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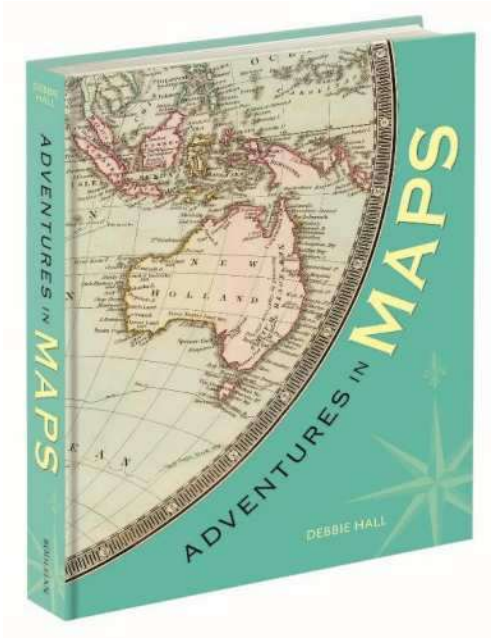
Advance Information

Adventures in Maps

Debbie Hall

May 2024

Twenty historical journeys, routes and adventures followed through the maps that made them.



Hardback, AUD$49.99, NZD$57.99
ISBN: 9781851245451

Extent: 224 pages
Size: 224 x 170 mm

'Debbie Hall enticingly demonstrates that the plethora of types of travel undertaken over the centuries is matched only by the variety of maps created to plan, accompany, contextualise, record, celebrate and advertise them.'

Peter Barber OBE, FSA, FRHistS
(Author of *London: A History in Maps)*

The intriguing journeys and routes featured in this book range from distances of a few miles to great adventures across land, sea, air and space. Some describe the route that a traveller followed, some are the results of exploration and others were made to show future travellers the way to go, accompanied by useful and sometimes very beautiful maps.

Sea charts bring to life the sixteenth-century adventures of Richard Hawkins sailing to South America, the surveys carried out by Captain James Cook and the historic sailing route followed by Naomi James, pioneering solo yachtswoman of the 1970s. An early strip atlas illustrates the road journeys of Daniel Defoe and America's iconic Route 66 is shown in an incredibly detailed mid-twentieth century map. Also featured are the stories of the Arctic explorations needed to enable a Great Circle route by air over Greenland, the archaeological expeditions of David Hogarth along the Euphrates and Aurel Stein on the Silk Road, pilgrims making their way across Europe, Thomas Cook's first package tour, the first flight from London to Manchester, and the surveys of the Moon that ultimately facilitated the first landing.

These inspirational accounts are drawn from diaries, letters, memoirs and travelogues: all illustrated with fascinating maps.

DEBBIE HALL is a Senior Library Assistant in the Bodleian Map Room.

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gleaming automobiles, smart drivers with attractive well-dressed wives and cute kids, beautiful landscapes and neatly dressed, respectful garage attendants. The more attractive motoring was as a leisure activity, the more gasoline could be sold, so it was presented as enticingly as possible. A small selection shows some of the different approaches taken to cover art (fig. 67). Maps like these, once given away free, are now popular collectors' items.

By the 1960s the road network had massively increased and huge interstate highways led to faster, more efficient but less romantic travel. By 1972 an estimated 250 million maps had been given out at gas stations, before the oil crisis led to a supply problem and the end of the struggle to attract customers. Route 66 itself continues off the western edge of the Arizona and New Mexico map to end in California. It has now long since ceased to be a national highway; it was replaced by the interstate highway system by the mid-1980s, but has more recently been promoted for its nostalgic charm. Even recently published road atlases in the twenty-first century refer to Route 66 as 'the mother road'. Parts of it are now designated a 'National Scenic Byway' named Historic Route 66. Historic service stations have been renovated and offer information and gift shops. Many settlements along the way highlight their connection with the historic route and with the song to attract visitors; it embodies a golden age of motoring.

FLY ME TO THE MOON

Planning for the Moon landings, 1969

The story of the Apollo 11 expedition in July 1969, the first to land men on the moon, is well known, but the many years of preparation and exploration that made their expedition possible is less so. In the late 1950s and 1960s, dozens of uncrewed missions to the moon were attempted by both the Soviet Union and the United States; some aimed to take photographs to send back to Earth before landing or crashing; later ones to test landing technology and collect samples from the lunar surface. There were many failures, but the successes began to pave the way for human beings to reach the Moon. The last three Ranger missions of the mid-1960s were successes, sending back detailed photographs of parts of the Moon – the Mare Cognitum (or 'known sea', named in honour of the first photographs of the Moon's surface, taken by Ranger 7 in 1964), the Mare Tranquillitatis and the Alphonsus crater. The Surveyor programme in the later 1960s demonstrated that it was possible for (uncrewed) spacecraft to make a 'soft landing' (as opposed to a crash landing) on the Moon. Importantly, the early landing craft

tested the surface of the Moon to make sure that it was firm enough to land on and that landing craft – and, in due course, astronauts – wouldn't simply sink into the moon dust.

The map shown here (fig. 68) must be one of the last maps of the Moon published before the Apollo 11 mission. Produced as a supplement to *National Geographic* magazine in February 1969, its beautiful natural colouring, with shades of silvery grey against a deep-blue background, suggests the image of the Moon that we have all seen in the night sky. At the same time it is a confident statement that the Moon is within reach. Based on scientific surveys from space, it shows the Moon with a grid of latitude and longitude such as is used for terrestrial navigation. It highlights five possible landing sites for the astronauts of the forthcoming Apollo mission, and the landing or crash sites, where known, of all previous uncrewed expeditions to the Moon. It is also a celebration of the human endeavours that had enabled space travel; the border includes the names of dozens of people and organizations associated with the Moon, from the goddess Diana and the seventeenth-century astronomer Johann Helvelius to modern scientists and observatories, both American and Soviet. It is surrounded by small supplementary maps, including one showing the Moon superimposed on an outline of the United States, to help readers comprehend its size.

There were still two further reconnaissance missions to go, in March and May 1969, before Apollo 11. After considering various approaches, NASA had decided that the best way to land men on

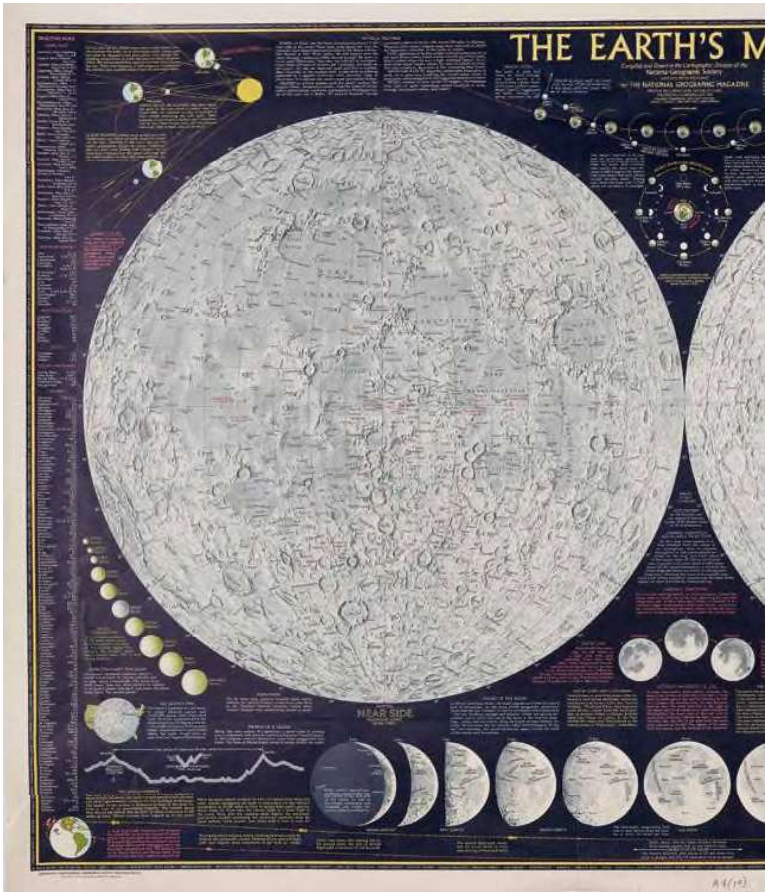

FIG. 68/19.1 The visible side of the Moon, as portrayed by *National Geographic* just a few months before the Apollo 11 landing. *The Earth's Moon,* Washington DC: National Geographic Society, 1969.

Humans have been reaching for the Moon for centuries, so it is also worth looking back at some of the earliest attempts to understand and map it. It was originally believed that the Moon had a smooth surface which reflected the Earth; looking through an early telescope, Galileo first observed its craters and rough surface in 1609, before mapping it the following year. Subsequent improvements to the telescope through the seventeenth century led others to follow him with more detailed maps, most notably Johann Helvelius, who in the 1640s built his own observatory on the roof of his home in Danzig, Poland, and spent some years mapping the Moon. His *Selenographia* of 1647 shows it at many different phases; the image here (fig. 70) shows it at the almost full gibbous phase. Who could have imagined, when this image was first created, that over 300 years later, on 20 July 1969, Neil Armstrong would take a small step for a man on the Moon's surface? The untouchable image of the Moon in the sky finally came within reach of humanity.

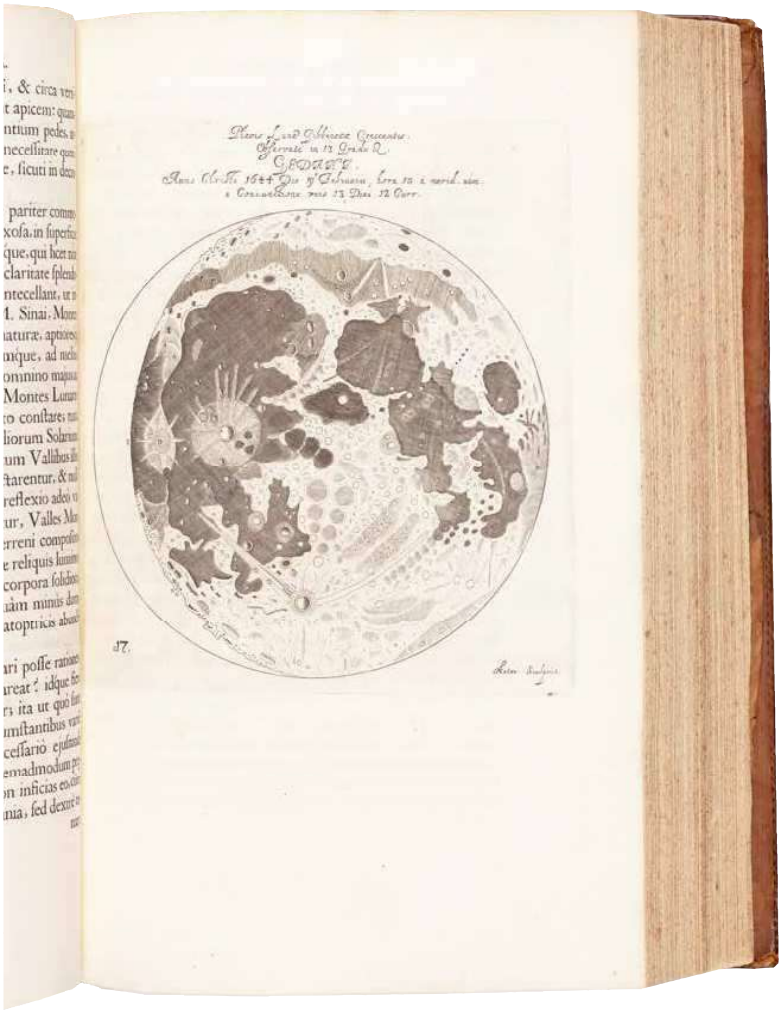

FIG. 70 The copperplate used to print this 1647 map of the Moon was afterwards turned into a teapot. 'Phasis Luna Gibberosa Crescentis…' in *Selenographia: sive Lunae description*, Gdańsk: Johannes Helvelius, 1647.

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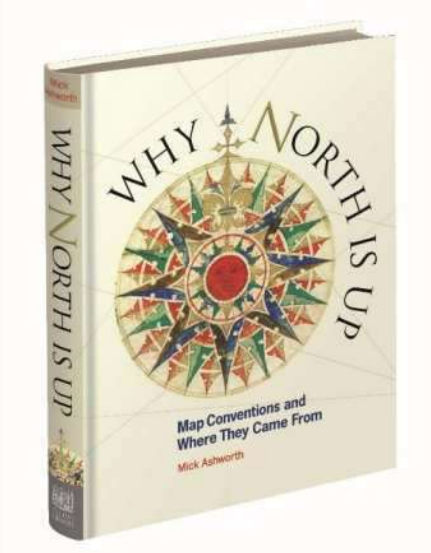
Why North is Up

Map Conventions and Where They Came From

Mick Ashworth

August 2019



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SALES POINTS

- An accessible and enlightening guide to the techniques of mapmaking through the centuries.
- Fully illustrated, it tells the story of how widely accepted mapping conventions originated and evolved.
- Examines how new mapping conventions are developing to meet the needs of modern cartography.

Many people have a love of maps. But what lies behind the process of map-making? How have cartographers through the centuries developed their craft and established a language of maps which helps them to better represent our world and users to understand it?

This book tells the story of how widely accepted mapping conventions originated and evolved – from map orientation, projections, typography and scale, to the use of colour, map symbols, ways of representing relief and the treatment of boundaries and place names. It charts the fascinating story of how conventions have changed in response to new technologies and ever-changing mapping requirements, how symbols can be a matter of life or death, why universal acceptance of conventions can be difficult to achieve and how new mapping conventions are developing to meet the needs of modern cartography.

Here is an accessible and enlightening guide to the sometimes hidden techniques of map-making through the centuries.

In this handsome and informative book, Mick Ashworth picks through the conventions that have shaped cartography thus far, in a lively narrative augmented by lavish illustrations of the maps in question. For map addicts and casual bystanders alike, this is a terrific work that both entertains and enlightens. – **Mike Parker, author of *Map Addict* and *Mapping the Roads***

Elegantly written and beautifully illustrated, Why North is Up tells you everything you need to know about the signs, symbols and science behind map-making. It will also reveal a few things you didn't know about maps. Essential reading for any map lover. – **Jerry Brotton, author of *A History of the World in 12 Maps***

Mick Ashworth is Director of Ashworth Maps and Interpretation Ltd and Consultant Editor to *The Times Atlas of the World*. He is also a Fellow of the Royal Geographical Society.

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NORTH

This way up

In 1997 Ashley Sims produced a road atlas of Britain which promised to solve a long-standing problem with maps. His *Upside Down Map of Great Britain* claimed to allow 'easier and safer travelling from north to south' (fig. 2). Half of the atlas's maps are aligned traditionally with north at the top; the other half, including all their text, are turned around so that south is at the top of the page. Frantically turning maps around during a journey, to read place names easily and to be sure of reading right or left turns correctly, was to be a thing of the past.

This may seem a highly unconventional approach, but there is no rule that dictates which way up a map should be. The Earth doesn't have a top and a bottom. It is only since the nineteenth century that the convention of placing north at the top of maps has become universally accepted. Prior to this, maps were aligned in different ways, often following cultural and religious conventions rather than any geographical or scientific rules.

Throughout the history of cartography maps have been created in different orientations. The word 'orient' (as in to orient oneself or to align a map in relation to the real world) originates from the Latin *oriens*, meaning east – a nod to the fact that historical maps commonly had east at the top. What appears to be a common factor, however, is that the top of a map is

1 Compass roses became important practical devices for indicating orientation as maps were increasingly used for navigation and exploration. They also served decorative purposes – as on this chart of the Western Mediterranean by Bartolomeo Oliva from 1559.

by different nations following different conventions, highlighted a need for standardization.

However, rules are there to be broken and departures from the north-up convention are common. One notable subversion of the norm is McArthur's *Universal Corrective Map of the World* with south at the top (fig. 4). Published in Australia in 1979 it describes itself as part of a crusade to 'elevate our glorious but neglected nation from the gloomy depths of anonymity … to its rightful position – towering over its northern neighbours', and with Australia uppermost proclaimed an end to 'down under' jokes.

Whether for practical, political, religious or subversive purposes, we now have the capability with our smart phones and satnavs to orient a map display to our direction of travel at the touch of a button. North-to-the-top may not be such an important tenet for map users today, with Google Maps having turned the world upside down in more ways than one. Ashley Sims, once perhaps not taken too seriously, now looks to have been prophetic in his recognition of the need to choose a map's orientation to suit our immediate needs.

LATITUDE & LONGITUDE

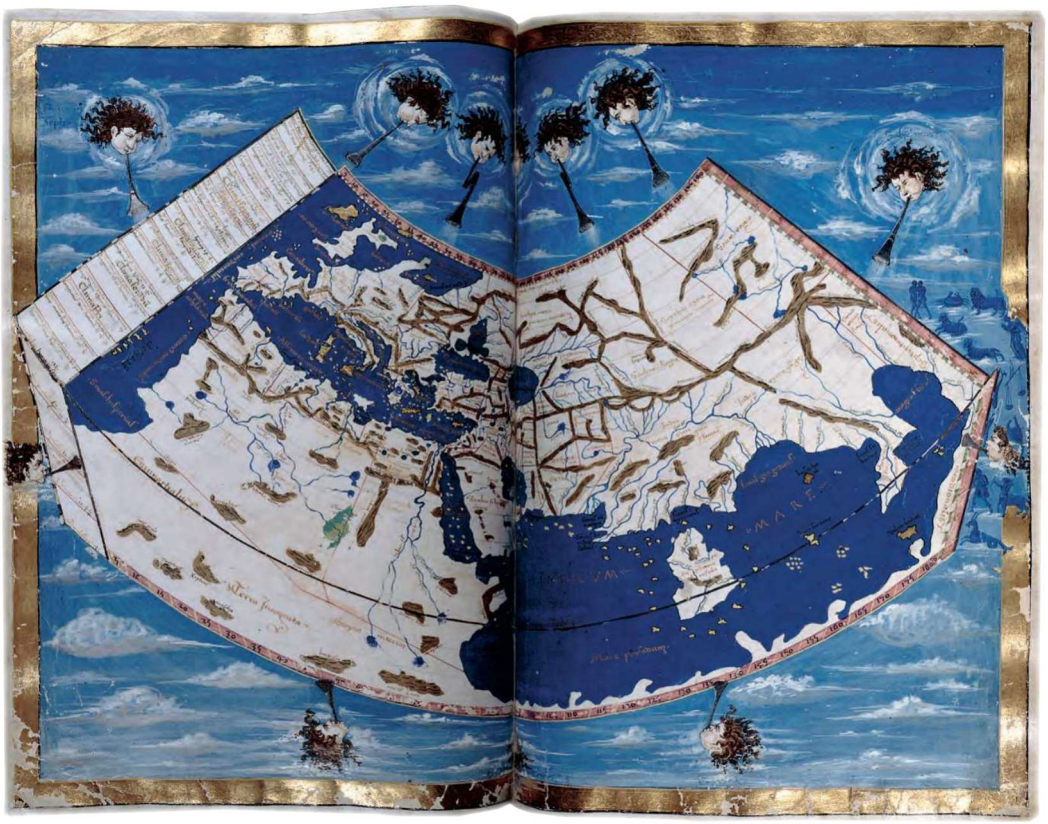
Location, location, location

Today it seems that we always know where we are. The Global Positioning System (GPS) and similar satellite constellations provide data that allow us to pinpoint our location anywhere on Earth. Through our satnav systems, smartphones and computers we can position ourselves precisely in terms of latitude and longitude – the values on which the Earth's spherical geographical coordinate system is based. But the values defining our location – 51° 45′ 14.7″ N, 1° 15′ 14.6″ W for the Bodleian Library in Oxford, for example – could have been very different.

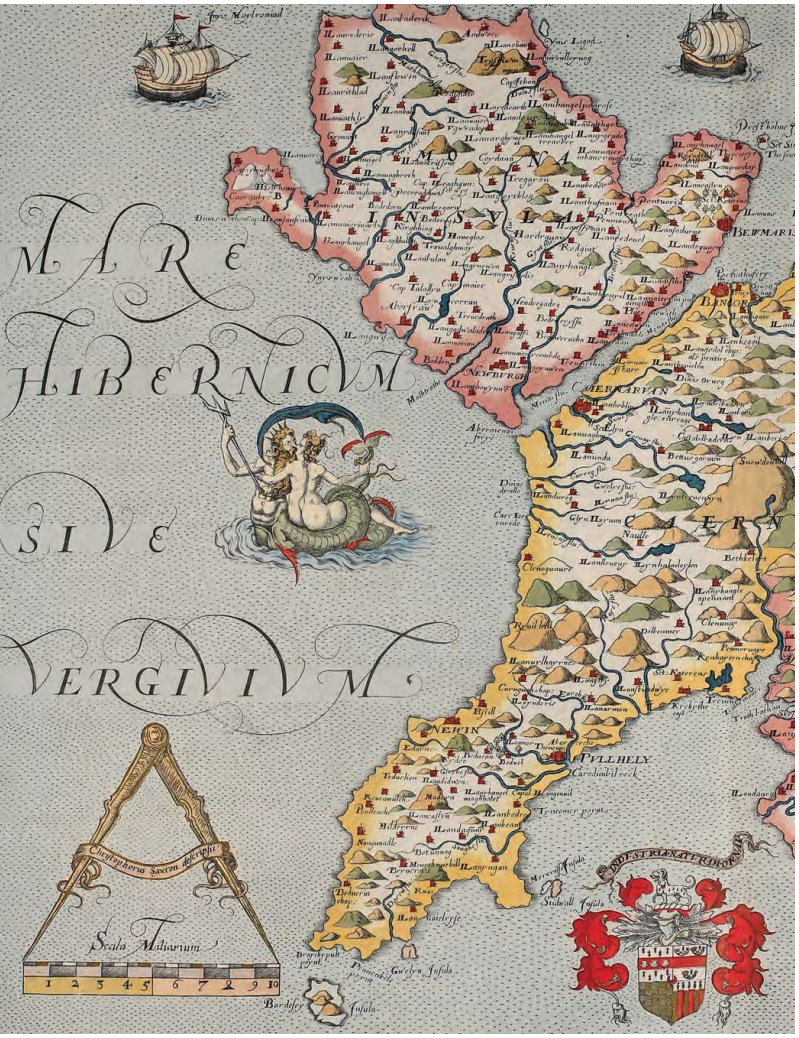
Latitude is defined relative to a plane which passes through the centre of the Earth, perpendicular to the axis around which the Earth rotates. This plane meets the Earth's surface to form the line known as the equator, measured as 0° latitude. Other planes parallel to the equator meet the Earth's surface to create a series of lines of latitude, or *parallels*. The angle between the equator and these lines define their latitude north or south of the equator. The poles are at the extreme limits of latitude, at 90° N and 90° S.

Similar imaginary lines, known as *meridians*, run north to south, perpendicular to the parallels, meeting at the poles. The angular measure of these meridians, relative to a defined reference point, is known as longitude. Whereas latitude is a natural coordinate, being measured in relation to the earth's axis and equator, longitude is a man-made coordinate, based on the arbitrary choice of a 'prime' meridian from which it is measured.

The concept of defining locations by a system of meridians and parallels was originally established by Ancient Greek geographers, mathematicians and astronomers, notably Dicearchus of Messina (360–*c.* 290 BCE), Eratosthenes of Cyrene (*c.* 275–*c.* 194 BCE) and Hipparchus of Rhodes (*c.* 190–*c.* 120 BCE). However, it is Ptolemy of Alexandria (*c.* 100–*c.* 170 CE) who is most commonly credited with establishing this method. In his *Geographia*, published *c.* 150 CE, he used a coordinate system to define the locations of all the known places in the world at the time. Although his own maps didn't survive, his system was 'rediscovered' and translated in medieval times and became the basis for mapping throughout the Arabic world and Europe, and later in China and Japan. Other than maps based directly on Ptolemy's work, the earliest 'modern' world



5 Ptolemy established the principle of defining location by latitude and longitude, although his mapping methods lay undiscovered, and unused, until the Middle Ages. Map of the world published by Donnus Nicolaus Germanus, *c.*1470, based on Ptolemy's *Geographia*, *c.*150 CE.



SCALE

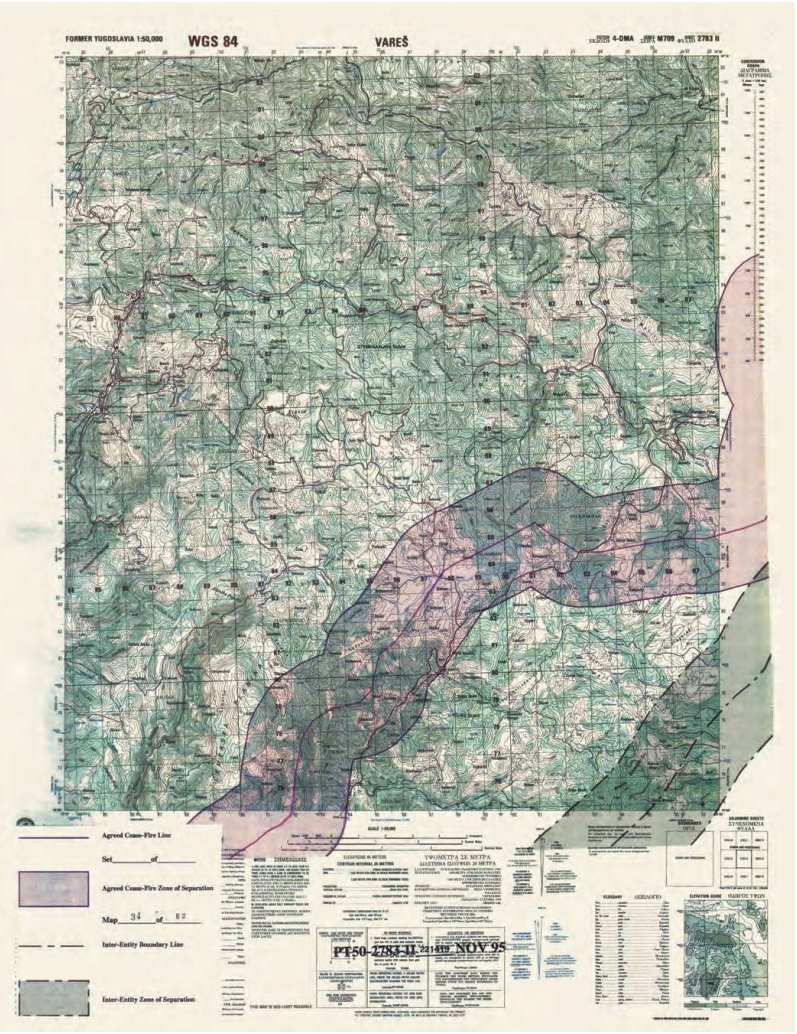
Size matters

In his short story *On Exactitude in Science*, published in 1946, Jorge Luís Borges describes an empire whose cartographers created 'a map of the empire whose size was that of the empire'.[1] And in Lewis Carroll's *Sylvie and Bruno Concluded*, the character Mein Herr boasts of a map of his country 'on the scale of a mile to the mile'.[2]

Clearly a map at life-size remains in the realm of fiction. Maps are not true-to-scale pictures of the world but are representations at smaller scales. With reduced scale come limitations both on what it is possible to show and how it can be represented. The mapping process has three basic stages: defining the purpose of the map, deciding the area to be covered, and the choice of an appropriate scale. A map's scale – the ratio of the size of a feature on the map to the size of that feature on the ground – influences the level of detail that may be shown, the amount by which features need to be simplified (the process of generalization – see p. 00), and gives some indication of how accurate and comprehensive the map is.

These issues have been around since ancient times. A statue of Gudea, a ruler of the ancient Mesopotamian city of Lagash, from *c.* 2200 BCE has him holding a plan of a temple which includes a measuring rule representing its scale. The Ancient Greeks used precise units of measure

15 Christopher Saxton's *Map of Carnarvonshire and Anglesey*, 1578, part of his atlas of county maps of Britain, includes a scale bar of 10 miles. The decorative dividers seem to emphasize and promote the accuracy of Saxton's detailed survey of Britain.



LEGENDS

What does it all mean?

The ability of a map user to distinguish between, say, a symbol representing a church with a spire from that of a church with a tower may not seem too important. But in some situations – in particular during military operations or when navigating at sea – the misinterpretation of map symbols could be a matter of life and death. Military maps (see p. 00) and hydrographic charts (see p. 00) are highly complex, and explanations of their symbology are vital to their correct use. Such keys or *legends* can themselves be significant documents – U.S. Chart No. 1, jointly published by the National Oceanic and Atmospheric Administration and the Department of Defense's National Geospatial-Intelligence Agency, entitled *Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts*, stretches to 132 pages, six of which are devoted solely to abbreviations (fig. 19). The equivalent publication in the UK (*Chart 5011*) is 73 pages long.

Not all maps demand such detailed explanations, but as maps became more complex, particularly through the nineteenth century, users needed more and more help in understanding them. During that time, different scientific phenomena were being mapped for the first time, and systematic series of detailed topographic maps were being created in many countries.

18 The legend of this American military map, *Former Yugoslavia Series M709 1:50,000 Sheet Vareš*, explains the overprint showing the Bosnian ceasefire line as defined in the Dayton Agreement of 1995. Misunderstanding of such maps could lead to serious geopolitical issues.

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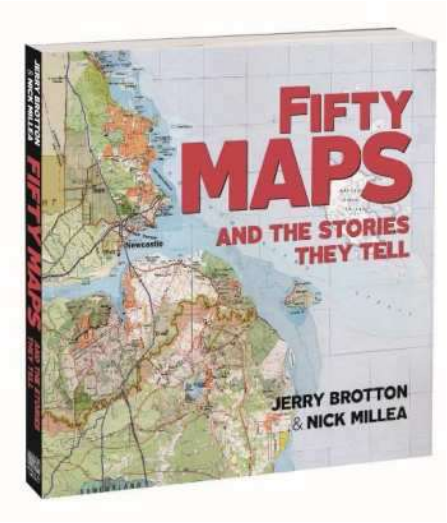
Fifty Maps and the Stories They Tell

Jerry Brotton and Nick Millea

July 2019



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SALES POINTS

- A treasure-trove of cartographical delights spanning over a thousand years.
- Features highlights from the Bodleian Library's extraordinary map collection.
- Each map is accompanied by a narrative revealing the story behind how it came to be made and the significance of what it shows.

From medieval maps to digital cartograms, this book features highlights from the Bodleian Library's extraordinary map collection together with rare artefacts and some stunning examples from twenty-first-century map-makers.

Each map is accompanied by a narrative revealing the story behind how it came to be made and the significance of what it shows. The chronological arrangement highlights how cartography has evolved over the centuries and how it reflects political and social change.

Showcasing a twelfth-century Arabic map of the Mediterranean, highly decorated portolan charts, military maps, trade maps, a Siberian sealskin map, maps of heaven and hell, C.S. Lewis's map of Narnia, J.R.R. Tolkien's cosmology of Middle-earth and Grayson Perry's tapestry map, this book is a treasure-trove of cartographical delights spanning over a thousand years.

Jerry Brotton is Professor of Renaissance Studies at Queen Mary University of London. **Nick Millea** is the Map Librarian at the Bodleian Library.

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Talking Maps
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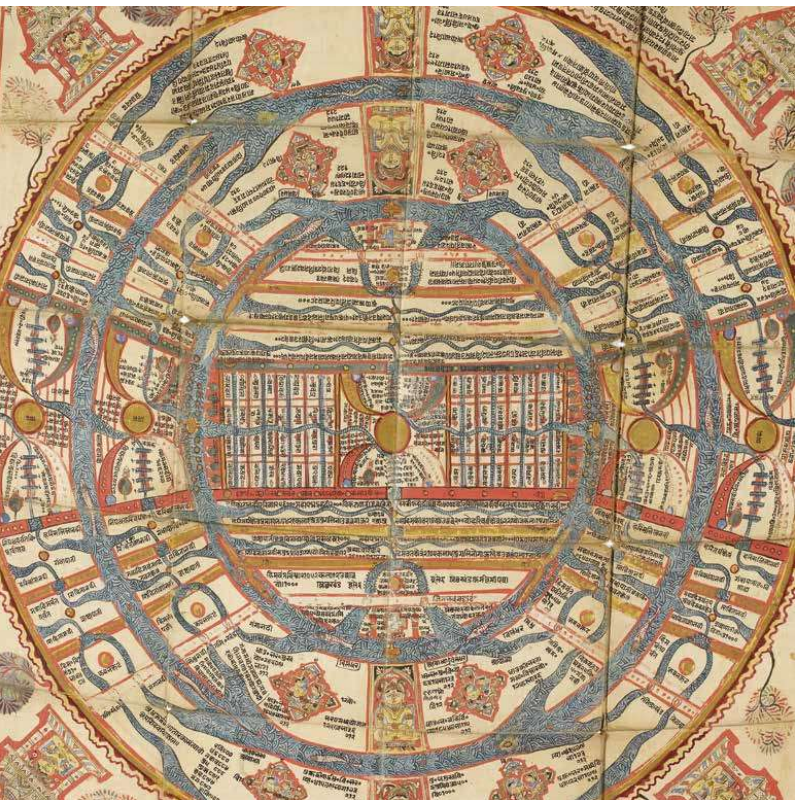


Detail from a Jain map showing the holy mountain of Meru, sixteenth–seventeenth century. MS. Or. Evans-Wentz 1.

INTRODUCTION

Every map tells a story, and *Fifty Maps* is a celebration of the sheer variety of those stories, told by travellers, sailors, merchants, pilgrims and many others. These stories in turn create their own. Most people regard maps as route-finding devices, and this aspect of their history is certainly told in some detail in this book. Over time, however, maps have been concerned with so much more than simply getting us from A to B. As we will see, this function of maps only occupies a small and quite recent part of the longer story of map-making.

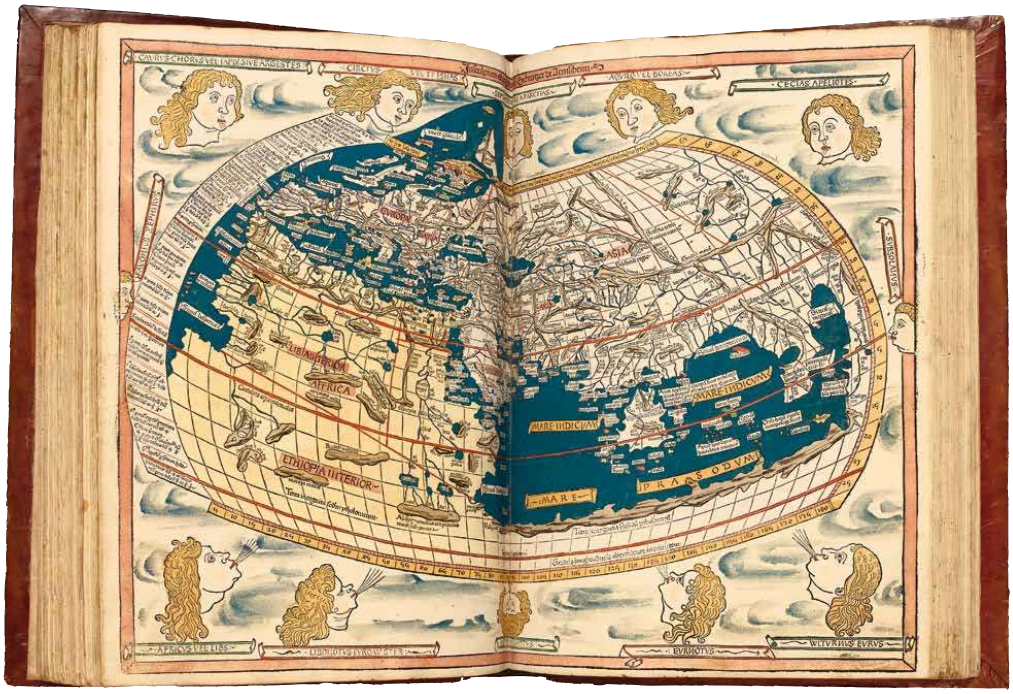
It was only in Europe in the nineteenth century, when the term 'cartography' was first used to describe the scientific study and practice of map-making, that maps became established as transparent and accurate devices enabling us to get from one place to another. Since then, advances in the organization of mapping such as the Ordnance Survey – Great Britain's national map agency – have created the conditions for printed maps and atlases to take their place in all aspects of everyday life, from the national, economic and regional administration of towns, waterways and agriculture, to individuals using them to navigate their way across cities or the countryside. In the process, maps have become ubiquitous, perhaps even more now than ever as they have gone online and we use them

1

CLAUDIUS PTOLEMY'S CLASSICAL WORLD MAP

Claudius Ptolemy is regarded as the 'father of geography'. His treatise on map-making, *Geography*, was written in Alexandria c.150 CE and set the standard for subsequent scientific map-making. Drawing on centuries of Graeco-Roman geometry and mathematics, it proposed two projections for drawing maps using a graticule (a grid of coordinates) of latitude and longitude; this illustration shows the second projection. The text listed 8,000 places within the classical world from Scandinavia in the north and Libya in the south to Korea in the east and the Canary Islands in the west. From the late fourteenth century Renaissance map-makers and navigators began to rediscover Ptolemy and this printed edition drawing on his data was published in 1486.

World map in Claudius Ptolemy, *Geographia*, 1486. Arch. B b.19, fol. Map 1

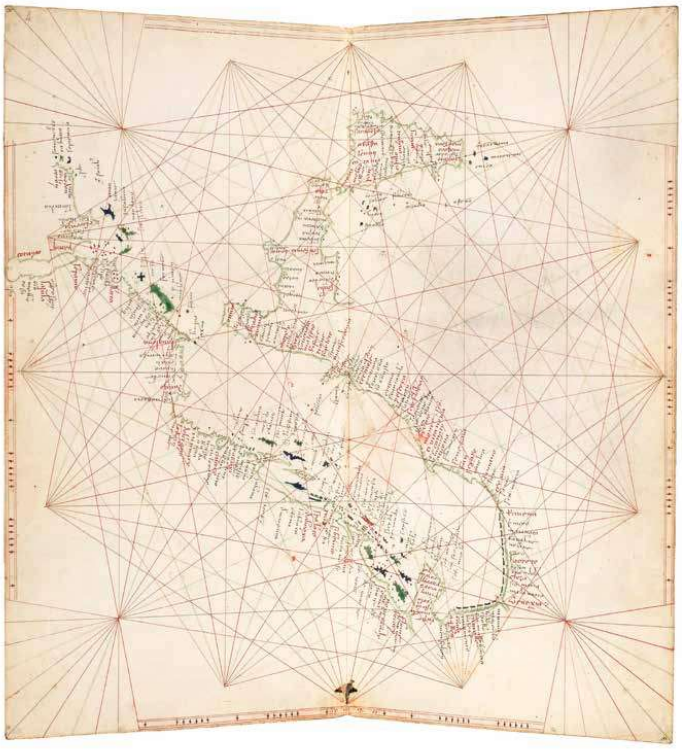


10

CHARTING ITALY AND THE ADRIATIC

Portolan (nautical) charts of the Mediterranean were an essential possession for any serious medieval merchant or pilot, and many came in richly decorated atlases such as this one, known as the Douce Atlas, containing six charts made in Venice in the fifteenth century. The chart showing Italy and the Adriatic features typical rhumb lines (which cross meridians at the same angle) enabling pilots to navigate by dead reckoning, with place names at right angles to the coast, and no description of the interior. Such atlases focus on maritime and commercial matters, although it is unclear how many of those that have survived were used at sea. Most were probably commissioned to reflect their owners' wealth and social status.

Italy and the Adriatic, portolan chart, fifteenth century. MS Douce 390, fols 5v–6

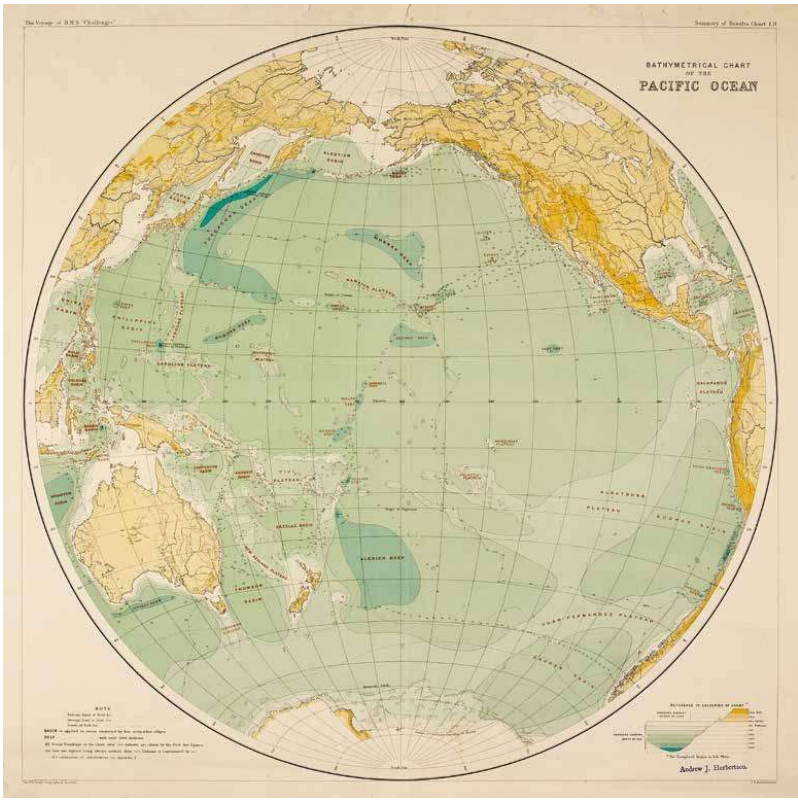


35

HMS *CHALLENGER*'S MAP OF THE PACIFIC OCEAN

By the nineteenth century steam-driven maritime exploration was directed by scientific interest in what lay beneath the oceans. Bathymetric maps of the ocean floor like this one of the Pacific were made during the HMS *Challenger* expedition (1862–6). It covered 110,867km, stopping at 362 stations and taking more than 100 bottom dredges of the ocean floor. In March 1875 the crew recorded a sounding of 4,475 fathoms (8,184m) in the southwest Pacific. Subsequently recorded as Challenger Deep, it remains the deepest known point on the Earth's seabed. The *Challenger*'s methods for the collection and collation of bathymetric data laid the foundation for modern oceanography.

Bathymetric map of the Pacific Ocean showing the route of HMS *Challenger*, [1914], J1 (181)



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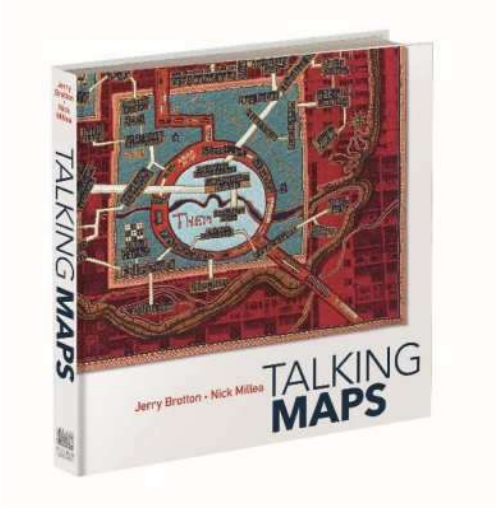
Talking Maps

Jerry Brotton and Nick Millea

July 2019



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SALES POINTS

- This new approach to maps shows how maps and stories have always been intimately entwined.
- Includes rare treasures such as al-Sharīf al-Idrīsī's twelfth-century world map, C.S. Lewis's map of Narnia, J.R.R. Tolkien's cosmology of Middle-earth and Grayson Perry's twenty-first century tapestry map.
- Reveals how maps are not just tools for navigation but also worldly proposals that help us to understand *who* we are by describing *where* we are.

Every map tells a story. Some provide a narrative for travellers, explorers and surveyors or offer a visual account of changes to people's lives, places and spaces, while others tell imaginary tales, transporting us to fictional worlds created by writers and artists. In turn, maps generate more stories, taking users on new journeys in search of knowledge and adventure.

Drawing on the Bodleian Library's outstanding map collection and covering almost a thousand years, *Talking Maps* takes a new approach to map-making by showing how maps and stories have always been intimately entwined. Including such rare treasures as a unique map of the Mediterranean from the eleventh-century Arabic *Book of Curiosities*, al-Sharīf al-Idrīsī's twelfth-century world map, C.S. Lewis's map of Narnia, J.R.R. Tolkien's cosmology of Middle-earth and Grayson Perry's twenty-first-century tapestry map, this fascinating book analyses maps as objects that enable us to cross sea and land; as windows into alternative and imaginary worlds; as guides to reaching the afterlife; as tools to manage cities, nations, even empires; as images of environmental change; and as digitized visions of the global future.

By telling the stories behind the artefacts and those generated by them, *Talking Maps* reveals how each map is not just a tool for navigation but also a worldly proposal that helps us to understand *who* we are by describing *where* we are.

Jerry Brotton is Professor of Renaissance Studies at Queen Mary University of London. **Nick Millea** is the Map Librarian at the Bodleian Library.

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July 2019 – March 2020

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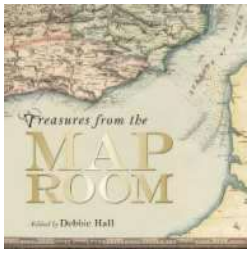

Treasures from the Map Room: A Journey through the Bodleian Collections
Edited by Debbie Hall
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Introduction

Stories make maps. Throughout history and across different cultures, oral and written stories have been recounted to map-makers by travellers and sailors, surveyors and artists, even writers and theologians. As map-makers assimilate these narratives, they in turn create their own graphic stories about the places they represent. Stories generate more stories told by those who use maps to navigate across the land or the sea, or even through their imagination. As the spaces being mapped change over time, so do their narratives, and the cycle of mapping starts all over again. Maps are repositories of personal and collective knowledge, beliefs and memories, brought together by their unique ability to combine science with art, space with time, the visual and the written.

Talking Maps is a celebration of these multifaceted dimensions and the layers of stories, conversations and discussions that surround the creation and use of maps. It shows that any map is a communicative act between its maker and user that requires people to discuss and agree on how to use it. A map is a site and an occasion around which the stories of its users and makers coalesce in agreeing how the world around them looks. Such consensus can only be reached through debate and dialogue – in other words, by talking about and metaphorically 'listening' to maps. In what follows we question the relatively recent assumption – predominant in the modern Western world – that maps are exclusively visual, objective, scientific objects that offer a transparent spatial graphic of the worlds they represent. Instead, throughout the course of this book we tell a somewhat different story: over time and in different communities, maps have been shaped by oral and written narratives and testimonies; they are subjective reflections of their makers' beliefs and prejudices; all maps are to some extent artistic artefacts that offer multidimensional and often contradictory representations of space and place.

As its title suggests, *Talking Maps* proposes a series of conversations and discussions with and about maps. This approach revises recent critical approaches to the history of map-making. Cartography – or the science of map-making – only entered the European languages in the early nineteenth century, from which point map-making was given a scientific and objective veneer of authority, claiming there was a 'correct' and 'truthful' method of mapping the world, that saw it become a key tool in politics, commerce, empire and warfare. In the late twentieth century geographers and historians reacted to this development by criticizing how maps had become instruments of ideology in the service of states and governments. Maps such as those produced by European nations and colonies 'spoke' the graphic language of power and authority. These were not 'talking' maps that proposed a conversation or discussion about what they depicted, but univocal maps expressing command and demanding acquiescence.

This approach proved a powerful corrective to the prevailing assumption that maps were a transparent representation of the world, and it is part of the story we tell in *Talking Maps*. However, such a belief also went too far in assuming that such maps – and their makers – were baleful conspirators in implementing political ideologies. It also failed to take into account how communities received, responded to and acted on maps. Any map's message can be misunderstood or appropriated and used in support of a contrary or alternative belief. Later nineteenth-century thematic maps could show the distribution of poverty in Victorian London in an attempt to disprove its increase, yet ended up inspiring policy reform on social benefits. In contrast, maps commissioned by liberal reformers depicting the presence of Jewish communities in the city's East End were appropriated by right-wing political groups to justify

Fig. 1 World map in Claudius Ptolemy, *Geographia*, woodcut, 1486. Arch. B b.19, fol. Map 1.

2

Administration

There can be no better place from which to embark upon the story of mapping the nation than by concentrating on the Gough map of Great Britain, the earliest surviving geographically recognizable map of an individual country.

King Edward I (r. 1271–1307) appears to have featured prominently in the map's genesis, but the manuscript that survives post-dates Edward's reign by around a century. Nevertheless, the monarch's influence remains written all over its surface. The map's subject matter appears to be geopolitical, with a clear focus on the accurate location of settlements. It has full cartographic references to places and regions that are key to governing the realm, which in themselves represent a paradigm shift from earlier cartographic representations of the country. The Gough map is showing us 'real' geography. It tells us where places *really* are. Earlier surviving maps are not so attached to these levels of locational precision. Instead they were largely created and prepared to a theological agenda, as can be seen in the work of St Albans-based Matthew Paris, who made four maps showing the whole of the island of Britain in the mid-thirteenth century. Another crucial change of direction is the physical nature of the artefact itself. The Gough map is the earliest known exemplar of any map in Britain produced as a separate sheet, rather than as a page in a book or designed to be hung on a wall for display purposes. The quality of the parchment, however, is poor, implying that the map was not created for a high-status client, nor was it expected to be prominently displayed, or indeed to last. Yet more than 700 years after its contents were first drawn, this enigmatic and complex map continues to tell us the story it was designed to impart, and has the seemingly unlimited capacity to lead us along as yet uncharted journeys to uncover the practical requirements which brought such a critical and challenging map into existence in the first place.[1]

Freed from the shackles of a Christian narrative, the Gough map's purpose was not to visualize a pathway through life in accordance with the teachings of the church, but to lead the way in a completely new cartographic direction which remains current in the twenty-first century, where geographical veracity and the primacy of relative position are foremost in the map-maker's mind.

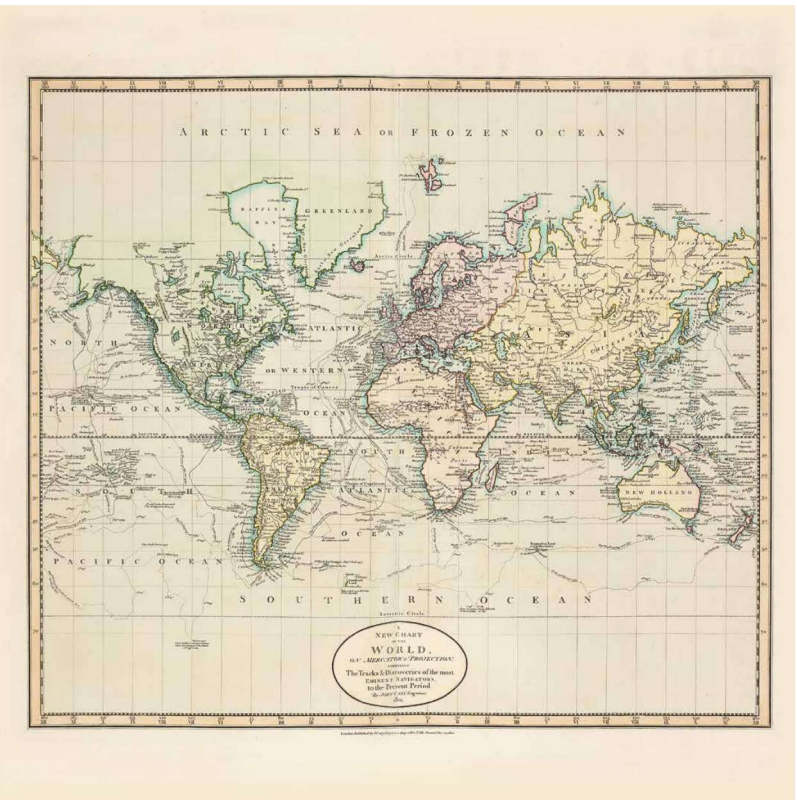
Nevertheless, more traditional map-making styles have not been entirely abandoned, as exemplified by the filling of empty spaces, as frequently seen on *mappae mundi*, where blank areas of the world were populated with monstrous people and creatures. This, to a small extent, is replicated on the Gough map, as north-west Scotland provides a home for both a deer and a wolf, the only land-based animals to be included on the manuscript, although these lack the demonic monstrosity found on *mappae mundi*.

Key questions remain, however. Who made this map? What was their background? Was it ecclesiastical or secular? Why was it made? And for whom? Clues to answering some of these questions might be found in a close examination of some of the places depicted on the map, as well as the routes between them.

How the Map was Made

The Gough map measures 116 cm × 55 cm, and is drawn on the hide of a sheep and a lamb. Immediately striking

opposite and pp. 40–41 Fig. 15 The Gough map, c.1390–1410. MS. Gough Geo. Top. 16.



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The World on the Move

The story of digital map-making has its roots in the long history of globalization that stretches back as far as the fifteenth century. As a process, globalization has not only changed the way the world works, but also the way we, as those affecting and being affected by it, see and perceive the planet. Graphic displays have a long history of translating the complexity of our environment into understandable visual representation, and maps provide the most fundamental image of the spaces in which we live.

Projections are a key element of mapping techniques. They continue to have a considerable impact on our understanding of the world, especially (but not only) in a global perspective, where different methods of projection can result in greatly varying representations of land areas. As a result of the compromises that are necessary to display a three-dimensional space on a flat surface, maps will always remain subject to interpretation and debate. But the power of maps lies in the imperfect nature of a projection. Maps create images of a space that we cannot capture with the human eye (not even an astronaut can see all continents at one time in the enviable view from space), and in doing so they shape our concepts of the planet and its spaces.

The Influence of Projections

The links between the process of globalization and its graphic representations are important in explaining how the world itself and our image of the world have changed in the last 500 years, and what crucial role cartography has played in this context. They are also relevant in understanding the most recent trends in cartography and data visualization, which are closely linked to an increasingly human-influenced planet and interconnected world. Cartographic innovations such as the Mercator projection (1569) – which solved the problem of how to create a two-dimensional map that could accurately reflect the curvature of the Earth's surface (see chapter 1) – helped seamen, tradesmen and colonists to increase global connectivity through mapping a network of transnational trade and exchange (fig. 89). As a result, humans have become the determining factor that shapes and changes not only the social, but also the physical, functioning of the world in our current geological age of the Anthropocene.

Beyond enabling a period of expansive European exploration across the globe, these developments in early modern cartography have left another lasting legacy. Five hundred years later, Mercator's map projection is ubiquitous in online mapping environments. All commercial mapping providers, including Google and Apple, use an adapted web-Mercator projection that is most practical to use for navigational purposes in a local context. But this becomes problematic when their services are used to create thematic maps where the heavy distortion towards the polar regions reinforces this widespread view of the world. In the Mercator projection the areas closest to the poles are shown considerably larger than their real size, so that the northern part of the northern hemisphere dominates world maps that use such a projection. It is an almost political statement to see these regions as much larger, while some of the most populated regions in southern Asia and Africa appear considerably smaller in comparison.

Fig. 89 Mercator projection world map, 1801. Allen I.RO 183.

Bodleian Library Advance Information

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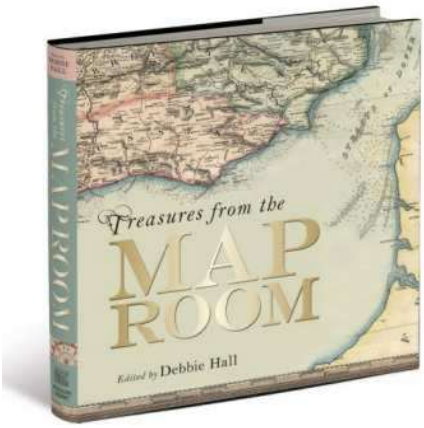

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Size: 270 x 270 mm
BIC codes: HBTP1 Historical maps and atlases; AGC Exhibition catalogues and specific collections

SALES POINTS

- Explores the stories behind seventy-five extraordinary maps.
- As well as the works of famous mapmakers Mercator, Ortelius, Blaeu, Saxton and Speed, the book also includes lesser known but historically significant works.
- Draws on the unique collections in the Bodleian Library.

This book explores the stories behind seventy-five extraordinary maps. It includes unique treasures such as the fourteenth-century Gough Map of Great Britain, exquisite portolan charts made in the fifteenth century, the Selden Map of China – the earliest example of Chinese merchant cartography – and an early world map from the medieval Islamic Book of Curiosities, together with more recent examples of fictional places drawn in the twentieth century, such as C.S. Lewis's own map of Narnia and J.R.R. Tolkien's map of Middle Earth.

As well as the works of famous mapmakers Mercator, Ortelius, Blaeu, Saxton and Speed, the book also includes lesser known but historically significant works: early maps of the Moon, of the transit of Venus, hand-drawn estate plans and early European maps of the New World. There are also some surprising examples: escape maps printed on silk and carried by pilots in the Second World War in case of capture on enemy territory; the first geological survey of the British Isles showing what lies beneath our feet; a sixteenth-century woven tapestry map of Worcestershire; a map plotting outbreaks of cholera and a jigsaw map of India from the 1850s. Behind each of these lies a story, of intrepid surveyors, ambitious navigators, chance finds or military victories. Drawing on the unique collection in the Bodleian Library, these stunning maps range from single cities to the solar system, span the thirteenth to the twenty-first century and cover most of the world.

Debbie Hall is a Senior Library Assistant in the Map Room of the Bodleian Library.

Created 14.06.2016

'The Bodleian Library holds one of the great collections of maps in the world, and *Treasures from the Map Room* is a superb achievement in bringing together the library's greatest cartographic masterpieces in one beautifully illustrated and compellingly written book. … Both playful and profound, this book captures the humanity of maps to tell us not just where we are, but also who we are.'

Jerry Brotton, Professor of Renaissance Studies, Queen Mary University of London, and author of *A History of the World in Twelve Maps*

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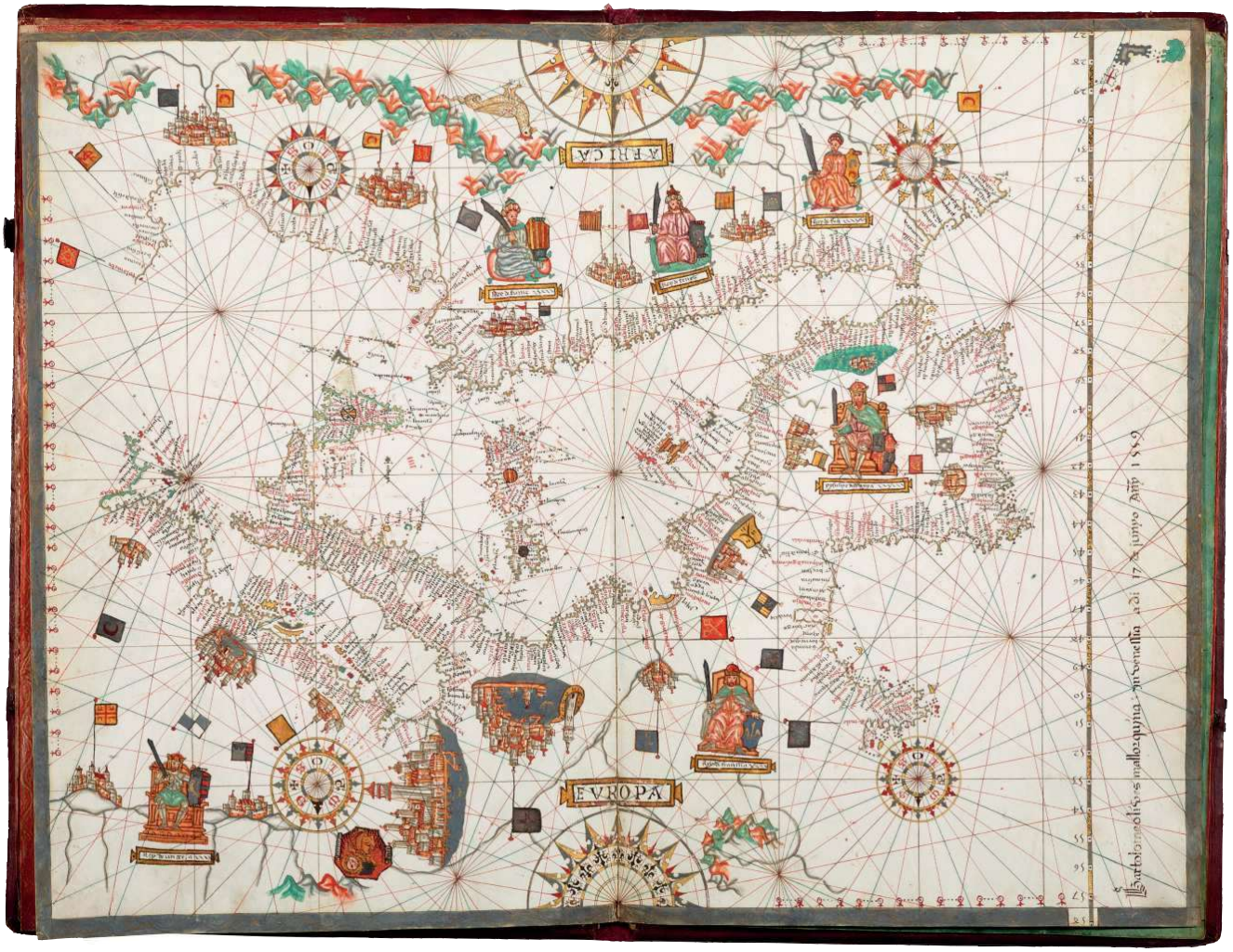
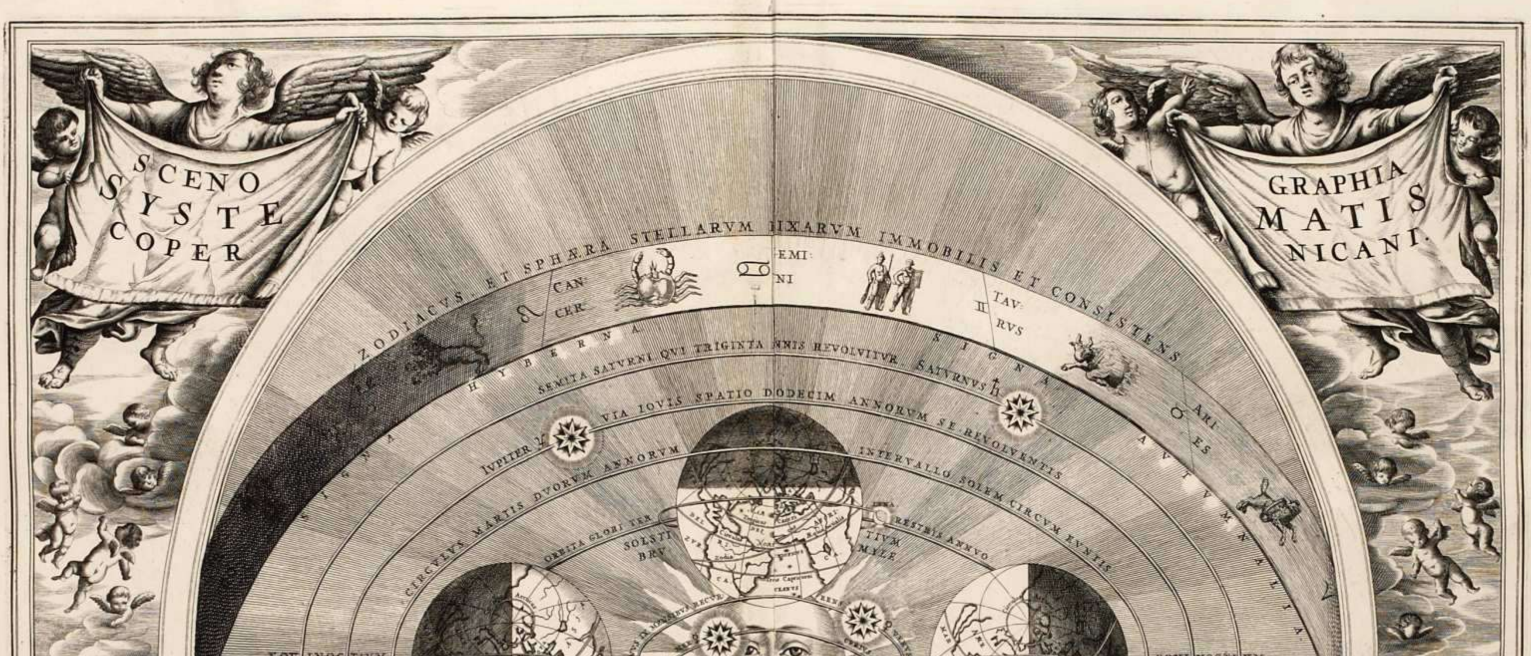


This portolan chart, produced in Venice in 1559, was part of an atlas covering the eastern and southern Atlantic Ocean and the Mediterranean Sea.


SCENO
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SIGNA AVTVMNALIA
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ÆQVINOCTIVM VERNVM
ÆQVINOCTIVM AVTVMNALE
SOLSTITIVM BRVMALE
SOLSTITIVM ÆSTIVVM
MARS
LI BRA
SCOR PIVS
SAGIT TARIVS
CAPRI CORNVS

Florence

Fiorenza dentro da la cerchia antica,
ond'ella toglie ancora e terza e nona,
si stava in pace, sobria e pudica.
Dante, *La Divina Commedia*, 'Paradiso', Canto XV

Dante Alighieri (1265–1321), the Florentine poet known primarily for his *Divine Comedy*, wrote the above verses while exiled at a time of political unrest and living in Ravenna. Dante misses Florence and, longing to see it restored to prosperity, evokes an idealized vision of a city he imagines his ancestors to have experienced. The poet describes a 'peaceful, sober and pure' Florence, protected by its 'ancient city walls' and filled with a sound of church bells.

The city walls and many buildings familiar to Dante can still be seen in the late fifteenth-century bird's-eye view of Florence from the Nuremberg Chronicle, an incunable printed in 1493. Being derived from a Florentine source, Francesco Rosselli's engraving executed *c.* 1482–90, the woodcut is tolerably reliable and depicts quite accurately numerous Florentine landmarks, admired not only by the locals but also famous abroad. Many of the old and still-surviving buildings, such as the Badia with its bell tower, were virtually on Dante's doorstep. Another, more imposing cathedral bell tower was designed by Dante's contemporary, the painter and architect Giotto. In the woodcut it partially overshadows the cathedral's dome, an iconic symbol of Florence constructed by Filippo Brunelleschi between 1420 and 1436. The German text, written by Hartmann Schedel and printed above the woodcut, tells the history of Florence, describes its achievements and lists its great men – among them Dante, Giotto and other brilliant scholars, writers, artists and their patrons.

Giotto's bell tower and Brunelleschi's dome, a masterpiece of Renaissance architecture and a source of Florentine civic pride, can also be seen in a late fifteenth-century illumination from another incunable – a Tuscan translation of Pliny's *Natural History*. The miniature shows the landmarks and the translator of the text, the humanist Cristoforo Landino. The illuminations in this book were commissioned by a banker and patron of art and architecture, Filippo Strozzi (1428–1491), and celebrate his political connections and service to the de facto rulers of Florence, the Medici. The book was printed by Nicolaus Jenson in Venice in 1476 and illuminated in Florence by Gherardo or Monte di Giovanni di Miniato (del Fora) *c.* 1479–83.

Every detail of the form, decoration and contents of this volume reminds us that Florence was the cradle of the Renaissance. Much of what Florentine citizens achieved over the centuries can be attributed to the sense of pride in their civic and family heritage and to their eagerness to contribute to the greatness of both. Filippo Strozzi was one of those men: his commissions still add to the splendour of Florence, such as Palazzo Strozzi or Cappella di Filippo Strozzi in the church of Santa Maria Novella.

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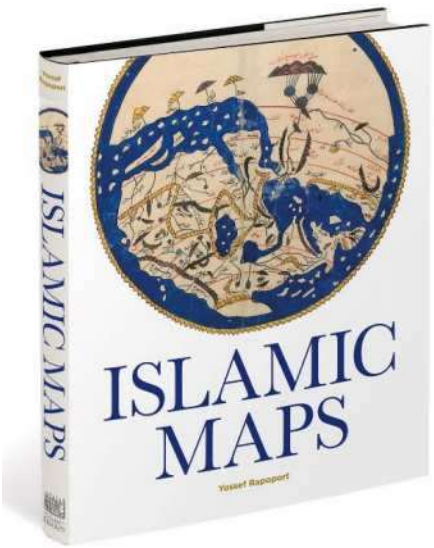
Bodleian Library Advance Information

Islamic Maps

Yossef Rapoport

October 2019



SALES POINTS

- Lavishly illustrated with stunning manuscripts, beautiful instruments and Qibla charts.
- Examines Islamic visual interpretations of the world in their historical context, through the lives of the map-makers themselves.
- Features the story of key Muslim map-makers and the art of Islamic cartography.

Spanning the Islamic world, from ninth-century Baghdad to nineteenth-century Iran, this book tells the story of the key Muslim map-makers and the art of Islamic cartography. Muslims were uniquely placed to explore the edges of the inhabited world and their maps stretched from Isfahan to Palermo, from Istanbul to Cairo and Aden. Over a similar period, Muslim artists developed distinctive styles, often based on geometrical patterns and calligraphy. Map-makers, including al-Khwārazmī and al-Idrīsī, combined novel cartographical techniques with art, science and geographical knowledge. The results could be aesthetically stunning and mathematically sophisticated, politically charged as well as a celebration of human diversity.

Islamic Maps examines Islamic visual interpretations of the world in their historical context, through the lives of the map-makers themselves. What was the purpose of their maps, what choices did they make and what was the argument they were trying to convey? Lavishly illustrated with stunning manuscripts, beautiful instruments and Qibla charts, this book shows how maps constructed by Muslim map-makers capture the many dimensions of Islamic civilisation, providing a window into the worldviews of Islamic societies.

This book is adorned with abundant and exquisite illustrations of maps from the ninth to the seventeenth centuries. Rapoport elegantly categorizes the complicated nature of Islamic maps for his readers and makes them accessible. – **Pınar Emīralīoğlu, Associate Professor, Sam Houston State University**

A beautifully designed, elegantly written guide to the magnificent and mysterious maps from the medieval Islamic world, where every map is a unique mix of science, art, ideology and power. – **Emilie Savage-Smith, FBA, Professor of the History of Islamic Science (retired), University of Oxford**

Yossef Rapoport is a Reader in Islamic history at Queen Mary University of London.

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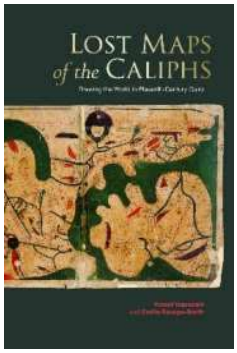

Lost Maps of the Caliphs: Drawing the World in Eleventh-Century Cairo
9781851244911, illus HB £37.50

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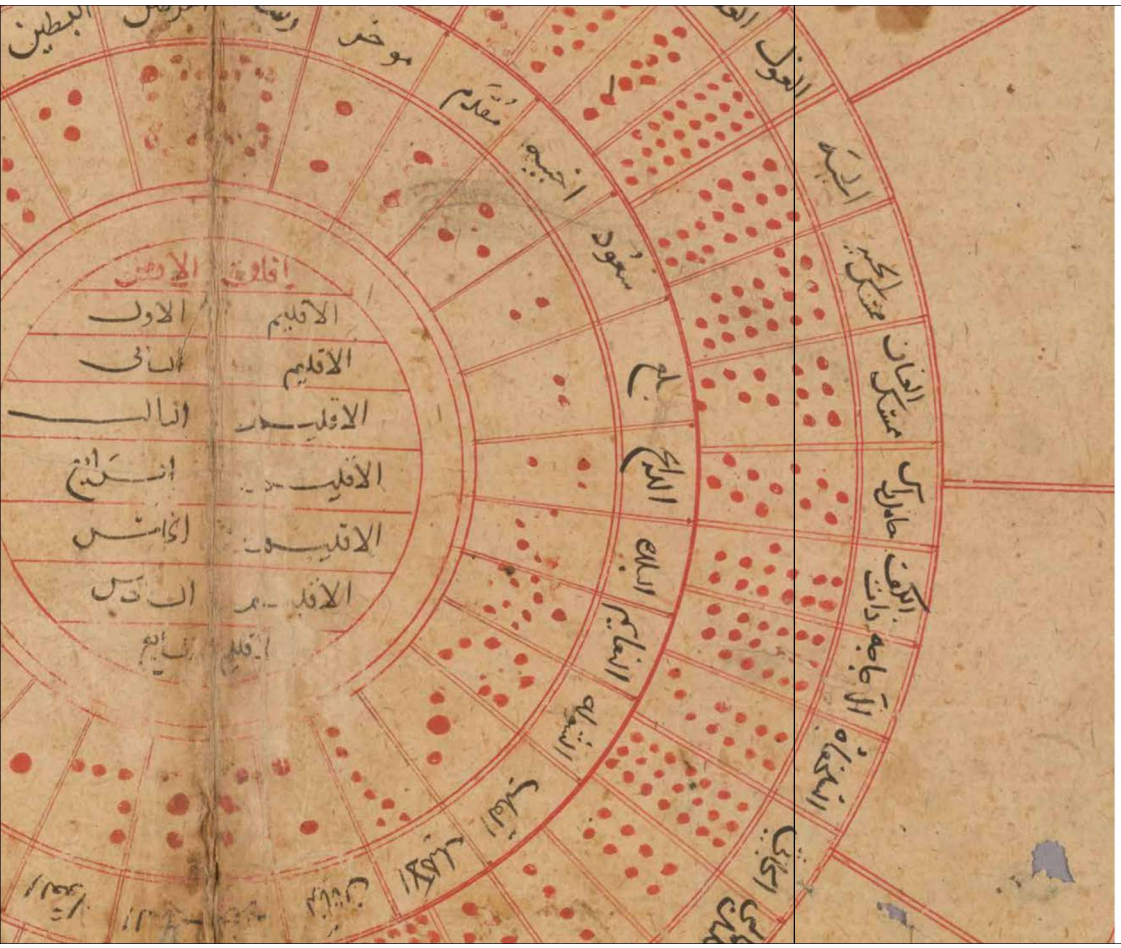

Contents

he turned to the same visual language.

Beyond the abstract geometry, these maps of Syria and Egypt also emphasize the bounded and separate character of these regions. The maps and the regions they depict are bounded by red or black lines at the edges of the map, and by the square form of the page. These maps reinforce what one modern scholar called a regional 'category of belonging'.[4] When al-Iṣṭakhrī was producing his maps in the tenth century, each of the regions of the Islamic world had already established some degree of distinct identity. These identities partly corresponded to the administrative and fiscal boundaries established by the Abbasid empire, but did not depend upon them. For example, the map of Syria and Palestine is followed by a textual description that explains further administrative subdivisions, such as the fiscal districts of Palestine (Filastin), Damascus and Jordan. But the map itself has no trace of these fiscal units. The local Syrian identity that emerges from the map does not hinge on a provincial governor or on tax collections, but appears to derive its integral character from the network of urban centres and trade routes.

While al-Iṣṭakhrī recognizes, bounds and reinforces the distinct identity of Syria and Egypt, he also presents these regions as the building blocks that together constitute the unity of the world of Islam. The regional maps all follow the same uniform geometric design and colour coding, and each map is connected to the regions next to it. The viewer of the map of Syria is made aware, through notations on the edges of the page, that they can continue to plan a mental journey through the lands of Islam by turning to the maps of the neighbouring regions elsewhere in the treatise, such as those of Iraq and the Arabian Peninsula. But there are no political divisions here, no indication of local potentates or autonomous sultans and no images of enthroned kings such as are found in later European portolan charts. The maps do not even give special attention to Baghdad as the capital of the Abbasid empire and the seat of the caliphs. The focus in al-Iṣṭakhrī's maps is on trade routes, and the Islamic world is envisaged as a chain of cities, a network of communication rather than a collection of rulers.

A World of Islam

Perhaps the greatest achievement of al-Iṣṭakhrī's maps is that they *created* the world of Islam as much as they reflected it. With the rapid fragmentation of the Abbasid empire, emergent Muslim communities were no longer connected to each other through a centralized political order. Instead, the unity of Islam was now preserved through the trade routes that connected urban communities

Map of the Arabian Peninsula from al-Iṣṭakhrī's *Book of Routes and Kingdoms*, copied 1272. South is at the top. Bodleian Library, University of Oxford, MS. Ouseley 373, fol. 4.

The world map of al-Sharīf al-Idrīsī, from *Entertainment for He who Longs to Travel the World*, copied 1553. South is at the top. Bodleian Library, University of Oxford, MS. Pococke 375, fols 3–4.

THE MOST ICONIC AND widely reproduced map from medieval Islam is the world map that accompanies the *Entertainment for He Who Longs to Travel the World*, a geographical treatise by al-Sharīf al-Idrīsī, who worked at the court of Roger II, the Norman king of Sicily. The map shown here is found in a manuscript made in North Africa in the sixteenth century, one of two copies of the *Entertainment* held in the Bodleian Library (fig. 31). In its layout, this is not substantively different from the world map of al-Iṣṭakhrī. It is a circular representation of one hemisphere surrounded by the Encompassing Sea, with south at the top, and an enlarged African continent that extends eastwards in parallel to the Asian land mass. But, while al-Iṣṭakhrī's world map was an abstract diagram of straight lines with boxed boundaries for provinces and regions, the curves of the coastlines on this map are much softer and more refined. There are also more details, especially in the lands beyond Islam. The shape of Europe, which al-Iṣṭakhrī presented as a perfect triangle, is here much more precise than ever before, with the Italian and Balkan peninsulas well defined. There are also seven red clime lines, starting from the equator and descending towards the north, indicating the Ptolemaic latitudinal divisions of the inhabited world. Otherwise, the world here is an integral whole, with the labels guiding the viewer without imposing political or ethnic divisions on the physical space. Carefully executed mountain ranges and rivers dominate the map, which is reinforced by a palette of colours that culminates in the deep blue of the sea.

Al-Idrīsī is nowadays somewhat of a celebrity. Not only does this circular world map adorn many an introduction to Islamic history, but his own biography has become a symbol of European–Islamic scientific collaboration. Al-Idrīsī is the main character in *A Sultan in Palermo*, a widely acclaimed historical novel by Tariq Ali, a work of fiction with direct topical references to the place of Islam in contemporary European societies.[1] A widely used geographic information system (GIS) for the modelling and analysis of complex geographical data is named IDRISI, in honour of his achievements. His textual description of Europe has been translated several times into French under the title *The First Geography of the West*; here, too, reference to the religious identity of the author carries an implicit topical message.[2] And al-Idrīsī is also the only representative of the Islamic map-making tradition in the recent *History of the World in Twelve Maps* by Jerry Brotton, who views al-Idrīsī as a striking example of east–west exchange, ultimately doomed but nonetheless instructive.[3]

Political undertones aside, the accolades heaped on al-Idrīsī are absolutely

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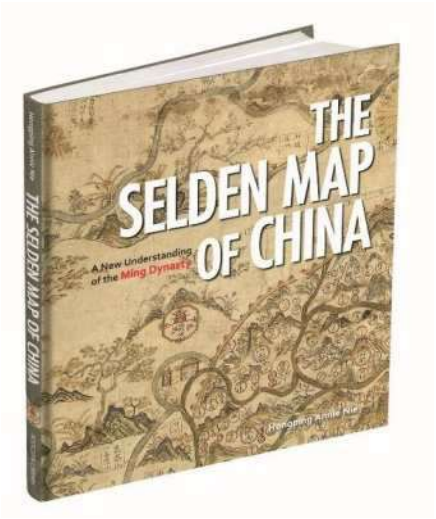
The Selden Map of China

A New Understanding of the Ming Dynasty

Hongping Annie Nie

June 2019



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SALES POINTS

- Reveals a new understanding of China's relationship with the sea and the wider world.
- Describes the historical background of the era in which the Selden map was used.
- Includes an analysis of the skills and techniques involved in Chinese map-making.

Dating from the seventeenth century at the height of the Ming Dynasty, the Selden Map of China reveals a country very different from popular conceptions of the time, looking not inward to the Asian landmass but outward to the sea. Painted in multiple colours on three pieces of Mitsumata paper, this beautifully decorative map of China was discovered to be a seafaring chart showing Ming Dynasty trade routes. It is the earliest surviving example of Chinese merchant cartography and is evidence that Ming China was outward-looking, capitalistic and vibrant.

Exploring the commercial aims of the Ming Dynasty, the port city of Quanzhou and its connections with the voyages of the early traveller Zheng He, this book describes the historical background of the era in which the map was used. It also includes an analysis of the skills and techniques involved in Chinese map-making and the significance of the compass bearings, scale and ratios found on the map, all of which combine to represent a breakthrough in cartographic techniques.

The enthralling story revealed by this extraordinary artefact is central to an understanding of the long history of China's relationship with the sea and with the wider world.

Hongping Annie Nie is a Teaching and Research Associate of the University of Oxford China Centre and a Senior Member of St Anthony's College, Oxford.

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25 *Kraak* porcelain from China, possibly traded by the Dutch East India Company, c.1600–1624

MING DYNASTY MARITIME TRADE

The Ming dynasty, which witnessed China's second commercial revolution, was a rather open, dynamic and outward-looking period of Chinese history. Despite the Ming court's ban on maritime trade with foreign countries, overseas trade flourished as never before during this period. The newly discovered Selden map of China reveals Ming China's maritime commercial activities in various coastal ports between the Pacific and the Indian oceans, east to Japan, Korea, via the Philippines and the South Sea Islands, and west to the Arabian Peninsula and as far as the east coast of Africa. Chinese merchants could be seen everywhere.

COMMODITIES, MARITIME NAVIGATION AND SHIPBUILDING TECHNOLOGY

In the reign of the first Ming ruler Emperor Hongwu (1368–1398) China's autocratic, imperial power system was at its height. However, compared to previous dynasties, economic development in the Ming Empire was unprecedented. The Ming dynasty was the pinnacle of Chinese culture with regard to technology, commerce, art and literature.

Emperor Hongwu was born into a peasant family and attached great importance to agriculture. When he ascended to the throne, he immediately resumed the agricultural production that had been destroyed in the late Yuan dynasty. As society stabilized, agricultural production increased, creating considerable surpluses. Infrastructure and communication improved under Emperor Hongwu; private business and trade were also promoted. New markets burgeoned along the route of the messengers of the imperial court, where surplus agricultural commodities were sold in great quantity, ushering in the Ming dynasty's commercial revolution.[21]

China's financial strength and power continued to grow during the Yongle era (1402–24). Emperor Yongle is universally regarded as the Ming dynasty's 'second founding emperor of China', because he

26 A marketplace in prosperous Nanjing. The signs include 'complete goods from the Eastern and Western seas' and 'exchange of money'. Silk scroll of the later Ming period.

27 A Fujian 'Fu' ship of the seventeenth century

reversed many of his father's policies, including those that suppressed the gentry and merchants. Yongle moved his capital from Nanjing to Beijing; in 1403 he built a new city of Beijing, which included the Imperial City and the Forbidden City, expanding the city by four and a half square miles. Once the capital had been moved to the north, the most pressing task was to transport goods to Beijing. Yongle ordered the reopening of the Grand Canal to connect the north and south inland waters. Many important ports sprang up along its banks. Ming dynasty trade became increasingly prosperous as more and more people engaged in commerce. Compared to the first commercial revolution in the Song dynasty, in the second the market economy was broader and economic growth more diversified, providing great resources and capital for maritime trade.[22]

The greatest concentration of markets was in the Yangtze River basin, coastal Fujian and Guangdong, and around Beijing. There was a sharp decline in land ownership, since many people no longer depended on agriculture for their livelihood. Output of cotton increased substantially, with each household growing and processing the crop, and manufacturing cotton goods. The textile industry in both town and country expanded, especially in the region south of the Yangtze, which in time became the centre of the country's cotton-textile production. Many cities and towns, especially along the lower reaches of the Yangtze and Fujian, began to produce special handicraft products, such as various kinds of woven silk, different weights of

paper, and unique earthenware and porcelain. Of the last of these products, the extraordinarily fine blue-and-white porcelain of Jingdezhen and the white porcelain of Dehua in Fujian were sold all over the world.

Maritime navigation and shipbuilding in the Ming dynasty built on the achievements of the Tang, Song and Yuan dynasties and were extremely advanced. The large-scale shipbuilding industry at the beginning of the era was state-run. There were different kinds of ships, including big ocean-faring vessels, warships that fought battles at sea or on rivers, light grain-transporting ships, and fast river vessels. The foremost state-run shipyard in the early Ming dynasty was the Longjiang facility in Nanjing,

A NEW UNDERSTANDING OF THE MING DYNASTY

Maritime trade during the Ming dynasty brought about a collision between East and West. The social, economic and cultural impact of this on the dynasty should not be underestimated. The trade shaped Ming Chinese ideas, lifestyles, political and economic structures, and demographics. It also changed the Western world, contributing to the formation of the global economic system.

The rediscovery of the Selden map has overturned hitherto popular misconceptions about the Ming dynasty and urges us to see China in a very different light. Ming China has often been regarded as a conservative and isolated country. However, the Selden map reveals a relatively open, lively and diverse historical period. It draws our attention to maritime trade in Ming China, China's relationship with other countries at the time, and the social and cultural transformation of Ming society as a whole.

31 A Chinese compass originally kept with the Selden map of China, c.1650

VALUES, CONSUMPTION, CULTURE

In traditional Chinese society, commerce was insignificant. The social position of merchants was seen as being below that of scholars, farmers and craftsmen. Indeed, they were even suppressed and discriminated against by both the government and society. From the middle of the Ming dynasty the development of commerce and trade brought about a change in social attitudes towards the status of merchants, who gradually rose to occupy a position just below that of scholars. Some people even consider that merchants enjoyed a higher social status. The increasing contact between merchants and literati broke down the barriers between the two groups. Some scholars took on a dual identity of merchant and member of the literati, or abandoned the latter identity altogether; indeed this became a main feature of Ming society. By the late Ming dynasty, a gentry class had begun to emerge, with more and more members of the cultural elite participating in local activities, such as donating to Buddhist temples.[51]

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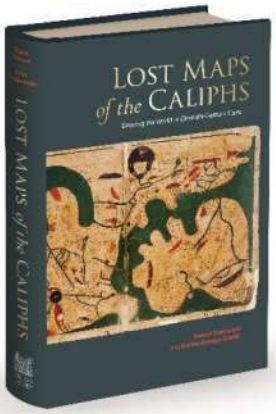
Lost Maps of the Caliphs

Drawing the World in Eleventh-Century Cairo

Yossef Rapoport & Emilie Savage-Smith

February 2019



SALES POINTS

- Examination of the enigmatic *The Book of Curiosities*; a remarkable medieval manuscript that only surfaced in 2000.
- The first general overview of *The Book of Curiosities* and the unique insight it offers into medieval Islamic thought.
- Re-evaluates the development of astrology, geography and cartography in the first four centuries of Islam.

About a millennium ago, in Cairo, someone completed a large and richly illustrated book. In the course of thirty-five chapters, our unknown author guided the reader on a journey from the outermost cosmos and planets to Earth and its lands, islands, features and inhabitants. This treatise, known as *The Book of Curiosities*, was unknown to modern scholars until a remarkable manuscript copy surfaced in 2000.

Lost Maps of the Caliphs provides the first general overview of *The Book of Curiosities* and the unique insight it offers into medieval Islamic thought. Opening with an account of the remarkable discovery of the manuscript and its purchase by the Bodleian Library, the authors use *The Book of Curiosities* to re-evaluate the development of astrology, geography and cartography in the first four centuries of Islam. Early astronomical 'maps' and drawings demonstrate the medieval understanding of the structure of the cosmos and illustrate the pervasive assumption that almost any visible celestial event had an effect upon life on Earth. *Lost Maps of the Caliphs* also reconsiders the history of global communication networks at the turn of the previous millennium.

Not only is *The Book of Curiosities* one of the greatest achievements of medieval map-making, it is also a remarkable contribution to the story of Islamic civilization.

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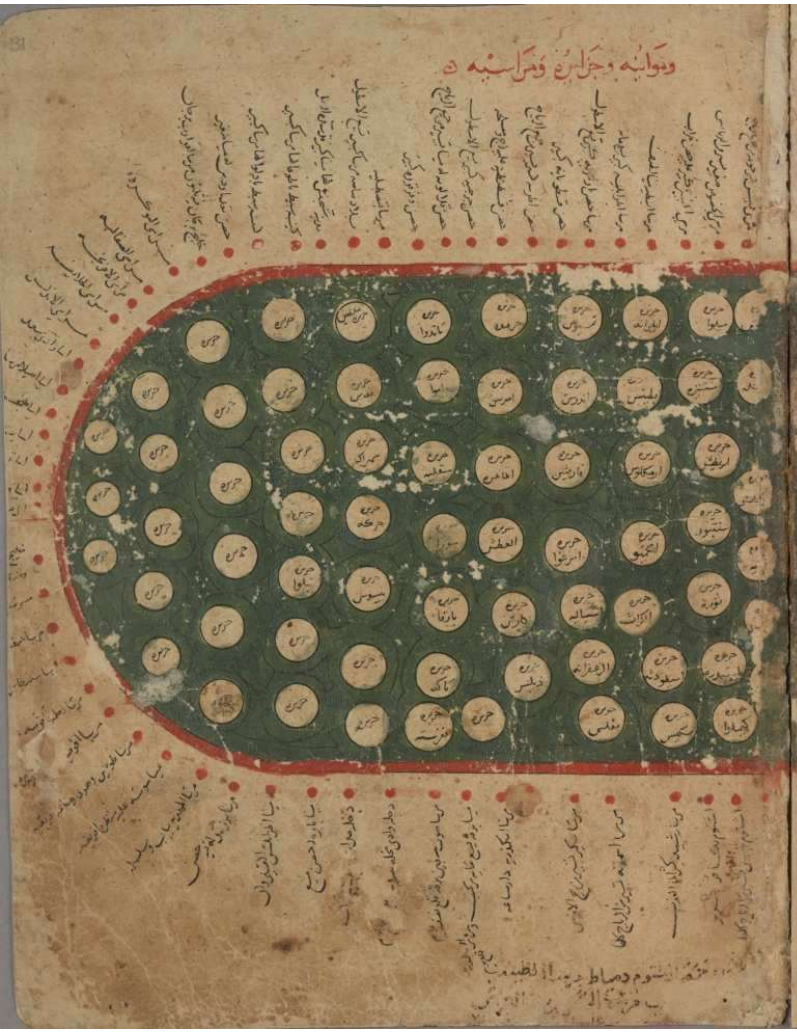

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