklung und Bedeutung der kartographischen Verlage in Leipzig bis zum Beginn des Zweiten Weltkrieges', Joachim Dammhain, Joachim und Marianne Stams (eds.), *Leipzig als kartographisches Zentrum. Vorträge des wissenschaftlichen Kolloquiums aus Anlaß des 75jährigen Bestehens der Deutschen Bücherei und ihrer Kartensammlung*, Leipzig: Deutsche Bücherei, 1988, pp. 74–85. Georg Jäger, 'Kartographischer Verlag', *Geschichte des deutschen Buchhandels im 19. und 20. Jahrhundert*, Vol. 1: Das Kaiserreich 1870–1918, Frankfurt a. M.: Buchhändler-Vereinigung, 2001, pp. 575–601. For a very detailed overview of the history of cartographic publishing houses see Heinz Peter Brogiato, "'Baedeker" und "Stieler": die Rolle des Verlagswesens zwischen Popularisierung und Professionalisierung der Geographie im 19. Jahrhundert'. Monika Estermann and Ute Schneider (eds.), *Wissenschaftsverlage zwischen Professionalisierung und Popularisierung der Geographie im 19. Jahrhundert* (Wolfenbüttler Schriften zur Geschichte des Buchwesens, Vol. 41). Wiesbaden: Harrassowitz, 2007, pp. 77–114. Jürgen Espenhorst gives also a profound overview of the history of the most important cartographical publishing houses in Germany during the nineteenth and the early twentieth century. Jürgen Espenhorst, *Petermann's Planet. A Guide to German Handatlases and Their Siblings Throughout the Worlds 1800–1950*. Vol. 1: The Great Handatlases. Schwerte: Pangea, 2003.
- 8 Brogiato, 2007, p. 89.
- 9 The history of the publishers of German school wall maps has received little attention. For a first bibliographical overview see Hans Praesent, *Bibliographische Übersicht der deutschen Schulwandkarten*. Stuttgart: Fleischhauer & Spohn, 1928. See further Werner Stams, 'Die Entwicklung der Wandkartenproduktion deutschsprachiger Länder bis zum zweiten Weltkrieg', Joachim Dammhain und Marianne Stams (eds.), *Leipzig als kartographisches Zentrum*, Leipzig: Deutsche Bücherei, 1988, pp. 52–73. See also Sperling 1986 and Koch 2015.
- 10 Espenhorst 2003, pp. 517–555. *Verlagsveränderungen im deutschen Buchhandel 1944–1957*, Leipzig: Verlag für Buch- und Bibliothekswesen, 1957, p. 1273.
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Dr Norman Henniges is an historian, geographer and librarian with research interests in history of geography, geology and cartography. Following an undergraduate degree in Modern History, Medieval History and Geography at Humboldt University in Berlin and University College in London, he did a doctorate and received a further degree in library and information science at Humboldt University. He worked as researcher at the Leibniz Institute of Regional Geography in Leipzig, at the University of Erfurt, the Friedrich Schiller University in Jena and the National Library in Leipzig. He is currently speaker of the working group 'History of Geography' of the German Geographical Association.

WORTH A LOOK

Loraine Rutt: cartographic ceramicist

Ljiljana Ortolja-Baird

There are many contemporary artists who incorporate maps and other cartographic elements in their work. In past issues of the journal we have featured the work of Kristjana S. William (No. 139); Matthew Picton's extraordinary relief sculptures of cities (No. 135); and Stephen Walter's 'Utopia' (No. 134). In each instance maps are an integral part of the creative process.

This issue showcases Loraine Rutt, a south London-based artist who fashions exquisite maps and pocket globes, but not from materials traditionally associated with globe or mapmaking. She is a ceramicist, whose medium of choice – porcelain – has properties that appear, at first, counterintuitive to the items she produces. Loraine explains that her two passions – ceramics and maps – are inextricably connected. Both disciplines focus on Earth. The porcelain clay, which she transforms into sculptures, is of the Earth and maps record Earth's physical surface. "Making scale models of our planet therefore seemed a natural progression."

What sets Loraine apart from many other artists whose work has been inspired by maps is that her work is a true meeting of art and science, and perhaps explains why she was invited to exhibit at the New Scientist Live Festival of Ideas that took place at ExCeL in London in September.

Before becoming a professional artist she was a cartographer. On completing her O-levels she stumbled across two advertisements in the *London Evening Standard* looking for apprentice cartographers. Rutt was an accomplished illustrator at school and, combined with the pleasure she derived from the Ordnance Survey maps that accompanied the family on camping holidays, she was prompted to apply. She completed the four-year apprenticeship at the Geography Department at Birkbeck College, London and remained there for a further eight years supplying staff with topographic and geological maps for teaching and publication. Aware that she needed more from her work beyond translating other people's material she embarked on evening classes in ceramics. This extra curricular activity eventually resulted in a degree in ceramics from Central St Martin's art school.

In her studio under the Peckham Arches stand several tall sturdy vases etched with intriguing lines,

dots and squiggles. Loraine explains that her first ceramic adventures away from the cartographer's drawing board were 'Journey Vases'. Constructed from winding coils of clay, representing memory, they are a three-dimensional visualisation of sketches she made, and continues to make, while on her travels. 'Journey Vases' are an ongoing project to which she returns to from time to time.

There are two other distinct areas of her cartographic expression that demonstrate both her artistry and commitment to topographic accuracy: Two-dimensional relief work and globes.

Charles Booth's Victorian poverty maps inspired Loraine to create porcelain wall reliefs illustrating the distribution of wealth in contemporary London. Using cobalt blue to represent those areas of London where at least 20 per cent of children are in poverty and 18-carat gold dots to represent houses sold for more than £1m in 2013, Rutt noted that the distribution of wealth has remained concentrated in roughly the same geographic locations as observed by Booth (Fig. 1).

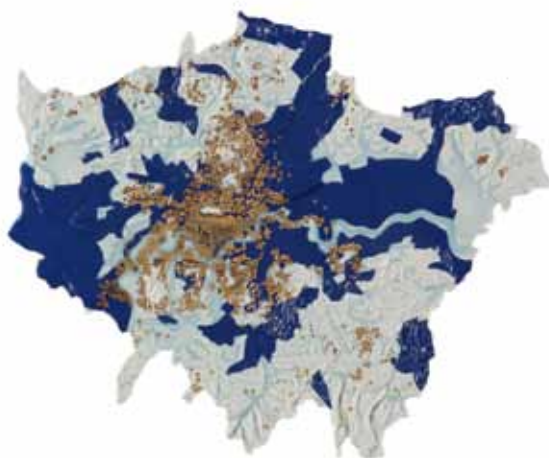


Fig. 1 'Modern Booth: Have and Have Not', 2015. Porcelain, 32 x 45 x 2 cm. Edition 1 of 20. Photo: L. Rutt.

Smaller in scale are her 'Peckham Postcards' and 'Lost Rivers' series. These postcard-size, two-dimensional reliefs came about from her walks through Peckham Rye Park where a persistent pool of water on the pathway sparked her search for the lost River Peck. Using a nineteenth-century Stanford's map of the



Fig. 2 'Segment: Earth', 2017. Porcelain. 70 x 134 x 2 cm. Edition 1 of 20. Photo: Gareth Sambidge.

area she was able to confirm her suspicion that the mystery pool was on the course of the 'lost' stream that had been enclosed in 1823. These works are close to paper-thin and demonstrate the delicacy of her medium. When held against the light the rivers and other landmarks of the area that have been lost to development become visible.

Striking amongst her two-dimensional work is a series called 'Segment'. They are globe gores. Measuring 70 x 134 cm, this series was developed from a contour map prepared by Rutt on a horizontal scale 1:26,000,000 and vertical scale 1:500,000. The model for each gore was built up in 1 mm thick layers of porcelain, and then sculpted after detailed study of Google Earth maps (Fig. 2).

Inspired by eighteenth-century pocket globes, Rutt also makes exquisite globes. These tiny topographic globes are based on accurate survey data and are worked at a scale of 1:170,000,000. They show, in semi-relief, the continents, mountain ranges, rivers

and seas; she incises these features into the surface of the drying porcelain, and then, when dry, paints them. The finished globes are housed in beautifully-fashioned cases made of local oak, some covered in nappa leather, with brass fasteners especially made to her design; their interior are painted with the celestial world (Figs. 3 & 4).

Miniature globes of the moon have more recently entered Rutt's portfolio. They are constructed at a scale of 1:46,320,000 for which she uses NASA survey data to accurately render the lunar surface. In the New Year she will be launching a new limited edition Apollo Globe. It will be an edition of fifty and will have a signed certificate by Col Al Worden Apollo 15 command module pilot (Fig. 5).

Her work is on display in London at the Shapero Modern gallery (www.shaperomodern.com) from 12 December until Christmas. More on her work can be found at www.lorainerutt.com or seen at art fairs in London and abroad organised by TAG Fine Arts.



Fig. 3 Scribing coastlines on raw porcelain. Photo: Sarah Weal.



Fig. 4 'Land and Sea Pocket Globe', 2017. Porcelain and oak globe. 7.5 cm diameter. Photo: Ian Skelton.



Fig. 5 'New Moon', 2017. Porcelain globe with red English nappa and oak pocket case. 7.5 cm diameter. Photo Ian Skelton.

MAPPING MATTERS

News from the world of maps

Mystery of the St Gallen Globe solved

In 2016 *IMCoS Journal* (No. 144) published an article by Jost Schmid. In it he speculated on the origin of the St Gallen Globe which today is housed at the Swiss National Museum in Zurich. The mystery has finally been solved and the findings have been published in the *Zeitschrift für Schweizerische Archäologie und Kunstgeschichte* (vol. 74, issue 2, 2017).



St. Gallen Globe, 1571/1595. Collection of the Zentralbibliothek Zürich in the Swiss National Museum. © Schweizerisches Nationalmuseum, Inv. Nr. 864.

By using optical and radiographic analyses on the globe artwork, researchers at the Zentralbibliothek Zürich were able to establish where the globe was made. Previously it was suggested that the sixteenth-century globe hailed from Augsburg or Konstanz, but results from the analyses of the portraits painted on the globe's cradle have proved otherwise. The findings revealed that three of the portraits had been overpainted.

The globe became the property of the Abbey of St Gall in St Gallen when the Court of Mecklenburg ran into financial difficulties after the death of Prince John VII in 1592 and it was obliged to sell off property. It arrived at the Abbey decorated with portraits of two

Reformation scholars: Gerhard Mercator and David Chytræus. Their religious persuasion making them clearly unsuitable persons for display in a Catholic institution. The offending portraits were subsequently painted over. Mercator disappeared completely and Chytræus was reworked into the Greek mathematician and scientist Archimedes. Further indicators which confirm that the globe originated in the Protestant court of Mecklenburg are the portrait of Prince John VII which was adapted to resemble a monk; the inclusion of names of local saints; the addition of the town of Rostock; and the presence of the Julian calendar which in the late sixteenth century was only used by Protestants.

Cultural treasure gifted to the National Library of Norway

The outstanding collection of maps of Norway and Northern Europe belonging to IMCoS member William B. Ginsberg is bound for the National Library of Norway. The collection, which is the achievement of thirty years of collecting, consists of atlases and loose sheets totalling several thousands of maps. The value of the collection is around NOK 60 million. Among the maps in the collection is the first printed map of the Nordic region dating from 1482 and from the same year, the first printed world map on which Norway is drawn.

Bill's unique collection was purchased by the Sparebankstiftelsen DNB foundation and will be transferred to the National Library of Norway. At the same time, the Norwegian Government will allocate funds for a new map centre to be established in the National Library. The Ginsberg's collection is the most valuable donation the library has ever received and when combined with the library's existing map collection, it will hold the world's largest and most systematically compiled collection of maps of Norway and the Nordic regions.

Bill's outstanding collection has been the source and inspiration for the three books he has written on the region: *Maps of Scandinavia and the Arctic 1482–1601*, (2006); *Maps and Mapping of Norway 1602–1855*, (2009); and *Sea Charts of Norway 1585–1812*, (2012). All three titles are published by Septentrionalium Press.



L to R Bill Ginsberg, André Støylen (CEO of Sparebankstiftelsen DNB) and Aslak Sira Myhre (Director General of the National Library of Norway) at the press conference on the 28 August 2017 for the William B. Ginsberg gift to the National Library of Norway.

‘Enlightening Maps’

On 22 September Elizabeth Baigent and Nick Millea welcomed about 50 participants to a day-long seminar, ‘Enlightening Maps; Celebrating 25 years of The Oxford Seminars in Cartography’. The event was held at the Weston Library lecture theatre at the Bodleian Library. The very first Oxford Seminar, in 1993, was given by Professor David Woodward, a co-founder of the History of Cartography project with Dr Brian Harley. The Oxford organisers are hoping to repeat the event every three years or so. Speakers included Mary Pedley from the History of Cartography project in Milwaukee, USA, who spoke about mapping in the European Enlightenment. Mary is one of the editors of Volume Four of the six-volume project. Other speakers included Katherine Parker, Vanessa Collingridge and Megan Barford.

Barry Lawrence Ruderman conference on cartography

The inaugural conference took place at the Rumsey Map Center at Stanford University on 19–21 October 2017. The conference, a biennial event, is designed to bring together established and emerging researchers interested in the history of cartography. This first iteration of the conference exemplified this ethos by highlighting a broad range of research from medical mapping to imperial imaginings, from tenth-century China to twenty-first-century Singapore.

The proceedings opened with a reception followed by keynote speaker Parag Khanna. The noted spatial thinker discussed ideas developed in his book,

Connectography, arguing that the global winners of the future will be the most connected entities, be they corporations or states. He accompanied the talk with an array of maps, some animated, which exemplified how cartography can creatively capture the complexities of our globalised present.

Friday witnessed the first half of the speaker presentations. The day started with Daniel Tuzzeo, PhD candidate, on religious cartography. He was the first of five Stanford speakers. A particular highlight of the day was a cogent three-part case study of Croatian Jesuit mapping in the Americas from Mirela Altic (Institute of Social Sciences Ivo Pilar; University of Zagreb).

Friday also included the two technological talks, as the conference series wishes to highlight the promise of technology to further cartographic analysis. Benjamin Sacks (Princeton) shared how he has used QGIS to better visualise the urban planning of colonial cities in the eighteenth century. Chet van Duzer (Library of Congress; Lazarus Project) showed us how multispectral imaging changed what we can see on the Henricus Martellus world map (c.1491) held at Yale and laid out the future of the potential of this technology.

The delegates were treated to a surprise unveiling of a spectacular manuscript planisphere made by Urbano Monte in c.1587, one of the largest manuscript world maps of the sixteenth century. It is made up of sixty sections that join in five concentric circles. When joined it measures 2.7 metres in diameter. David Rumsey, who purchased the manuscript from Barry Ruderman, printed a facsimile of the complete planisphere – revealing, likely for the first time, the planisphere as Monte intended. The attendees also had an opportunity to see the original manuscript, which is bound as an atlas.

Saturday continued with more speakers, particularly Lauren Killingsworth, named a 2017 Global Winner by the Undergraduate Awards for her research on medical mapping in Oxford prior to the John Snow cholera map. Joel Radunzel (West Point) also shared award-winning research that examined the fact and fiction of the British Palestine Campaign maps. They capped off a rich conference that showcased new research in the history of cartography, proving that the field is robust and diverse.

The next Ruderman Conference on Cartography will be in autumn 2019. The permanent URL is blrcc.stanford.edu. The digital exhibition, curated by each of the thirteen speakers, can be accessed at <https://exhibits.stanford.edu/blrcc/>.

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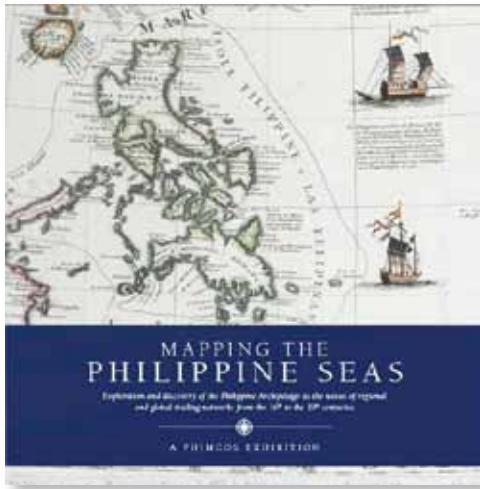
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BOOK REVIEWS

Mapping the Philippine Seas: Exploration and discovery of the Philippine Archipelago as the nexus of regional and global trading networks from the 16th to the 19th centuries

by Peter Geldart. Makati: Philippine Map Collectors' Society, Inc., 2016. ISBN 8789719590729. PB, 136. PHP 1,250 (US\$25) plus postage & packing. the catalogue can be purchased through the PHIMCOS website: www.phimcos.org



In the spring of 2017, to celebrate the 10th anniversary of the Metropolitan Museum of Manila, the Philippine Map Collectors' Society and the museum co-organised an exhibition, *Mapping the Philippine Seas*. It ran at the museum from 15 March to 31 May 2017. Seventeen members of the Society, a private collector and the GSIS Museo ng Sining loaned 165 maps and charts of the Philippine Archipelago and its surrounding seas to the exhibition. Peter Geldart, a member of the Society's Board of Directors and one of the exhibition's Organising Committee, curated the exhibition and wrote the very handsome catalogue here under review. It is a fine achievement.

Reviewing the catalogue of an exhibition of charts loaned by a group of collectors is always a difficult exercise. Whatever bolder and wider visions an exhibition's curator may have had, the exhibition will always have to be curated from the maps that collectors own and that they are prepared to lend. What inspires collectors to collect and what they are disposed to lend may not be all that a historical exhibition of this kind might ideally need.

In part that difficulty was addressed by the exhibition's and the book's sub-title, *Exploration and discovery of the Philippine Archipelago as the nexus of regional and global trading networks from the 16th to the 19th centuries*. But, as we shall see, this did as much to exacerbate as solve the problem.

The constrained three-century timeline helpfully excluded the difficulties of the pre-colonial era at one end and the *embarras de richesses* of twentieth-century mapping coverage at the other. But a merely manageable compass was not sufficient. For, splendid though the catalogue is – it is quite beautifully designed and produced – its title promises more than the contents can fulfil.

As a conspectus of the 'exploration and discovery of the Philippine Archipelago' it would be hard to imagine a better overview than that presented by this catalogue. We are taken from vestigial existence in the name of a single island or town in the 'something's there but we know not what' gesturalism of Ramusio's *Terza Tavola* of c.1563 to the stunning detail of the Treaty of Paris Map compilation of 1899. On the way we watch as islands are identified, their relative positions established, their shapes refined and the channels between them are clarified.

We watch, indeed, as somewhere called 'The Philippines' is conjured cartographically into being from what, before that process unfolded, had been a gallimaufry of peoples and tongues linked now this way, now that, both between themselves and with their neighbours. We can catch that process under way in Coronelli's *Isole dell'Indie, divise in Filippine, Moluche, e della Sonda* of c.1692–97, though here the caption, 'Note the dotted line delineating the maritime boundaries of the Philippines', misleads us into reading a natural boundary over a quite artificial and invented one. The dotted line does nothing of the sort. It creates a boundary that, looking at the other boundaries on Coronelli's lovely map, could have been drawn quite otherwise. It would have been good to have had more discussion of this act of cartographic creation rather than what we have, which is the assertion of an act of cartographic discovery.

As a demonstration of the archipelago as a 'nexus of regional and global trading networks' the catalogue is less successful. Trade is mentioned, but the maps reveal the networks to be elsewhere: the Nanyang for Chinese

traders, the Spice Islands for the Portuguese and Dutch, and China for the British and other Europeans. The obvious exception is the Manila Galleon trade between New Spain (Mexico) and Manila. Yet exactly how that most important trade link helped the mapping of the Philippines is at best unclear, at worst, perhaps, of but marginal relevance.

Indeed one comes away from the catalogue less convinced that one has seen the mapping of a regional and global trading nexus (whether link or focal point) than aware of how a hubbub of regional traders in spices, silks, ceramics and tea seem to have mapped the archipelago as much as an obstacle to be got around on their routes to elsewhere, as a place of significance in its own right. Here, prominently in frame, are the many splendid maps in Sections III, IV and V, especially in the work of the great Dutch, French and British mapmakers of the seventeenth, eighteenth and early nineteenth centuries.

What Peter Geldart's informative and interesting catalogue shows better is how the maps, and hence ever improving knowledge of the Philippines, were products of the arrival of the modern world in Asian waters. On the one hand the maps were a product of European imperialism's geostrategic ambitions. On the other, ensuring steady improvement, was the thirst for systematic geographical knowledge for its own sake. As a product, in between came that act of cartographic creation, the Philippines.

What is missing, and may perhaps have helped focus the narrative better to bring out this key, geostrategic informing principle, is any discussion of the Treaties of Tordesillas (1494) and Zaragoza (1529). For, surely, it is the geostrategic implications of the unspoken antimeridian of the first, made explicit in the second that is the spectre at the cartographic feast of the first fifty pages of the book? In most of the earlier maps it is there. Its disappearance thereafter and, as the maps show us, its replacement first by several and then by an internationally agreed prime meridian (1884), signals a major and important geostrategic, and thus cartographical shift.

There are quibbles – quibbles, because they should not detract from a delightful and impressive production. The discussion of rhumb lines and compass roses makes a number of errors about navigation, not the least of which are mistaking a Small Circle for a Great, mis-defining rhumbs and misunderstanding latitude sailing. There is no discussion, as surely there should be, of the arrival of soundings on charts (mid seventeenth century) and the mapping of Philippine

waters in three dimensions rather than only two. That connects with the absence of any comment on what were arguably the most important influences on the steadily improving cartography of the Philippines. This was surely those defining tropes of cartographic modernity, the steady shift towards agreed units of measurement, a shared and improving geodesy and above all the European practice, largely standardised by the end of the seventeenth century, of ships keeping detailed logbooks, thus creating the ever-growing database from which cartographers could make and improve their maps?

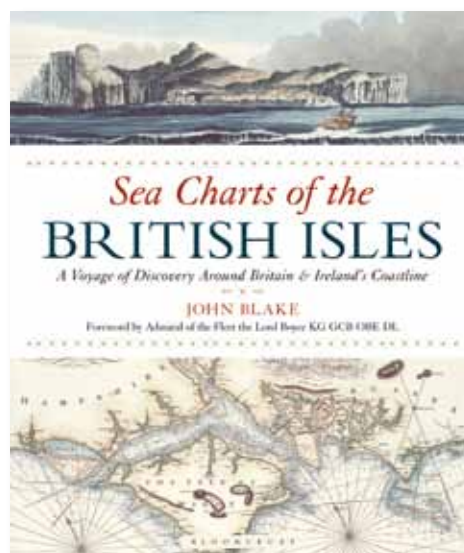
There are other minor infelicities – William Thornton Bates' first survey ship was the diminutive HMS *Young Hebe*, not the *Lady William Bentinck*, swiftly renamed HMS *Plover* – but such oversights are inevitable when one person seeks to cover so large a compass. That this *compasso da mare* has been done in so concise, spirited and easily readable a way speaks well of Peter Geldart's learning and of the wisdom of the Organising Committee in asking him to take on the task.

I would counsel readers to arm themselves with a quality magnifying glass. Like me, they will also miss an index. But all in all this is a splendid book that will pay coming back to again and again.

Stephen Davies, Hong Kong

Sea charts of British Isles: A voyage of discovery around Britain & Ireland's coastline

by John Blake. London: Adlard Coles Nautical Bloomsbury, 2016. ISBN 978147244900. PB, 128, STG £18.99.



This attractive book was first published by Conway Maritime Press in 2005, but not previously reviewed for IMCoS. The new edition, now published by Adlard Coles Nautical, is a reprint with a strong paper cover, still staple bound and using the same paper as the original hardback. Changes to the first printing are limited to minor revision of the author's acknowledgements and rearrangement of the original dust jacket material for the new cover.

John Blake served as a naval officer before taking up a career in retailing. In 1996 he was involved in initiating the production of the Hydrographic Office's excellent, but now discontinued, reproductions of early charts from the Office's archives. *Sea charts of the British Isles* was his second book about charts. He writes well and has since written other popular books on related subjects.

The book recounts the charting of British coasts in an imaginary circumnavigation which in the author's words 'offers the chance to view of the coasts of the British Isles through the surveyor's pen'. An introductory overview uses William Smith's 1815 geological map to illustrate the different coastal characteristics of the British Isles, and outlines the development of surveying skills and the charting of the islands from the early sixteenth century to the present day. This is followed by six sections, each with short introductory texts, describing different parts of the coast, starting from London and the Thames and proceeding west-about down the English Channel. The whole book is very generously illustrated with over 100 good clear reproductions. These include charts, many with additional larger scale details, coastal views, including navigational elevations, and land maps of harbour towns and coasts of maritime interest. The 28 x 24 cm quarto format makes possible the inclusion of larger scale details from many of the charts, large enough in most cases to make the text on them readable. Inevitably many of the reproductions are of well-known and often reproduced charts, but they also include many manuscript examples less commonly available in print. Each illustration is accompanied by notes, often explaining interesting local detail. The author writes well and relatively lengthy notes for each illustration make it easy for the general reader, for whom it was intended, to dip into. It will whet the appetite of many to explore the subject further.

What will IMCoS readers find in the book? They will appreciate the good reproductions and the inclusion of lesser known manuscripts as well as widely

reproduced charts. This alone may justify the purchase for some people, but many will have reservations if they want to do more than browse. There are of course credits to the source of all illustrations, but the author explains that he has not written for the academic reader so has not given references to his sources for his text though he offers to provide these if asked.

The author describes his circumnavigation as eclectic and information is not always presented in a logical order. A more structured account of the development of charting skills would have been welcome, as would making the link between the seafarers and trades on different parts of the coast, their varied navigational needs and the charts produced to meet them. The arrangement of the book, with information divided between the main text and equally eclectic notes on separate charts makes such threads more difficult to follow and increases the importance of the index and bibliography for anyone with a real interest in the subject.

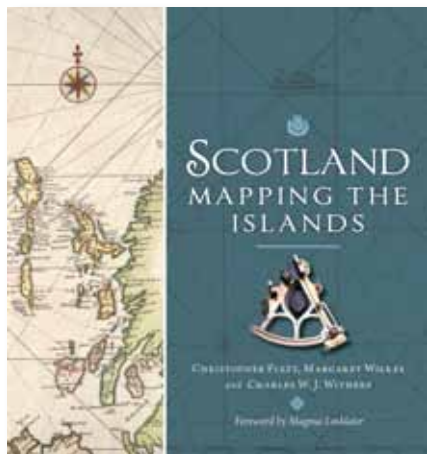
The bibliography is inadequate for any reader. There is no mention of a key work, A.H. Robinson's *Marine Cartography in Britain* (Leicester University Press 1962) and contains errors such as misquoted titles and even a failure to name Professor E.G.R. Taylor as the author of *The Haven Finding Art*. Improvements in the bibliography would have helped those wanting to learn more and one wonders why the opportunity was not taken to at least correct mistakes in the new publication.

The index majors on proper names and misses making connections between information appearing both in the text and in notes on illustrations. The coal trade for example was important on both east and west coasts and is referred to in the text but the word 'coal' has no entry in the index.

Some may be tempted to rate this as a coffee-table book, but taken as a whole this tribute to the coastlines of the British Isles is enjoyable and informative and well written. The reproductions are excellent and reservations of specialists should not detract from the interest in British hydrography the book should raise for a general reader. It deserves its reappearance in print.

Susanna Fisher, Upham, UK

Scotland: Mapping the islands by Christopher Fleet, Margaret Wilkes and Charles W. J. Withers.
 Edinburgh: Birlinn in association with the National Library of Scotland, Edinburgh, 2016. ISBN 9781780273518.
 HB with dust jacket, xii, 244, many illus. STG £30.



This is the fifth book published in recent years by Birlinn that showcases the rich diversity of cartographic resources that can be found in libraries and archives throughout Scotland. In this volume the authors of *Scotland: Mapping the Nation* (2014) focus on Scottish islands, arguably one of Scotland's most appealing geographical characteristics. Small islands have been challenging environments in which to make a living and have witnessed massive population losses since the mid nineteenth century, paradoxically however the very features that have made island life precarious have attracted writers, researchers and visitors in large numbers. Moreover Scottish islands are far from an homogenous group, differing in size, population, employment and accessibility, not just in relation to the nearest mainland settlement but also to Scotland's major towns and cities. The contrast between Cumbræ and its mini 'capital' Millport, reached after a ten minute ferry crossing from Largs (North Ayrshire) and currently marketed as Scotland's most accessible island, and islands such as Sandray, Pabbay and Mingulay at the southern extremity of the Outer Hebrides that were deserted in the early twentieth century could not be greater. Improvements in transport mean that Skye has technically lost its island status after the opening of the Skye Bridge in 1995, although high tolls charged for almost a decade proved highly controversial; causeways have linked smaller islands to their larger neighbours, such as Eriskay to South Uist, while the progressive introduction of road equivalent tariff has

enabled islands to be accessed by ferry more cheaply today than ten years ago. The task of selecting appropriate maps that reflect such contrasting and complex histories is a daunting one and the authors have wisely chosen a thematic approach.

In their Introduction the authors explore the lure of islands; the history of mapping Scotland's islands, featuring maps of the whole country dating from the sixteenth and seventeenth centuries, including extracts from well-known cartographers such as Pont and Blaeu, to the Admiralty charts of the nineteenth century; and pose the question what constitutes an island. The Introduction as might be expected also sets out the framework for the remainder of the book which is eight chapters based on the twin themes of the lure of maps and islands. Chapter 2 explores the peopling of islands beginning with early examples of human occupancy such as defensive sites including brochs and crannogs and goes on to examine the impact of emigration and depopulation which continue to be emotive issues in Highland history. The next chapter strikes a different tone: place names including the changing recognition of Gaelic in national culture and in maps. Not surprisingly there is a chapter on transport related issues, in this case labelled 'Navigating' that takes readers on a cartographic journey: the first marine surveys; lighthouses; more Admiralty charts; the iconic map of David MacBrayne's steamers in 1886; another showing flight paths in the Western Isles with the prohibited military zone around St Kilda denoted by a duck symbol representing a bird sanctuary! Chapter 6 turns to issues of defence providing ample opportunity to showcase island castles; structures dating back to European conflicts and locations associated with wars of the twentieth century such as Scapa Flow (Orkney). The next section focuses on the Improving Movement or Agricultural Revolution which spread throughout Scotland in the eighteenth and nineteenth centuries. This had a profound impact on island populations that included over-optimistic plans for agrarian change; development of fisheries and new planned villages each of which involved the compilation of maps. Chapter 7 'Exploiting' examines the wide range of island resources – as varied as shooting game on sporting estates, slate quarrying and off-shore oil – which have attracted investment over the last 150 years. This is followed by a chapter that is loosely based on art and artistic representations on maps which is an odd choice at this point in the book and certainly breaks up the flow of the contents. Moreover, what is said here could apply to Scottish

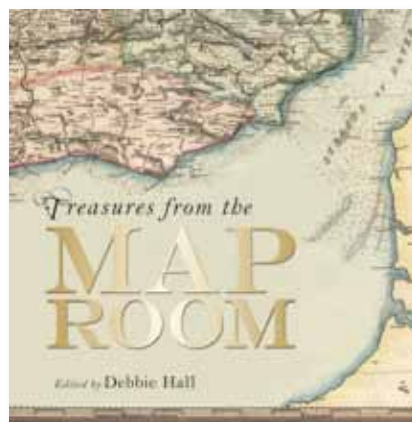
maps and indeed cartography in general. The final chapter is on firmer ground and is titled 'Escaping'. On offer here are islands as places of retreat and isolation, with Iona and Holy Island as prime examples though George Orwell's stay in Jura, when he penned the novel *Nineteen Eighty-Four*, attracts visitors today. The growing trend for mass market tourism and day visitors to head for islands that offered a different experience is only fleetingly explored in a Caledonian Railway poster of rail and steamer routes in the Firth of Clyde and in two maps of Rothesay (Bute). Given the economic, social and environmental impacts that the rise and changing nature of this kind of tourism have had on the host islands it is surprising that the authors chose to give this theme such scant attention. Instead the next map of a small island in the River Tay adjacent to the village of Killin, showing the Clan MacNab burial ground, is preferred. This in many ways is typical of *Mapping the Islands*, much sound material but the tendency to indulge in the esoteric at the expense of the essential. Another example is the over-elaborate discussion maps of the memory among Gaelic speakers which may have its place in a final year university seminar programme but is less likely to excite the readers of this journal. There is a detailed Guide to Sources and Further Reading.

The vast majority of the maps are printed which will probably appeal to IMCoS members, however the reviewer repeatedly found himself questioning why more manuscript plans were not included. Indeed the authors, all geographers, have shown a remarkable lack of appetite to source plans from the National Records of Scotland, local archives and museums and private estate collections and instead appear content to rely on the resources, albeit extensive, of the National Library of Scotland. There are numerous fine plans of Millport (Cumbrae); Tobermory (Mull); St Mary's (Orkney); and islands such as Tiree and Islay to choose from. The need to seek permissions and, in some instances, pay reproduction fees can be inconvenient but the outcome would surely have been a better balanced book that would have brought many hidden cartographic gems into the limelight. Above all, it would have demonstrated to the readership a willingness to carry out fieldwork and research away from Edinburgh. That said, the book is very reasonably priced given the large number of colour and black and white illustrations. It is printed on good quality paper and the large format page size ensures that maps can be displayed to best advantage. The editorial work and attention to detail is exemplary and the publishers are

to be heartily congratulated on their commitment to publishing each of the volumes in this series.

Douglas G. Lockhart, Ayr, UK

Treasures from the map room: A journey through the Bodleian collections edited by Debbie Hall. Oxford: Bodleian Libraries University of Oxford 2016. ISBN 9781851242504. HB, 223, 109 plus illus. STG £35.



Treasures from the map room features exclusively the map holdings of the Bodleian Library in Oxford. It is also superbly produced and keenly priced at only £35, and I understand has already sold in large numbers. No expense has been spared in the choice of paper throughout, including the glossy book jacket which features a detail from a transport map of Great Britain of 1830 on the front and a detail from the Sheldon tapestry map of Worcestershire, dated 1590, on the back. The latter is one of four tapestry-woven maps, two of which were donated to the library in 1809 (Worcestershire and Warwickshire). They were commissioned by Ralph Sheldon to decorate his new house at Weston in Warwickshire at the time, the others showing Oxfordshire and Gloucestershire. They were plotted from topographical information in Christopher Saxton's county surveys and are unique. One can only marvel at the work put in by the seamstresses of that era.

This attractive book will give readers a taster of the vast collections of maps at the Bodleian. The editing throughout is excellent and credit must go to the editor, Debbie Hall, Bodleian Library's Senior Library Assistant in the Map Room and her team. As she writes in the introduction: 'A library is a repository of

knowledge, and the gradual development of human knowledge of the Earth and skies is demonstrated by the cartographic as well as the written collections'.

The book is arranged in seven chapters covering travel and exploration, knowledge and science, pride and ownership, maps of war, the city in maps, maps for fun and imaginary lands. It must have been a difficult job choosing which maps to feature from the vast collections available but we are treated to a broad range of different examples from different eras and places. And the book brings to us some maps not normally shown in books. Apparently one of the Bodleian's strengths is the number of collections put together by individuals which have subsequently been acquired by them. For example, Sir Henry Savile (1549–1622) established a collection of mathematical books which includes early maps of the stars and works on surveying and navigation. This went to the library in the 1880s. Another notable and unusual collection is the 154 copperplates (from which maps were printed) belonging to the antiquary and bibliophile, Richard Rawlinson, who left the plates to the Bodleian in his will. Strangely enough, Dr Helen Wallis, Map Librarian at The British Library from 1967 to 1986 found the only known prints of the Americas from some of these plates during an IMCoS visit to Holkham Hall in Norfolk. This was a very exciting find which was publicised in Issue 56 Autumn 1991 of *The Map Collector* magazine. In fact, Rawlinson's bequest still ranks as the largest donation that the library has ever received. *Treasures* features one map from this donation. It is of the Roanoke River, showing the boundary between Virginia and North Carolina, and is thought to have been prepared around 1738 for William Byrd's *History of the Dividing Line*.

The bequest of antiquary Richard Gough, (received in 1809) included thousands of volumes. His interest in topography meant that significant collections of maps and topographical views were amongst them. Obviously maps of Oxford feature, including one showing where cholera was endemic in 1832 and 1849 and a map by a local surveyor, Richard Davis of Lewknor. He was Topographer to George III and produced many estate plans particularly in nearby counties.

Maps featured in the book range from local to worldwide and cover such a diverse range of subjects that each page turned produces yet another fascinating story. In the chapter called 'The City in Maps' I was intrigued by the oldest surviving map of Oxford in the collections. It was drawn in 1578 by Ralph Agas who was a land surveyor and rose to eminence during the reign of Elizabeth I. Sadly the map has suffered over

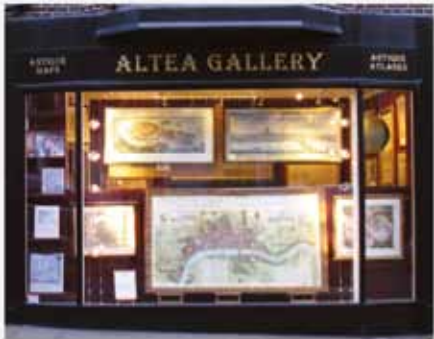
the years and 'assumes a rather dark and faded presence' in the words of the writer but many of Oxford's main features can still be seen clearly.

One map which I had never seen before was 'France as an oak tree' which appears in Chapter Seven 'Imaginary Maps'. It illustrates in a novel way the administrative divisions and centres of France and was published in Great Britain during the French Revolution. I thought it was rather beautiful and intend to visit the library to see the original. The cartouche explains that 'The Kingdom of France Being one of the most Antient in Europe is represented as an oak whose branches extend towards those countries where the Present Anarchists have endeavoured to fix their infamous principles'. So there is a hidden agenda here. Apparently the British Library has a companion map by the same author on which France is represented in the form of a ship.

If I might make one small criticism it is that a page index of the maps with their titles would have added immeasurably but nevertheless, my advice is to go out and buy a copy of this beautiful book. You will treasure it for a long time to come!


Valerie Newby (formerly Scott), North Marston, UK

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Comments on Christopher W. Tyler's article 'Leonardo da Vinci's World Map' in *IMCoS Journal*, no. 149

P.23. It is assumed that Leonardo is portrayed as the Greek philosopher Heraclitus and Bramante the optimistic Democritus. (Fritjof Capra, 2013). There are two problems with this interpretation. The date of the fresco depicts the first world globe made by Germanus in 1477 (Meurer). It is ascertained Leonardo was not in Rome but in Milan until 1483 (Heyenreich 1954). In addition, Democritus' attribute is the terrestrial globe.

The philosopher is not holding a globe, but a human skull as proven from the suture. He is contemplating the seat of the soul.

P.24 Tyler repeats J.P. Richter's (1883) erroneous translation: 'My map of the world which Giovanni Benci has'. Leonardo applies the wording '*el mio Mappamondo*', which in vernacular Italian means 'my terrestrial globe'.

P.25 Leonardo did not apply a 'curly character' to his maps. Neither are the letters he uses in his maps predominantly lowercase (Starnazzi 2008). Leonardo's stylistic development is not being taken in consideration (p. 25). CA 521 recto dates from c.1490, and CA 1106 recto from c.1496. The equilateral triangular world map dates from after 1515. Leonardo's style changed between 1490/1496 and 1515.

P.27 Tyler quotes that '*Leonardo sought out the council of the experienced cartographer like Toscanelli for discussing of these ideas*'. Toscanelli influenced Leonardo, but not vice versa. Leonardo wanted to correct Vitruvius as he writes in Manuscript L p. 53 verso (1497–1503).

P.29 In 1495 the imperialistic Spanish Pope Alexander VI was in power in the Vatican. The eagle on the globe is the old symbol of the City of Rome. The crown (see MS Innsbruck cod. 545re. Rodrigo Borgia, the imperial Pope) above the eagle reflects the behaviour of imperialistic Pope Alexander VI. There is no link with Isabella of Spain. The globe on which the eagle is standing shows the 'old' Ptolemaic world. The Spanish Eagle and the weapon of Isabella lack this important iconographic attribute of the terrestrial globe. Leonardo applied the wolf, symbol of corruption, and the olive tree as a symbol of wealth.

Tyler's conclusion, Leonardo was 'somehow' involved in the discovery of America on behalf of the Spanish crown lacks substantiation.

Sources are lacking for p. 21 '*Pope Leo X at the Vatican*'; p.22 '*da Vinci's presence*'; p. 23 '*as depictions of da Vinci and Bramante*'; p. 28 '*Newton and Leibniz*'; p. 29 '*Vespucci was a cousin of the Medici*'.

Dates for endnote 5 and caption for Fig. 5 are incorrect; Fig. 8 dates from c.1490; the octant projection is much earlier than 1508.

Fig. 10 date for the CA 92r is lacking as for Codex Madrid MS II, 112a on p. 28. On p.24 the author writes '*can be seen in his map of the western Mediterranean*' which differs from Fig. 7 caption.

Leonardo did draw a map c.1503 of the west coast of Brazil, east and west coasts of Africa as presented at the IMCoS Symposium in Hamburg on 9 October 2017.

Stefaan Missinne, Vienna, Austria

Tyler Response

I greatly appreciate the opportunity to communicate with the members of the cartographic community and welcome debate on the web of interconnections that I explore in the article. In view of the uncompromising tone of Dr Missinne's Letter to the Editor, I would just like to include three quotes from his original email to me: 'I read your excellent article.'; 'The globe projections of Leonardo are very well researched.'; 'The link to Toscanelli is essential. Well researched.' (S. Missinne, email to CWT, 31 August 2015). My responses by paragraph number:

1 The date of the Germanus map is only a *terminus post quem* for the date of Bramante's globe derived from it (actually dating back to 1567); Bramante could have used it at any later date – before true world maps became popular in the 1500s.

2 The human skull does not have parallel sutures resembling those on the spheroid held by Michelangelo's philosopher, so the skull interpretation can be excluded. Philosophers have been typically associated with globes since Graeco-Roman mosaics of the 1st century BCE.

3 What is Missinne's evidence that Richter's translation is erroneous? The term 'mappamundi' for a flat map predates Leonardo by several centuries (e.g., the Hereford mappamundi of 1300). The Latin translates to 'cloth of the world', so it definitively refers to a two-dimensional sheet rather than a sphere. The term may have been applied to the Palazzo Vecchio globe by the mid-sixteenth century, but in Leonardo's time it would have generally referred to sheet maps. To my understanding, the first known cartographic globe was Martin Behaim's 'Erdapfel' of 1492, a decade *after* Leonardo mentioned storing his map with Giovanni Benci. (In any case, whichever Leonardo meant, it equally corroborates his early interests in global cartography.)

4 Admittedly, Leonardo's cartographic style varied substantially across his maps, but I have been unable to find a single example of a map that he had lettered in all caps.

5 & 7 The statement is mine, not a quote, and is misquoted; it is explicitly phrased as a speculation: '[Leonardo] *most likely* sought out the counsel of an experienced cartographer like Toscanelli,' based on the overlap in dates and interests of the two Florentines. I am glad to note that Missinne supports this direction of undocumented influence.

6 Missinne's interpretation of the symbolism of Leonardo's allegorical voyage drawing is unreferenced (as are many of his assertions). In particular, an association of the royal crown with the Pope is disputable because the papal crowns have three tiers.

8 Amerigo Vespucci was a cousin of Simonetta Vespucci (Botticelli's 'Venus'), whose niece Semiramide married Lorenzo di Pierfrancesco de' Medici in 1482, making Amerigo a distant cousin of the Medici clan.

9 The dates are not mine, but are those provided by the holders of the source documents, and are omitted if not provided by the source. 10 Indeed, a typo.

11 Thanks for corroborating Leonardo's broader cartographic interests.

I would be happy to field further questions on any details: cwt Tyler2020@gmail.com

Christopher Tyler, San Francisco, USA



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

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