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JUNE 2020 No.161





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Front cover G.W. Schimper, detail of manuscript map of 'Kolla Noari' in western Ethiopia. © The British Library Board, add. MS 28506 f.16.



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A LETTER FROM THE CHAIRMAN

Hans Kok

No Miami Map Fair, no London Map Fair, no IMCoS June weekend, the IMCoS Scotland event cancelled, and the Sydney International Conference on ice for the time being! Cartographic misery galore, it seems. Zero turnover for the dealers and organising institutions, no fun for the viewers and collectors. The real worries, however, are for the Covid-19 patients, their treatment, their relatives; for hospital staff, and those taking care of our elderly citizens. No protective gloves for handling our maps? No matter, we can always wait until things get better, but those on the frontline cannot. What about policemen, the staff replenishing the shelves in our supermarkets? The list may be continued, seemingly without end. As map collectors, we know from the thematic maps which showed where cholera was rampant in London in the nineteenth century that this misery will not last forever. While we have no personal cure for the Corona crisis, a measure of optimism beats wallowing in pessimism, as some are apt to do.

Let us prepare for better times and plan for new maps to hunt down when it will be possible again. Maybe it's the perfect time to go through our collection, administer to all the maps we had planned to attend to but never did. Select the ones that we will take to a restorer when the time is there again. Let us read up in books and catalogues on what we always wanted to find out about but never had the time, or find the atlas from where our map came from, compare it to other states and see the differences. Contact other people for advice and information. Maybe write an article on something you know about and others do not. List the maps in your collection and identify the obvious one that you still lack. Try out your school Latin on the map's cartouche or wonder why a Mercator projection is so useful for navigation at sea. Discover why it took 250 years for Australia's east coast to be surveyed while the west coast was known already? How came Frislanda on the map south of Iceland and why did California start off as a peninsula, convert to an island with such different coastlines in its north and then return to being a peninsula again? Why was Hokkaido so misrepresented in Japan? Why did Teluk Tomini in Sulawesi/Indonesia appear so late on a map? Who said the source of the Nile is in the Mountains of the Moon and why was the Niger shown running all the way to the west for so long? Why is there a St Helena in the Atlantic Ocean and a phantom St Helena Nova depicted at exactly the same latitude? Why was Rockall, a miserly rocky finger sticking up out of the ocean to the northwest of Scotland, already on Ortelius's maps yet hardly anybody today knows that it exists? And who talked about the Sea of the West in America?

I am getting carried away; more importantly stay well, help a neighbour in need and let's meet again, some sunny day!

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EDITORIAL

Ljiljana Ortolja-Baird

Puzzles – Sudoku, crosswords, jigsaws, anagrams, trivia – have long been stock items in our rainy-day, long-journey entertainment arsenal, and lockdown has certainly proved to be one such long journey. The internet is bursting with welcome distractions. One which has particularly caught my eye is a collection of map jigsaw puzzles that come courtesy of an online post by Daniel Crouch Rare Books: *The first jigsaw puzzles were maps...* The online digital jigsaw puzzles continue the tradition of dissected maps which first appeared in the eighteenth century, sold as an entertaining aid for teaching geography while providing another commercial outlet for mapmakers. Hand-coloured sheet maps were pasted on thin mahogany boards and the interlocking shapes, which followed the political boundaries, were cut using a marquetry saw. John Spilsbury, who advertised himself as an ‘engraver and map dissector in wood’, is often credited with being the first to introduce this pedagogical novelty, however, it is the French governess and author of *Magasin des Enfants*, Mme Le Prince de Beaumont who mentioned ‘carte de géographie en bois’ in an advertisement for her exclusive school in Henrietta Street, Cavendish Square, London some years before Spilsbury created his. Botanical artist and bluestocking Mary Delaney wrote to her sister on 15 December 1759: ‘I wish I could tell how to get a set of Madame Beaumont’s wooden maps. I think those of England, Scotland, and Ireland come to two guineas’. A princely sum then, and only for children of affluent families such as those under the charge of the Royal Governess Lady Charlotte Finch who, following the advice of Mme Beaumont, introduced dissected maps to fourteen of George III’s and Queen Charlotte’s fifteen children.

By contrast to the geographical puzzles in Lady Finch’s cabinet, those online are free for your entertainment and instruction. The large-scale maps offer the opportunity to get to know in detail the cities of St Petersburg, Rome, Paris, and London as they were in the eighteenth century, while the pictorial map selection (easier to accomplish) includes an early twentieth-century culinary map of Italy, Harry Beck’s Tube map, Fred Rose’s serio-comic map of Europe in 1899, and Gill’s celebrated map ‘Time and Tide’ but with a twist, it is a Spanish edition.

There are world maps by De Wit and De Jode, Sylvanus’s heart-shaped projection printed in red and black and, to thoroughly test your knowledge, visual-spatial reasoning and tenacity, you could try assembling Teixeira’s monumental 1604 planisphere ‘Magna Orbis Terrarum Nove’ dissembled into 300 pieces. And all neatly contained on your screen there is no chance of pieces going missing.

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GEORG WILHELM SCHIMPER (1804–1878)

Maps and cross-sectional profiles of Tigray, the Semen Mountains and the Märäb and Täkkäze regions of Ethiopia

Dorothea McEwan

Renowned German botanist and explorer Georg Wilhelm Schimper lived and worked for forty years in Ethiopia between 1837 and 1878, mainly in Tigray, the Semen Mountains and the Märäb and Täkkäze regions of what is now known as the Ethiopian highlands and Eritrea. Schimper is universally considered to be the single greatest contributor to the knowledge of the flora and fauna of the Horn of Africa. The great majority of plants of Ethiopia had been unknown in Europe before Schimper's visit. He went on many expeditions to collect plants which he then dried and sent as specimens to European herbaria. They still form a substantial part of the collections of major research centres in Europe such as the Jardin des Plantes in Paris, the Botanisches Museum in Berlin, and the Royal Botanical Society at Kew in London and many others.¹ The Kew Herbarium catalogue alone reveals some 2,400 *Schimperi* or *Schimperia* entries for plants he classified and described while in Ethiopia and countries he visited in the Middle East.

In order to conduct his botanical research he criss-crossed northern Ethiopia and wrote a detailed observation of the land and people, plants and soil conditions. These records are contained in two manuscript books: *Betrachtung* (Observations) and *Karten* (Maps).² They were acquired by the British Library for £50.00 from Schimper in 1870³ after General Sir Robert Napier's military campaign to liberate the European and Indian hostages held by Emperor Tewodros II.⁴

The second of the two manuscripts, *Maps*, is a collection of maps, cross-sectional and topographical profiles. These profiles pose a question which are addressed here. Were they sketches or field notes for use later in drawing the maps? This might have been Schimper's intention as we find red lines in all the maps with numbers corresponding to the separately drawn, and equally numbered, cross-sectional

profiles. If not, were they additional drawings to depict the elevation of some sections of the terrain?

Georg Wilhelm Schimper

Schimper was born in 1804 near Nuremberg, Germany. He came from a family of scientists: his father was a teacher of engineering and mathematics, his elder brother Karl Friedrich Schimper (1803–1867) developed glacial theories about the ice age, and his cousin Wilhelm Philipp Schimper (1808–1880), a celebrated expert on mosses and bryophytes, became the director of the Strasbourg Natural History Museum. With little formal education, Georg Wilhelm Schimper served an apprenticeship as a wood turner, joined the Badisches Infanterie Regiment, and then followed his brother Karl Friedrich to Munich, who was enrolled at the university studying Natural Sciences. Although Schimper never completed a course of study he did enjoy the company of some of the brightest students of his generation. They included Louis Agassiz (1807–1873), paleontologist, geologist and a prominent innovator in the study of the earth's natural history, and Alexander Braun (1805–1877), the German botanist and later Director of the Berlin Botanical Garden.

On 25 January 1831 Schimper embarked on his first botanical expedition to the south of France and Algiers in the service of the Botanischer Reiseverein of Esslingen, a travel association established to promote scientific investigation through the collection and distribution of exsiccatae or dried plants. The association raised funds for the scientists from subscribers to the project as well as from the liberal patronage of Wilhelm I, King of Württemberg (1781–1864). The association would then sell on multiple specimens collected to herbaria all over Europe. After expeditions to Greece, the Ionian Islands and the Arabian Peninsula, again for the Botanischer Reiseverein, Schimper was made an

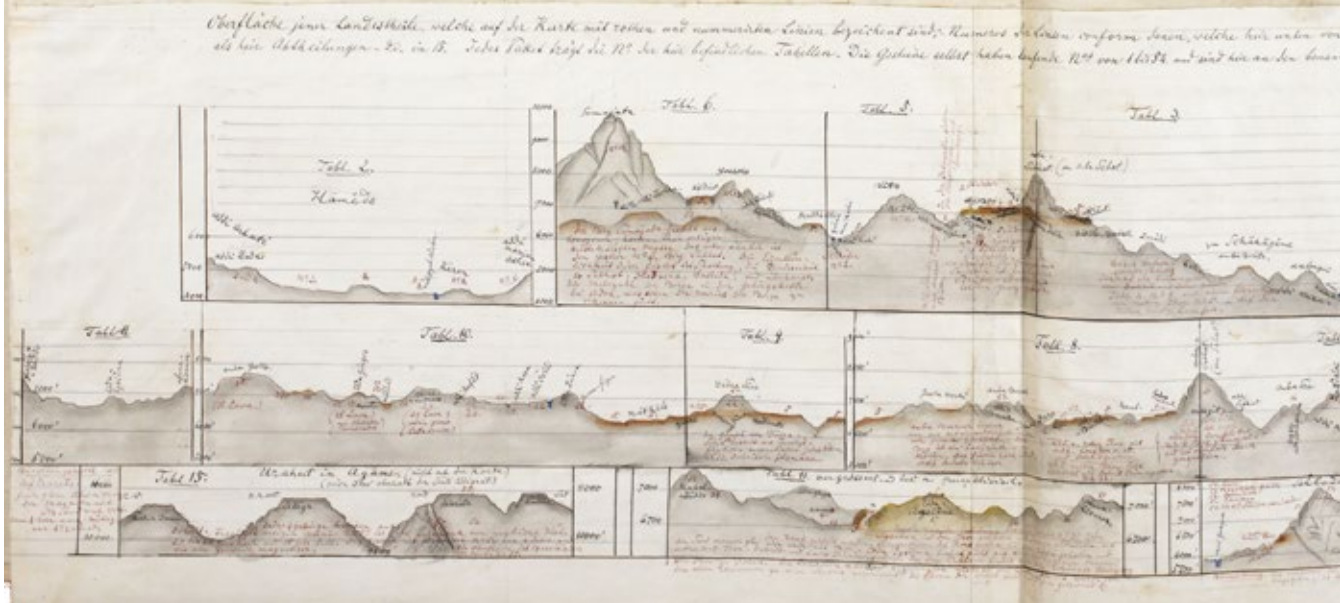
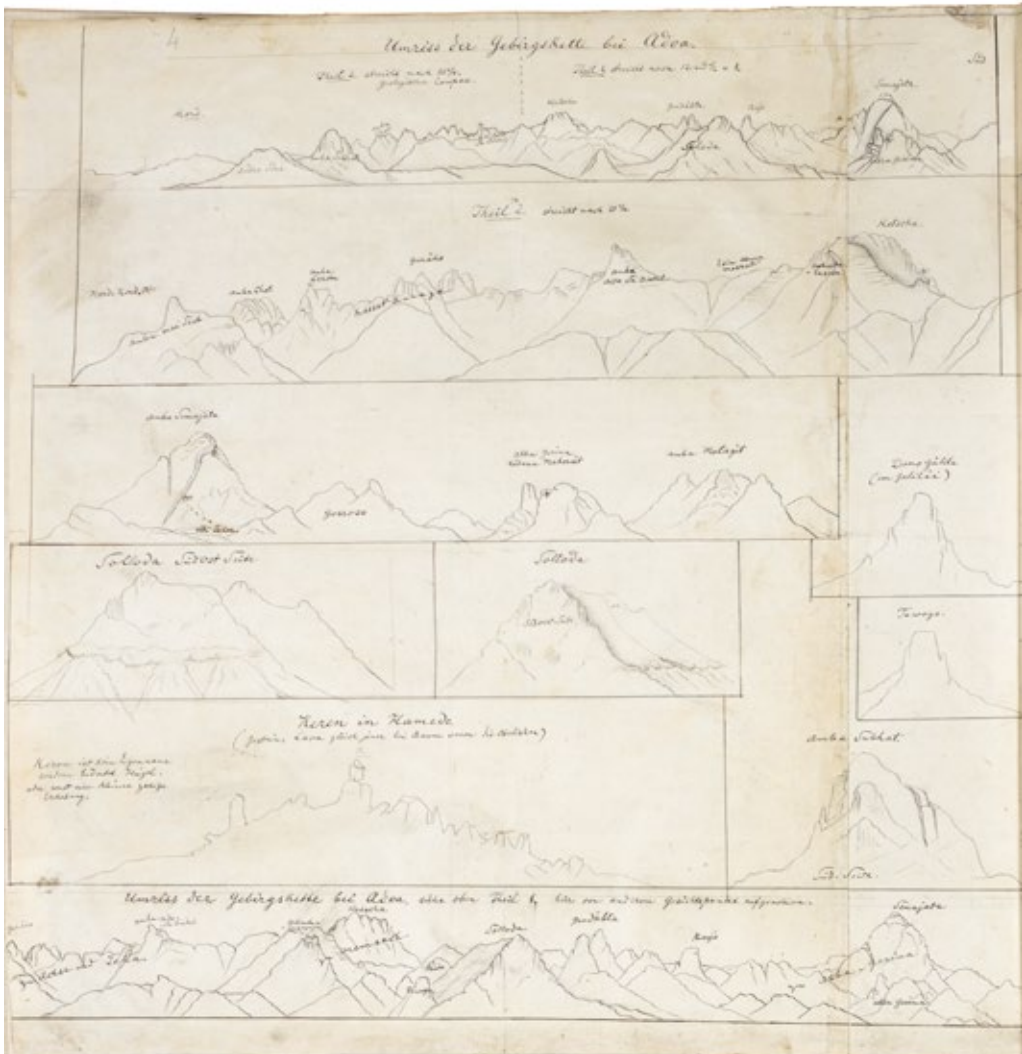




Fig. 1 Map of the Aksum and Adwa region in Tigray with outlines of the Adwa mountain range [Unriss der Gebirgskette bei Adoa] to the left, and on the bottom, tables of cross-sections of mountains noted on the map above. © The British Library Board, Add. MS 28506 f. 17.

honorary member of the Mannheim Society for Natural Sciences.

In 1837 Schimper travelled to Massawa on the Red Sea coast and from there overland to the city of Adwa in Tigray, Ethiopia, where he was granted permission to settle under the protection of the local overlord, *Ras Webe Haile Maryam* (1799–1867). He conducted field trips in the unexplored Semen Mountains, periodically sending botanical collections to Mannheim.

Between October 1837 and May 1855 Schimper undertook various collecting expeditions as far north as the Märäb River and south into the Täkkäze and Semen Mountain regions; the prolific results of which made him renowned as a botanist. After the first shipments of specimens to Mannheim in 1838, 1841 and 1843, he continued sending plant collections to other European collectors: the Jardin des Plantes in Paris from 1851 to 1855 and to Alexander Braun and Georg August Schweinfurth, the celebrated traveller, botanist and ethnologist (1836–1925) in 1854, 1861 and 1862 in Berlin.

Life for the Europeans in Ethiopia deteriorated under the new emperor Tewodros and Schimper's freedoms were significantly curtailed. It was during this time that some of his research and collections were lost. He spent the last ten years of his life in Adwa, dying in 1878 from an infectious disease, believed to be cholera.

Maps and his collection expeditions

Schimper produced four maps. Three of the four maps are accompanied by cross-sectional profiles which Schimper called tables. For 'Aksum und Adwa' (Fig. 1) he drew fifteen profiles, for 'Begemder' seven, two for 'Kolla Noari' (Fig. 6).

Schimper was not a trained mapmaker. He trekked with local guides and assistants, though he never acknowledged them by name. For the main roads or tracks he had printed maps to hand – a number of those existed – but he never mentioned specifically any maps or books that he may have consulted. Fold-out maps in printed books were mostly based on general maps and often featured

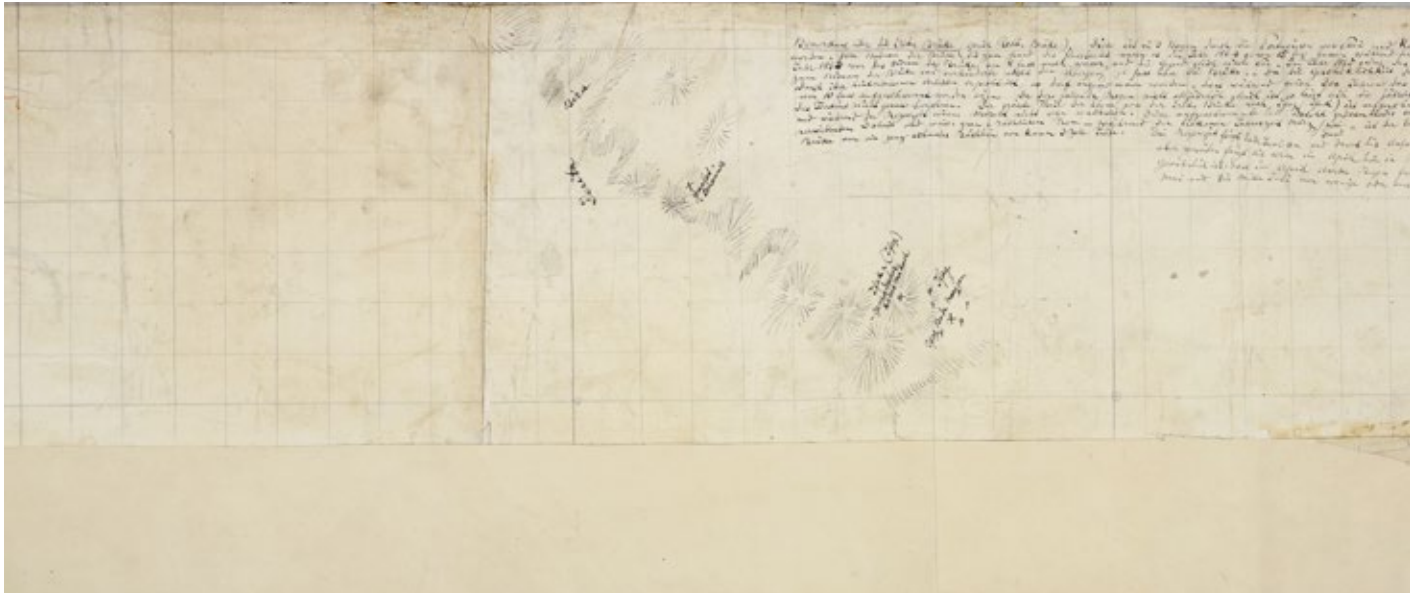


Fig. 2 This heavily annotated map depicts the Eastern shore of Lake Tana, Western Begumder. The right-hand page shows part of the shoreline of Lake Tana and is the only map on which Schimper included a scale. © The British Library Board, Add. MS 28506 f. 16.

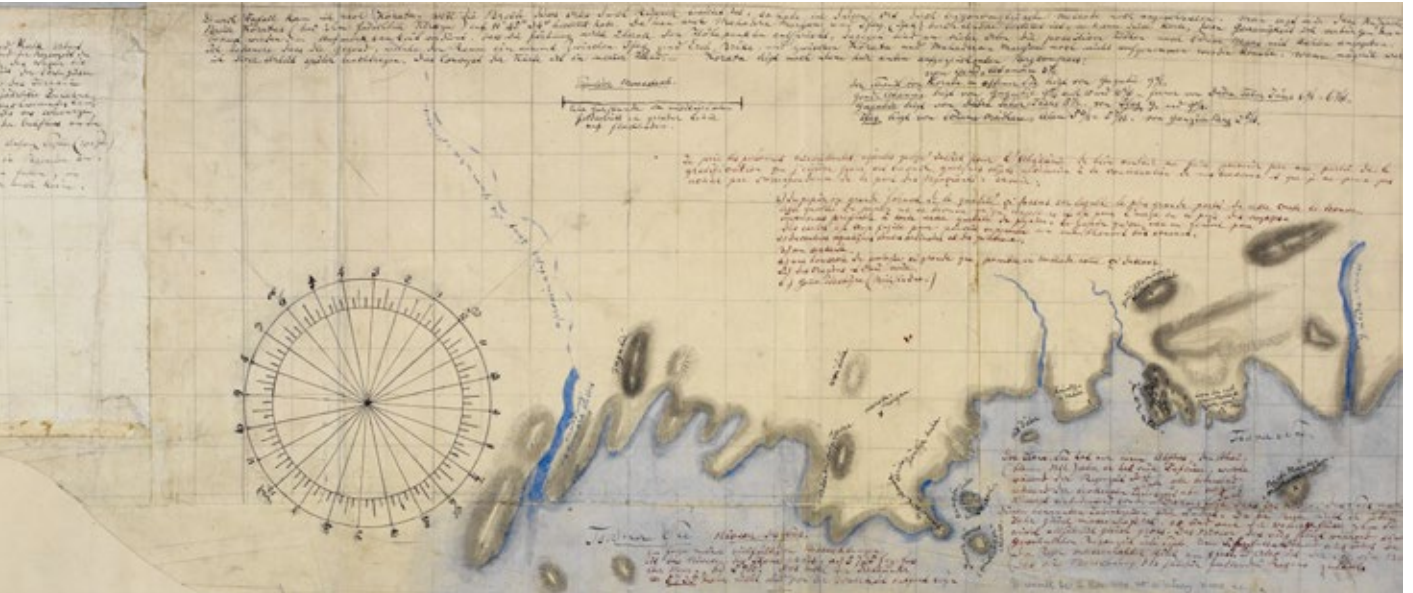
superimposed coloured lines indicating routes explorers had taken. Whilst these were a help, Schimper did not rely on them. He produced his own of those areas he visited, investing them with much more detail and supplementing them with cross-sections and profiles. Schimper, certainly knew the terrain he travelled, for he had spent much more time in Ethiopia than any other mapmaker before him.

His two manuscript books cover two topics. First, he meticulously described the trees and plants of the country and their uses for cooking and pharmaceutical applications. Secondly, he gave detailed accounts of the geology of northern Ethiopia. In *Observations* Schimper listed, in English, the various topics covered:

- 1 *Dr. William Schimper's observations on the Botany of Tigré made during a journey from Marab valley over the plain Kamedo [reading error for Hamedo] past the Adoa mountains to Urahut in the province Agame in a country 4,000 – 11,000 ft (Paris) above the level of the sea.*
- 2 *Appendix to No 1 explaining names and uses of many of the plants – Remarks on agriculture.*
- 3 *Geological Observations [made] in Abyssinia together with its meteorological.*
- 4 *Remarks on the Index to the map of the district Adoa and Axum in Tigré.*
- 5 *Map of the most important part of Begumder [sic] trigonometrically planned by Dr Schimper.*

- 5a *List of the names of places on Map 5 of Begumder [sic].*
- 6 *Map shewing the nature of the rocky clay plateau of the province of Kolla Noari.*
- 7 *Survey of the most important features of the mountains of Begumder [sic].*
- 8 *Map of Axum and Adoa in Tigré shewing the extension and formation of the clay plateaux.*
- 9 *List of Names of places on the map No 8. Axum & Adoa.*
- 10 *Sketch of the mountain chain about Adoa*
- 11 *Sketch of mountain ranges (being a Key to the Geological collection sent by Dr Schimper from Abyssinia).⁵*

Sadly, Schimper left few records of his working methods. There are no sketches extant, no field notes, drafts and crucially, no indication of dates and sources, material which may have been lost along with his geological and plant collections to looters.⁶ Did he sketch the terrain while he walked across the landscape or followed a river or path, or did he work up his sketches from memory on return from each expedition? Did he establish elevation by using an altimeter? Although the maps are marked with a grid, they lack longitude and latitude references. Only one map the 'Eastern shore of Lake Tana' has a scale. Schimper explains beneath the



scale that it represents the distance soldiers marched on flat ground in an hour. The orientation of the maps differs. The map of Aksum and Adwa region is oriented north; ‘Begemder and Eastern shore of Lake Tana’ show south-east at the top; while ‘Kolla Noari’ shows east at the top.

As a botanist it was important for him to analyse soil conditions, make notes on the climate and altitude. These he recorded with great care. On his trips he drew profiles, outlining the range of mountains and registering the soil and composition of subsoil rock conditions and this, in part, explains why

his maps are so devoid of place names, but supply such a wealth of geological research. Generally, he used very few symbols: a cross for a church or a short line with a circle on top for houses and names of villages, often without pinpointing them (Fig. 3).

The same symbols are used in the profiles. However, the short line with a circle on top used on profiles, escarpments and mountains suggest that it may have been used to represent other features. His map of Begemder has the most topographical input, including the names of villages or churches, and as the extract below demonstrates he was concerned with accurately transcribing them:

The incorrect spelling of the place names on the maps of Abyssinia which have been published so far have convinced me to give the correct spelling wherever I can, even though I am only dealing with a small part of the country. To this end I engaged an expert, born and raised in Begemder who accompanied me on my trips and who wrote down the place names in Amhari...I had this work proofread by the English and German missionaries, some of whom had some philological knowledge.⁷



Fig. 3 Detail from the map of the Aksum and Adwa region (Fig. 1) with symbols to indicate a church (cross) and villages (short line with circle on top). © The British Library Board, Add. MS 28506, f. 17.

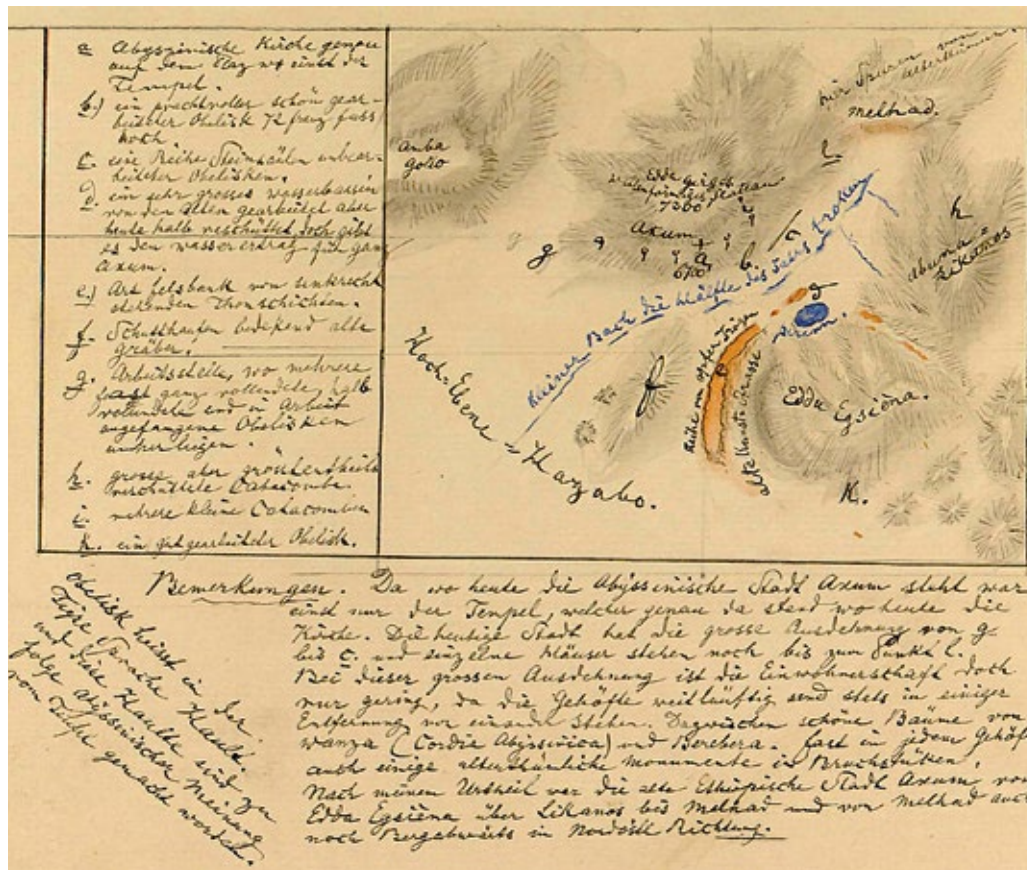


Fig. 4 Map of Aksum with copious explanatory notes. The translation is below. © The British Library Board, Add. MS 28506 f. 18.

On the lists of toponyms annexed to the maps of Aksum and Adwa, and Begemder, we find differences in the spelling which suggests that there may have been pronunciation variations.

While symbols were few, some of his maps are accompanied with copious explanatory notes. For example, on his Aksum sketch he appended the following general observations, historical notes, geological data, and art-historical explanations (Fig. 4).

- a) Abyssinian church on the exact spot where a temple once stood.
- b) a magnificent, beautifully worked obelisk 72 French ft tall.⁸
- c) a row of stone columns, unworked obelisks.
- d) a huge pool, made by the ancient Ethiopians. Today it is half buried but it supplies enough water for the whole of Axum.
- e) a kind of rock ledge of vertical clay layers.
- f) heap of rubble covering ancient graves.
- g) workplace, where several obelisks were found

- lying around, some almost complete, others half-finished and others still just begun.
- h) large, but nearly completely buried catacomb.
- i) several small catacombs.
- k) a well worked obelisk.

Beneath the map is written:

Observations: Once upon a time there was only a temple where present day Axum is situated and it stood on the very spot where the church is today. The present town extends from (g) to (c) and there are isolated houses as far as point (e). Even given the wide area covered by the town its population is still very small as the farmsteads are very spread out and some distance from each other. Dotted around are lovely Wanza (*Cordia abyssinica*) and Berebera trees. On nearly every farm you can find fragments of ancient monuments. In my estimation the ancient Ethiopian city of Axum stretched from Edda Egsiena through Likanos to Melhad and from

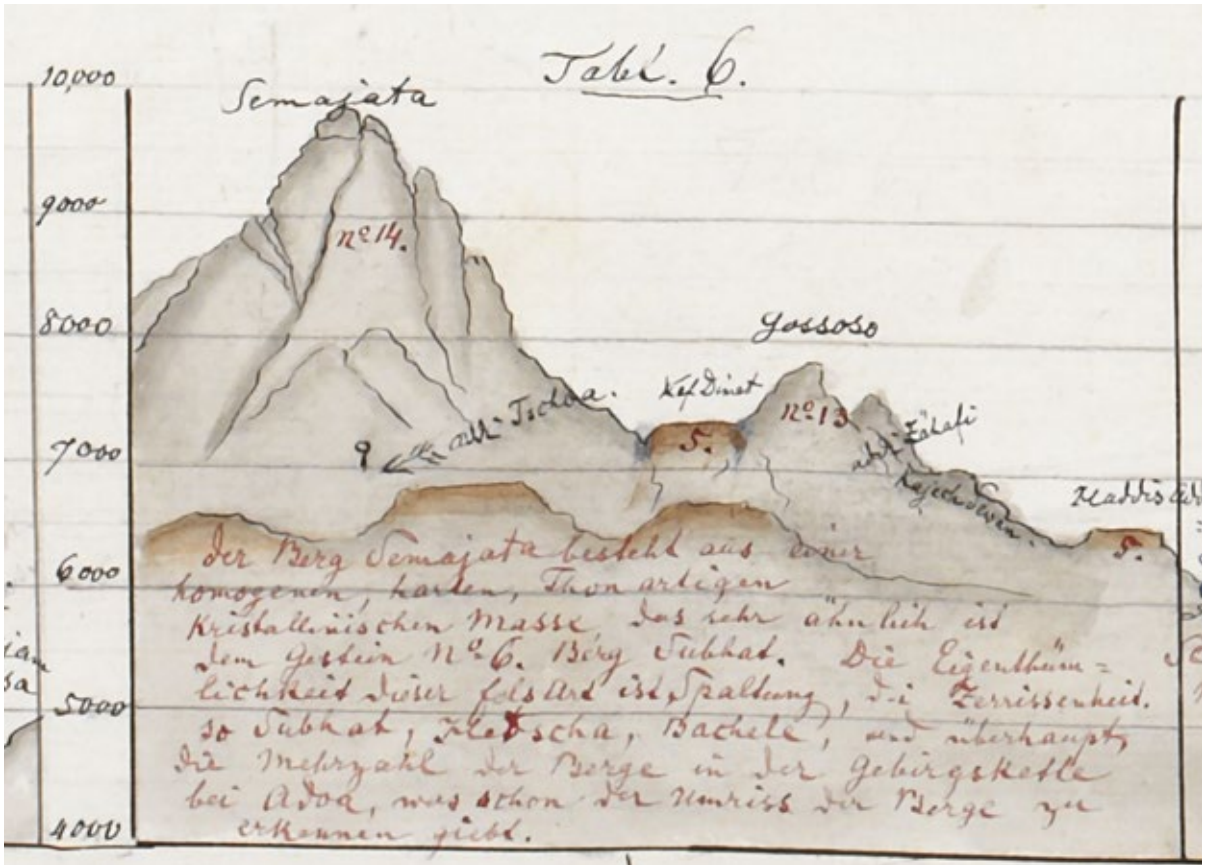


Fig. 5 Table 6, Semajata Mountain profile on the map of the Aksum and Adwa region (Fig. 1) in which Schimper describes the geological formation of the area. © The British Library Board, Add. MS 28506, f. 17.

Melhad even further downhill in a northeasterly direction. Obelisk is in Tigrinya hault and these haults have, according to Abyssinian opinion, been made by the devil.

Annotations on the map read:

Amba Gollo / Plateau of Hazabo / Small stream, dry for half the year, perennating / g / Edda Girgesu, undulating plateau 7300 / Axum / a / 6700' / b / f row of sacrificial troughs / ancient cart road / b / c / e / Here traces of antiquities / Melhad / h/ abuna = Likanos / d / Edda Egsièna / k °

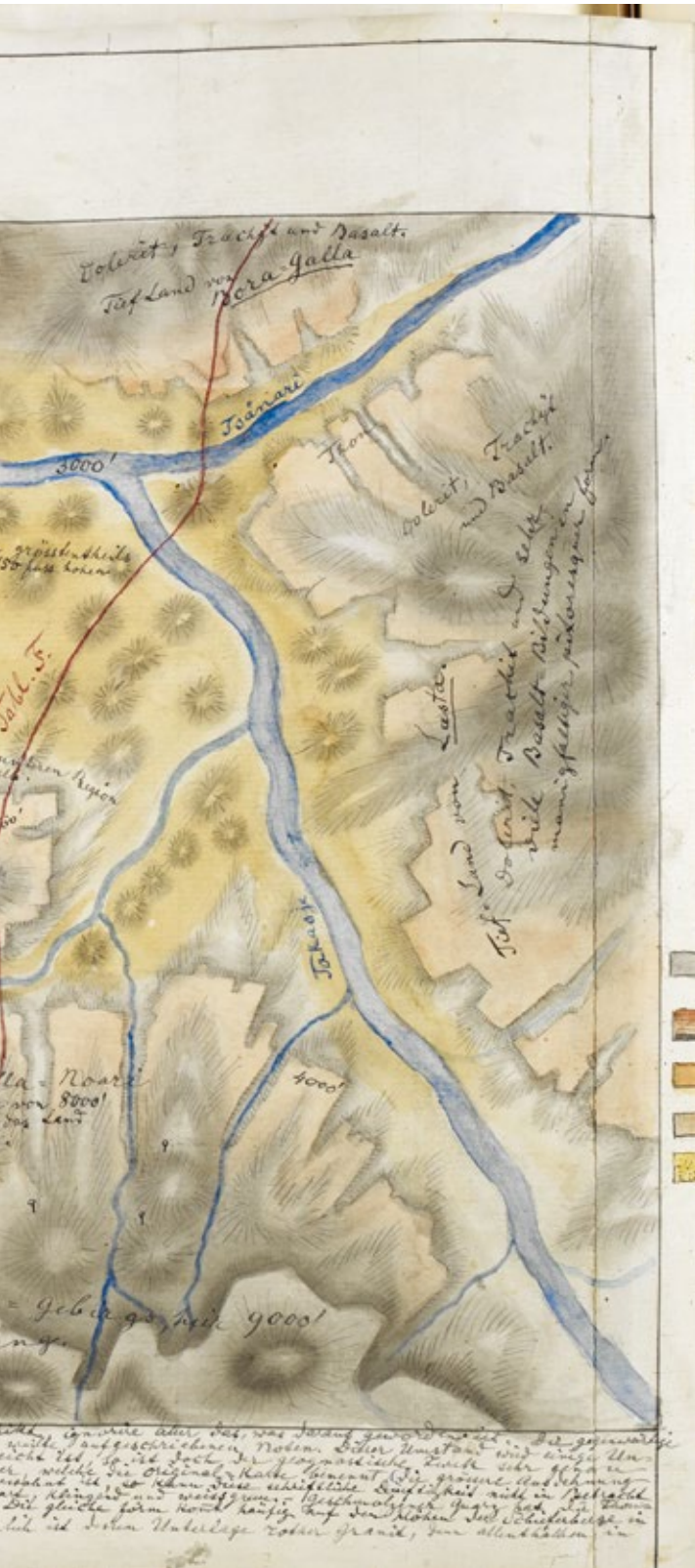
Sadly, such details are rare in the maps. However, they are more frequent in the three sets of cross-sectional drawings (Fig. 5). In these he describes the composition of the substructure and the rocks.

The map of Kolla Noari (Fig. 6) is accompanied by copious notes at the bottom giving valuable explanations of the geological structure:

Note 1. On the surface of the slate mountains where there is little water in Abar = Gäle country, the slate layers lie horizontally. They are hard, they give a sound, they are whitey grey. Molten quartz has penetrated the clay slate mass and has merged with it below the surface. This is, therefore, a form of lava which has retained a slate structure. The same form occurs frequently in the uplands of the slate mountains in Tsälamt and also occasionally near Adoa. These locations are characterised by systematic flat stratification of the terrain whether high up or low down.

Note 2. In the low plain on the Takasje at Kolla Noari you see red sandstone lying around, here and there, which has no petrification. It probably lies on red granite since red sandstone lies on granite almost everywhere in Abyssinia. On the other hand, the sandstone is yellowish wherever it is embedded on primitive clay slate.





The Aksum and Adwa map is accompanied by a panorama of the outline of mountain ranges near Adwa, as well as individual mountains and eight cross-sectional profiles of individually named mountains. It has more or less straight and numbered red lines which correspond to the numbers of the cross-sectional profiles. These are present on the maps of Kolla Noari and Begemder.

Schimper sent parcels with rock samples to the Natural History Museum in London and to the Naturkundemuseum in Berlin, where they still are. They are neatly labelled in Schimper's handwriting, giving precise locations. The samples refer only to the three maps mentioned here. On Schimper's entries we find his explanation for the use of the red and numbered lines on the Aksum and Adwa map and the cross-sectional profiles on this map sheet.

Re surface of those parts of the land which are marked with red and numbered lines: the numbers of the lines conform to the numbers which appear in tables 1 to 15 below. The rock samples are packed in as many packets.

The rocks were packed in such a way that the numbering of each rock parcel corresponded to the numbering of the tables in Schimper's manuscript. For example, the rock samples from Table 12 are identified as 'Between Amba Berra and Biet Bendelion, south-east of Axum, Tigre, Abyssinia; collected by Schimper, correspond to parcel 12, no. 44'. On the cross-sectional profile (Fig. 7) he added:

Berra. The surface of the mountain is covered with large boulders, No. 43. They are trachyte and magnetic. The compact rock mass No.22 is dolerite. The small ledge, 42, 44, consists of dolerite clay topsoil with rock rubble – a variety of crystals and traces of anthracite in crystal form.

This practice is clear evidence that the map drawings and cross-sections are keys to the geological collections sent by Schimper to Berlin and London.

Schimper, as a botanist, placed his botanical research on his geological knowledge. By explaining the rock formation and conglomerate rock deposits beneath the surface, he could show in his maps and profiles how the underlying geological facts

Fig. 6 Map of the low-lying flat lands of the Kolla Noari or the Qwälla province of western Ethiopia. Schimper described it as a clay plateau. © The British Library Board, Add. MS 28506 f. 16.



Fig. 7 Table 12, Area 'between Amba Berra and Biet Bendelion, south-east of Axum, Tigre, Abyssinia' on the map of the Aksum and Adwa region (Fig. 1). This table correlates with the parcel of rock samples sent to the Natural History Museum in London.
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Fig. 8 Rock parcel No. 14 with samples from the Scholloda mountain. This parcel corresponds to Table 14 below. Nat. Hist. Mus., Spec. Coll. Mss (63) Sch1, Manuscript shelves, Guide to Rock Samples, Axum and Adoa, Tables 1-14.

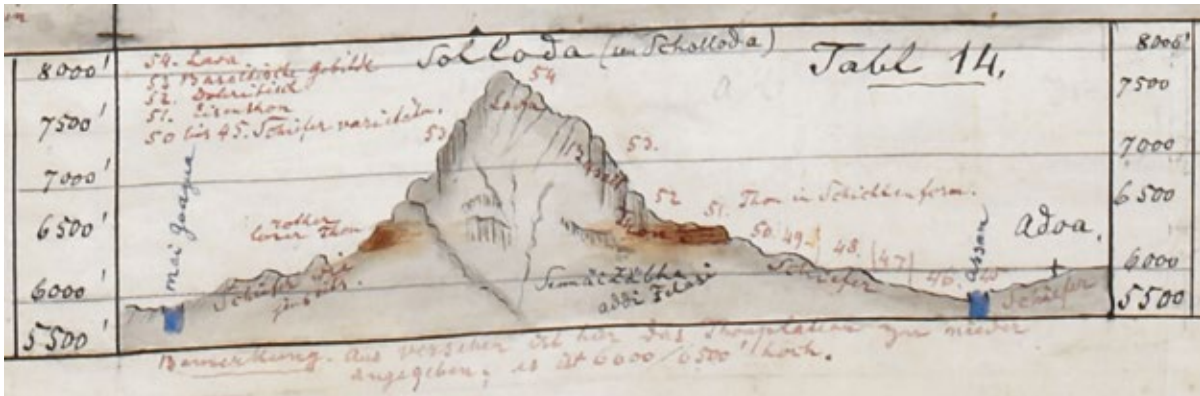


Fig. 9 Table 14, Scholloda Mountain, on the map of the Aksum and Adwa region (Fig. 1).
 © The British Library Board, Add. MS 28506, f. 17.

influenced and determined the geography, which in turn presented the key to understanding the flora and fauna of the country and ultimately its agriculture and life-supporting systems.

Notes

- 1 Specimen sent by Schimper. ‘Schimperi iter Abyssinicum. Pterygocarpus abyssinicus Hochst.’, dated 19 July 1838. Kew 41177. Kew Herbarium, London; Catalogue published on the internet site: <http://apps.kew.org/herbcat/getHomePageResults>
- 2 ‘Georg Wilhelm Schimper - in Abyssinia. Observations on Tigre’. Eds Andreas Gestrich and Dorothea McEwan in collaboration with Stefan Hanß. Critical online edition, 2015. <http://www.ghil.ac.uk/Schimper>
- 3 I am indebted to Annie and Tony Betts for drawing my attention to the following letter, dated 19 July 1870 from John Winter Jones (1805–1881, Principal Librarian of the British Museum 1866–1878) to Edward Augustus Bond (1815–1898, Keeper of Manuscripts 1867–1878), kept in the British Museum, ‘Papers relating to the Purchase and Acquisition of Manuscripts 1866– 1870’.

Dear Bond,
Herewith I send you some Manuscripts and some Geological Maps in Manuscript which, having been purchased by the Government of Dr. Schimper in Abyssinia, have been forwarded under Treasury orders by the authorities at the War Office for preservation in the British Museum. They have since they first reached the Museum been sent at the request of Dr. Schimper to Professor Braun of Berlin for revision. By direction of the Trustees I now send them to you to be deposited in the department of Manuscripts. Should it upon examination appear that the Maps are merely intended as illustrations of the Manuscripts you will of course keep all the documents together. Should you, however, find that the maps are more suitable for the departments of Maps, will you be so good as to hand them over to Mr. Major and let me know that you have done so.
Believe me, yours truly, J Winter Jones.

- 4 Dorothea McEwan, ‘The region of Adwa and Begmeder on the manuscript maps of 1864/65 by G.W. Schimper’, in Éloi Ficquet, Ahmed Hassen, Thomas Osmond eds, *Movements in Ethiopia, Ethiopia in Movement. Proceedings of the 18th International Conference of Ethiopian Studies*, Vol. I. pp. 199–212 & Vol. II. Los Angeles, CA: Tsehai Publishers, 2016.
- 5 BL Add. MS 28506 f. 1r–2v.
- 6 Schimper wrote:
Finally, in the years 1862/1865, I found an opportunity to work again. After a year of botanical and geological-geographical work in Tigray I came to Bagmeder and had the good fortune to find the same sort of work, but subsequently part of what I had amassed was looted. This included my geological collection, which I had hidden away in triplicate in two different villages, including 4 large bales full of plants, the loss of which is less regrettable as they were, for the most part, duplicates. Fortunately, the more important part of the botanical collection had previously been sent to Adoa. It is worth noting here that my collections are deposited in Adoa, in what I think are 23 bales (probably 32) labelled for London. I have retained for the present the geological, geographical maps with their associated plant drawings, both of Tigray and of Bagmeder. Throughout 1866 and 1867 and to date, that is the end of January 1868, I have been unable to do any useful work, and what has been happening is something I cannot write about today. For more than three months, I have been in a military camp

unable to undertake any useful activity. I am in my tent, not allowed to move to right or left Usually we travel in the morning and rest in the afternoon, and I make use of this time to.

This meant Schimper worked from memory, with the help of a small collection of old notes. The lack of more precise map drawings is adequately explained above.

7 BL, Add. MS 28506, f. 1r.

8 See Horace Doursther, *Dictionnaire universel des poids et mesures anciens et modernes*. Amsterdam: Meridian Publishing Co., 1965, originally 1840. Entry for ‘Pied-Paris’: ‘Le pied usuel ou métrique was introduced officially on 12 Feb. 1812 and is nearly a third of a metre. 1 metre = 147.77 lines = 333 mm’. 72 French feet are approximately 23 m.

9 BL, Add. MS 28506, f. 1r.

Dorothea McEwan was the archivist of the Warburg Institute, University of London. Currently she is an independent scholar researching Ethiopian art and intellectual history. She has initiated and organised a number of international conferences on Ethiopian art and architecture and headed the editorial board for the publication of Georg Wilhelm Schimper’s paper on the natural history of Ethiopia. She was elected an Associate Fellow of the Ethiopian Academy Sciences. (Dorothea.Mcewan@sas.ac.uk)

The image shows the cover of the book 'Collecting Old Maps'. The cover features a detailed historical map with a red title box in the center containing the text 'COLLECTING OLD MAPS'. Above the title box, there is a decorative cartouche with the names 'F.J. MANASEK', 'MARTI GRIGGS', and 'CURT GRIGGS'. The map background shows various geographical features and labels like 'AUSTRALIS' and 'TERRA AUST'. Below the map, there is a black box with white text providing publication details.

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ANTIQUÉ GLOBES IN POLAND, 1480–1860

A new inventory

Małgorzata Taborska

In the 1960s, Tadeusz Przyppkowski (1905–1977), one of Poland’s prominent gnomonist,¹ initiated a project to compile an inventory of antique scientific instruments in Poland.² Globes were entrusted to Bolesław Olszewicz (1893–1972).³ Janina Piasecka (1928–2016) concentrated on the Polish-language globes.⁴ Olszewicz identified eighty-two globes.⁵ Since then there have been many changes to his list, including the status of some of the country’s museums. The results of a nationwide investigation conducted in 2019 into the status of pre-1860 globes, and which included a re-evaluation of Olszewicz’s 1967 and Ernst Bernleithner’s 1973 lists are published in this article.⁶ It represents the most comprehensive listing of pre-1860 antique globes in Poland.

In assessing globes of the former Commonwealth of Poland,⁷ the country’s political developments and its shifting borders in the twentieth century need to be taken into account. A complete inventory of eighteenth- and nineteenth-century globes is impossible at the moment as it would require searching the collections of those countries which were in the past part of the Commonwealth: Ukraine, Lithuania, Belarus or Russia (Kaliningrad). Some collections which today are regarded as Polish, such as the

collection of scientific instruments from the Astronomical Observatory of Wrocław University, which had been established by Longinus Anton Jungnitz, a German astronomer (1764–1831) in 1791, date back to the Prussian Partition (1772–1918). Today, they are exhibited in the Mathematical Tower of the Wrocław University Museum. Many treasures of the Commonwealth of Poland became wartime loot, taken to Sweden after the Polish-Swedish wars in the seventeenth century and later to Germany and Russia. Warfare in the Polish territories (including the First and Second World Wars), national liberation uprisings, seizures of properties during the partition periods, and massive resettlement programmes contributed to the low survival rate of globes in Poland.

Globes as scientific and didactic aids

The earliest information about scientific instruments in Poland dates back to the thirteenth and the fourteenth centuries. They were used in academies and monasteries or owned by scholars. The oldest source which confirms their use as didactic aids at the Jagiellonian University⁸ is the document *Gratiarum Actio* (c.1430) by Piotr of Zvanow.⁹ Additionally, the 1541 and 1551 Mercator globes and two pairs of Blaeu

TABLE 1. COMPARISON OF THE NUMBER OF GLOBES ON OLSZEWICZ’S LIST (1967) AND THE NUMBER OF GLOBES KNOWN TODAY.

CENTURY	1967			2020			DIFFERENCE
	Terrestrial	Celestial	Total	Terrestrial	Celestial	Total	
15th	-	1	1	-	1	1	-
16th	4	3	7	4	4	8	+1
17th	10	13	23	10	15	25	+2
18th	14	17	31	10	20	30	-1
1800–1860	13	2	15	20	2	22	+7
TOTAL	41	36	77	44	42	86	+9

Fig. 1 One of the first Polish-language terrestrial globes by Carl Abel-Johann Georg Klinger, Nuremberg, Germany, 1851–1855 (Tab. 2, No 17). Diameter 21 cm, hand-coloured lithographic gores over gypsum sphere, wooden base, paper scale on the horizon. Gift of Franciszek Ksawery Pusłowski. Jagiellonian University Museum. Photograph by Grzegorz Zygier.

globes (1603 and 1640)¹⁰ in the collection of the Jagiellonian University Museum were probably used for teaching purposes (Table 2).

Ownership of globes increased with the reforms initiated by the Commission of National Education (1773–1795), a sovereign ministry of education. Modern teaching methods based on experiment and observation were introduced. Textbooks and teaching aids were adopted at all levels of education and it can be assumed that many maps and globes were purchased with funds provided by the Commission. Unfortunately, only a scattering of information has survived regarding the acquisition of globes during that period, and there is, for example, no comprehensive list of the scientific instruments that were taken from Jesuit schools after the suppression of the Jesuit Order in 1773.¹¹ The largest Jesuit school in Poland, the Jesuit College in Poznań (after 1571–1773), boasted abundantly equipped classrooms for the teaching of zoology, botany, mineralogy and physics, as well as an astronomical observatory. Amongst the items purchased by the Commission from the College's observatory was a pair of De Vaugondy's globes (Table 2). These they transferred to the Jagiellonian University Astronomical Observatory which, at that time, was being set up by the astronomer Jan Śniadecki (1756–1830).¹²

Globe manufacture was expensive and when Poland lost its independence in 1795 the Polish language was effectively eliminated from public life, a situation which discouraged publishing and the production of globes. It took nearly eighty years before the first Polish-language globes were manufactured by Abel-Klinger in Nuremberg (Fig. 1).

The 2019 inventory (Table 2)

All the globes considered for the investigation were manufactured before 1860. Of the 82 listed by Olszewicz and Bernleithner, 77 met this criterion (five by Jan Felkl were made after the cut-off date). Eleven from their list could not be verified as there is no documentation to indicate their current whereabouts.¹³ However, sixteen additional globes have been identified giving a total of 86 globes (Table 2).¹⁴ Only the oldest Polish-language globes have been included, those manufactured by Abel-Klinger in Nuremberg. The current list should be perceived as a work in progress as private, school and church collections have not yet been thoroughly investigated. The list does not verify the production date of all the

globes and follows the information provided by the relevant institutions. The investigation noted several inaccuracies regarding the diameter and the type of globes.¹⁵ 21.6 percent of the globes have a diameter of more than 50 cm, the largest ones being the three library globes by Coronelli (diam. 110 cm).

The Wright–Dollard globe¹⁶ was not included in the 2019 list as only its base has survived; the sphere was destroyed after World War II.¹⁷ Two of the three privately-owned globes mentioned by Olszewicz



Fig. 2 Hans Dorn, celestial globe with planispherical astrolabe, Buda, Hungary, 1480. Engraved on brass, height: 133.5 cm from its base to the top of the astrolabe. Gift of Prof. Marcin Bylica. Jagiellonian University Museum. Photograph by Grzegorz Zygier.

could not be found. The first is a terrestrial globe (Leipzig, 1840), issued by Schreibers Erben, which had belonged to Olszewicz¹⁸ but was not included in his cartographic collection that he granted to the Ossolineum.¹⁹ The second is the Cary globe (1806) which belonged to Zofia Kremnicka (1878–1965), owner of the Górski Manor House in Nałęczów. In 1974 her successors sold the property after which no further information about the globe has been discovered.²⁰ The 2019 investigation also allowed for errors in Olszewicz’s and Bernleithner’s lists to be corrected. For example, the 1855/56 globe by Abel-Klinger (see Table 2) had been recorded as belonging to the Przyrkowski family and on display at their private museum in Jędrzejów when, in fact, the family had already gifted it to the state.

The 1967 list was based on the actual locations of the globes at the time the inventory was being carried out. Thus, it included globes that were then on loan to the Jagiellonian University Museum, the National Museum in Kraków and the Institute of Geography of the Polish Academy of Sciences in Warsaw. Olszewicz incorrectly noted the location of a Coronelli globe as the Rogalin Palace when, in fact, it was the property of the Museum of the National Museum in Poznań. It had been on show at Rogalin Palace along with De Vaugondy’s globes during the first temporary exhibition there after the war (1948/1949), and, as the Poznań Town Hall had been devastated in World War II, it remained there until the Town Hall’s reconstruction. At present, all three globes are in the Poznań Town Hall, a branch of the National Museum.²¹

The current list of globes includes the work of thirty-four different cartographers or manufacturers and ten whose makers have not been identified (Table 2). The makers of the sixteen additional globes are: Abel-Klinger,²² Adami,²³ Bauer and Sotzman,²⁴ Bauerkeller,²⁵ Boehm,²⁶ Cary,²⁷ Doppelmayr,²⁸ Güssefeld,²⁹ Hoene-Wroński,³⁰ Jüttner,³¹ Kiepert,³² Mercator³³ and Schöninger³⁴ (Table 2). Two are anonymous.³⁵

The oldest globes noted in the 2019 inventory belong to the Jagiellonian University Museum. They are the celestial globe by Dorn (1480) (Fig. 2) and the engraved gilded copper terrestrial globe known as the



Fig. 3 Anonymous, the Jagiellonian terrestrial globe, Italy (?), 1510–1511. Gilded copper and brass, height: 42 cm from its base to the top. Gift from Jan Brożek. Jagiellonian University Museum. Photograph by Grzegorz Zygier.

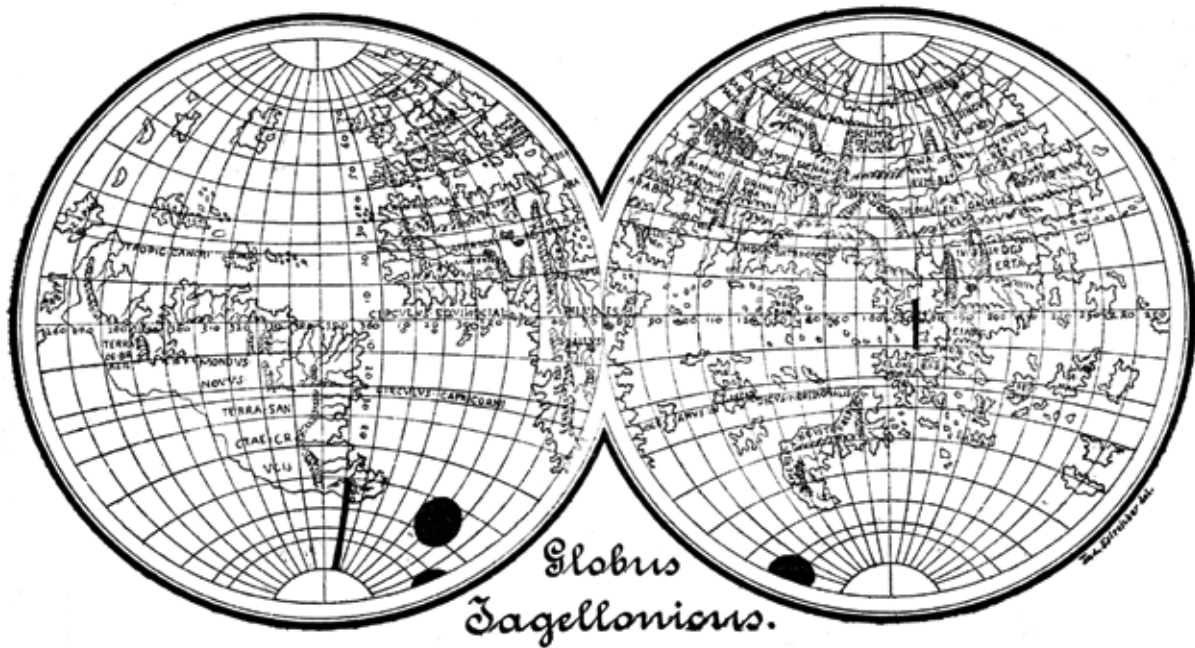


Fig. 4 A map of the Jagiellonian globe by Tadeusz Estreicher, Kraków, 1900. Estreicher made a copy of the ‘world as portrayed on the globe for an article ‘Globus Biblioteki Jagiellońskiej z początku w. XVI’ published in 1900.

‘Jagiellonian globe’ (1510–11) (Fig. 3). It is the earliest known globe to show the Americas; ‘America Noviter Reperta’ appears below the continent. The coastal outlines on the Jagiellonian globe correspond to those on the 1507 world map by Martin Waldseemüller (1470–1520).³⁶ It also bears a striking resemblance to the Hunt-Lenox globe in New York Public Library which is dated to the first decade of the sixteenth century and shares with it a mysterious island continent to the south-east of Madagascar (Fig. 4).³⁷

One of the outstanding examples is the ‘heraldic’ Weigel celestial globe (1699). It is one of eighteen globes at the Wrocław University Museum. The heavens have been hand-painted over the brass sphere and the traditional depictions of constellations have been replaced with the coats of arms of the greatest European dynasties. Stars are marked with small holes, and by looking into the globe through a larger hole, the stars can be seen in their correct configuration as points of light against a dark background. The interior of the globe looks like the night sky and when a light is moved around the sphere it is possible to imitate the consecutive stages of the Earth’s rotation.

Another intriguing example is the ‘Prognometr’ (Fig. 5), a terrestrial globe by Polish mathematician,

philosopher and mystic Józef Maria Hoene-Wroński (1776–1853). It is a physical illustration of his system called ‘Absolute Philosophy’ in which he argued that both nature and spirit are guided and united by a single principle – the Absolute which could be applied to politics, history, economics, legislation, psychology, music and pedagogy.³⁸ The ‘Prognometr’, which he claimed enabled one ‘to learn everything that was, is and will be, or should be’,³⁹ consists of two concentric globes, surrounded by rings, like an armillary sphere. Additional elements and inscriptions in French appear on the rings.

Globe ownership

It is highly likely that globes were in evidence during the Commonwealth of Poland. They could be found at universities, schools, cabinets of curiosities, royal collections, palaces of the aristocracy and houses of the middle class, in monasteries, churches, and libraries. Globes were also owned by scholars. For example, court astrologer and physician to the Hungarian king, Matthias Corvinus Marcin Bylica (1433–1493), owned the Dorn globe⁴⁰ and the Jagiellonian globe belonged to polymath Jan Brożek (1585–1652).⁴¹

Polish King John Casimir Vasa (r.1648–1666) owned ‘a great sphere of copper’ – probably a celestial globe that is mentioned in documents from 1672;⁴² John III Sobieski (r.1674–1696) had several Blaeu globes, a clock globe and the *globus terrestris magnus*, probably by Coronelli.⁴³ Johan Friedrich Endersch (1705–1769), a cartographer, mechanic and mathematician from Elbląg (East Prussia), made several globes for Augustus III of Poland (r.1734–1763) in 1750. They were kept in the Royal Library during the reign of Stanisław August Poniatowski, (r.1764–1795), and then, in 1805, purchased by Tadeusz Czacki (1765–1813) and handed over to the Krzemieniec Lyceum (Volhynia, now Ukraine).⁴⁴ As part of anti-Polish repression after the fall of national liberation uprisings Tsar Nicholas I of Russia (r.1825–1855) ordered the closure of schools, and globes, along with other scientific instruments and the library of the Vilnius University, were taken to Kiev. They were destined to be used by the newly formed Imperial University of Kiev (from 1833).⁴⁵

King Stanisław August Poniatowski, an aficionado of cartography and geodesy, had several Desnos globes (1770) in the Royal Library which in 1780 he gave to the Jagiellonian University. They were listed in the 1883 inventory but have not survived.⁴⁶ The *Catalogus Instrumentator[um] mathematicorum ac physicorum serenissimi Stanislai Augusti Regis Poloniarum noviter per Caelestinum Mękarski perscriptus Varsaviae 1787* [Catalogue of mathematical and physical instruments of His Majesty Stanisław August Poniatowski, King of Poland, newly rewritten by Celestyn Mękarski in Warsaw, 1787],⁴⁷ lists nine globes: a pair of globes from Paris with a diameter each of 6 inches and a pair of c.8.5-inch globes, also from Paris, which have not survived; a 14-inch pair by Endersch (Elbląg, 1750) which is now in the Library of the Vilnius University); a celestial globe (Paris, 1778) by Joseph Jérôme Lefrançois de Lalande (1732–1807); and a pair of silver globes.⁴⁸ All dimensions are in Paris inches (1 Paris inch = approx. 2.707 cm). Following the king’s example, many rich families created their own cabinets of curiosities which included globes and other scientific instruments.

The globes which have survived represent only a small fragment of the collections that existed during the Commonwealth. Many have been lost or destroyed. This is best exemplified by the Jagiellonian University, which of all the universities suffered the

least destruction during the wars. Of the 23 globes the university currently holds nine are from the Jagiellonian Library and nine from the Astronomical Observatory. Historical inventories are inconsistent. Only three pairs of Paris globes are listed in the 1792 Observatory inventory: De Vaugondy (diam. 45 cm; at present in the Jagiellonian University Museum),⁴⁹ a 10-inch Desnos,⁵⁰ and a 1 Paris foot Fortin, neither pair have survived.⁵¹ The 1833 inventory mentions three other globes, however, those from a 1765 inventory are not mentioned: an 1845 terrestrial relief globe by Bauerkeller; a 1821 Bauer & Sotzman terrestrial globe with a brass meridian,⁵² and a 1870 induction globe by Lenoir which has not survived.⁵³ There is no record of the remaining six globes in the

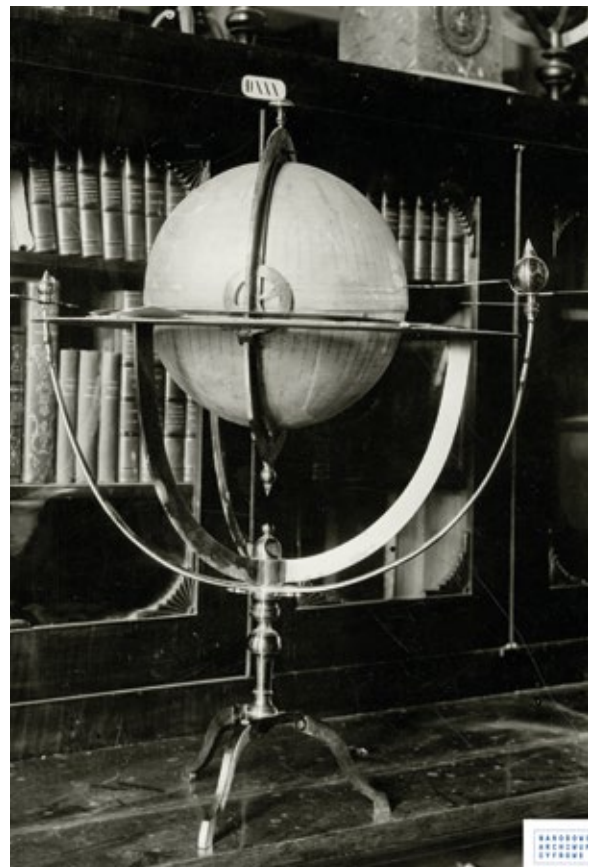


Fig. 5 Józef Maria Hoene-Wroński, ‘Prognometr’, Warsaw [?]. Poland [?], before 1853. Diameter 32 cm, (Tab. 2, No 7). King Jan III’s Palace at Wilanów. The instrument demonstrates Józef Maria Hoene-Wroński’s philosophical system. The brass globe belongs to the Krasieński Library which is part of the National Library in Warsaw. Photograph by Jan Binek, 1932, from the collection of the National Digital Archives.



Fig. 6 Cartography room at the Jagiellonian University Museum, 2020. Photograph by Grzegorz Zygiel.

museum. If, of the nine listed, only four have survived it begs the question as to how many globes there were in the Observatory.

The 2019 investigation identified 86 pre-1860 globes across 27 institutions: universities, one in a seminary, two at institutes of the Polish Academy of Sciences, two in national and regional museums, and nine in monasteries and archdiocesan collections. The majority are in ten state-owned collections, the richest in the Jagiellonian University Museum, with 23 of its collection of 68 globes dating from before 1860 (Fig. 6). The 2019 inventory represents just the initial stage of our research. There remains further work to be done on private, school and church collections.

Acknowledgements

This investigation was made possible thanks to the courtesy and assistance of many people in museums, academic institutions, schools and churches all around Poland. In particular, I would like to express my gratitude to: Fr Michał Sołomieniuk (Archdiocese of Gniezno), Anna Kuklińska (University Library in Warsaw), Anna

Osowska (University Library in Wrocław), Jan Paweł Borowski (Museum of Cieszyn Silesia), Marcin Banaś (Jagiellonian University Museum), Anna Szczodrak (Karkonosze Museum in Jelenia Góra), Ewa Leszczyńska (Museum of the Palace in Rogalin, National Museum in Poznań), Piotr Galik (Ossolineum), Danuta Horoszko (Museum of the Palace in Rogalin, National Museum in Poznań), Rafał Mieclerski (University Library in Poznań), Anna Polakowska (Library of the National Museum in Warsaw), Łukasz Kasprzak (Wrocław University), Katarzyna Toporska (National Museum in Poznań), and Janina Turek (the 1st Secondary School of General Education, Wadowice).

Dr Małgorzata Taborska trained as a biologist and land surveyor. She currently works as a certified curator at the Jagiellonian University Museum and is a custodian of the museum's collection of scientific instruments: clocks, globes, meteorology and geodetic instruments, drafting microscopes, and the equipment of biology and natural science laboratories. (malgorzata.taborska@uj.edu.pl)

Table 2. Globes manufactured before 1860

KEY							
s.l.	<i>sine loco</i> (place unknown)						
strike-through	existence unconfirmed in 2019			T		Terrestrial	
asterisk	new to the list			C		Celestial	
No.	Maker	Globe	Production place	Year	Diameter [cm]	City	Institution
1	Anonymous, 'The Jagiellonian Globe'	T	Northern Italy?	1510–1511	7.35	Kraków	MUJ
2	Anonymous	C	s.l.	c.16th cent.	[?]	Wrocław	MUWr
3	Anonymous	C	s.l.	c.1600	6	Wrocław	MUWr
4	Anonymous	T	s.l.	c.1620	10	Wrocław	MUWr
5	Anonymous	C	s.l.	1640	63	Warsaw	BW
6*	Anonymous	C	s.l.	c.17th cent.	45 x 40	Jelenia Góra	JG
7	Anonymous	T	s.l.	after 1700	[?]	Kraków	MNK
8	Anonymous	C	s.l.	1728	32	Kraków	MNK
9	Anonymous	T	s.l.	c.1800	13	Poznań	MNP
10	Anonymous	C	France	1802	32	Kraków	MUJ
11	Anonymous	T	France	1802	[?]	Kraków	MNK
12	Anonymous (base)	-	Germany	18th cent.	23 [?]	Kraków	MUJ
13*	Anonymous (with clock)	T	France	18th cent.	30	Poznań	MNP
14*	Carl Abel-Johann Georg Klinger	T	Nuremberg	1850–1856	15	Warsaw	BWUW
15	Carl Abel-Johann Georg Klinger	T	Nuremberg	1851–1856	15	Wrocław	BWr
16	Carl Abel-Johann Georg Klinger	T	Nuremberg	1855–1856	15	Jędrzejów	MP
17*	Carl Abel-Johann Georg Klinger	T	Nuremberg	1855–1856	21	Kraków	MUJ
18*	Carl Abel-Johann Georg Klinger	T	Nuremberg	1855–1856	21	Kraków	MUJ
19	Carl Adami	T	Berlin	1860	35	Kraków	MNK
20*	Carl Adami (porcelain base)	C	Berlin	1852–1874	35	Wilanów	ZKW
21*	Johan Bernard Bauer Daniel Friedrich Sotzman	T	Nuremberg	1821	10.5	Kraków	MUJ
22	Bernard Bauer	T	Nuremberg	1824	11	Warsaw	MNW
23*	Georg Leonhart Bauerkeller	T	Frankfurt am Main	1821	c.33	Kraków	IGiGP
24	Johann Gottfried Beuchel	C	Złotoryja (Goldberg)	1726	58	Warsaw	BW
25	Johann Gottfried Beuchel	T	Złotoryja (Goldberg)	1727	58	Warsaw	BW
26	Willem Jansz Blaeu	C	Amsterdam	1606	15	Wrocław	BAW
27	Willem Jansz Blaeu	T	Amsterdam	1606	15	Wrocław	BAW
28	Willem Jansz Blaeu	T	Amsterdam	1602	23	Wrocław	BAW
29	Willem Jansz Blaeu	C	Amsterdam	1602	23	Wrocław	BAW
30	Willem Jansz Blaeu	C	Amsterdam	1621	23	Cieszyn	MSC
31	Willem Jansz Blaeu	T	Amsterdam	1599	34	Kraków	MUJ
32	Willem Jansz Blaeu	C	Amsterdam	1603	34	Kraków	MUJ
33	Willem Jansz Blaeu	C	Amsterdam	1603 (1622)	34	Kraków	MUJ
34	Willem Jansz Blaeu	C	Amsterdam	1616	67	Toruń	KKT
35	Willem Jansz Blaeu	T	Amsterdam	1622	67	Toruń	KKT
36	Willem Jansz Blaeu	T	Amsterdam	1622	67	Toruń	MOT

37	Willem Jansz Blaeu	C	Amsterdam	1640	67	Kraków	MUJ
38	Willem Jansz Blaeu	T	Amsterdam	1640	67	Kraków	MUJ
39	Willem Jansz Blaeu	T	Amsterdam	1640	67	Żagań	KA
40	Willem Jansz Blaeu	C	Amsterdam	1640	67	Żagań	KA
41*	Josef Georg Boehm	T	Insbruck	1840s		Kraków	MUJ
42	John Cary	C	London	1799	54	Poznań	BUUAM
43	John Cary	T	London	1806 [?]	6	Nałęczów	Kp
44*	John & William Cary	T	London	1816–1824	16	Warsaw	BW
45	Vincenzo Coronelli	T	Venice	1688	110	Nieborów	PRN
46	Vincenzo Coronelli	C	Venice	1693	110	Nieborów	PRN
47	Vincenzo Coronelli	T	Venice	1688 or 1693?	110	Poznań	RMNP
48	Louis Charles Desnos	C	Paris	1770	26	Warsaw	ZKBN
49	Louis Charles Desnos Jean-Baptiste Nolin	T	Paris	1760	26	Warsaw	ZKBN
50	Louis Charles Desnos	C	Paris	1768	32	Kraków	MNK
51	Louis Charles Desnos	T	Paris	1768	32	Kraków	MNK
52	Jean Baptiste Delure	C	Paris	1705	16	Częstochowa	KJG
53	Johannes Deur	T/ C	Amsterdam	1740	6	Kraków	MUJ
54	Johann Gabriel Doppelmayr	C	Nuremberg	1736	10	Gniezno	BAG
55*	Johann Gabriel Doppelmayr	C	Nuremberg	c.18th cent.	15	Jelenia Góra	JG
56	Johann Gabriel Doppelmayr	C	Nuremberg	1730	20	Kraków	MNK
57	Johann Gabriel Doppelmayr	C	Nuremberg	1730	20	Wrocław	MUWr
58	Johann Gabriel Doppelmayr	T	Nuremberg	1730	20	Wrocław	MUWr
59	Johann Gabriel Doppelmayr	C	Nuremberg	1728	32	Gdańsk	BPAN
60	Johann Gabriel Doppelmayr	C	Nuremberg	1728	32	Wrocław	MNWr
61	Johann Gabriel Doppelmayr	T	Nuremberg	1728	32	Kraków	MUJ
62	Johann Gabriel Doppelmayr	C	Nuremberg	1728	32	Kraków	MUJ
63	Hans Dorn	C	Buda/ Hungary	1480	40	Kraków	MUJ
64	Johann Friedrich Endersch	C	Elbląg/ Poland	1740	7.3	Gdańsk	MMGd
65	Schreibers, Erben (M. Rieding)	T	Leipzig	1840	32	Wrocław	Kp
66	Johann Georg Franz	T	Nuremberg	1808	32	Wrocław	MUWr
67	Geographische Institut Weimar	C	Weimar (Germany)	1805	10	Gniezno	BAG
68	Geographische Institut Weimar, Carl Ferdinand Weiland	T	Weimar (Germany)	1846	30	Kraków	MUJ
69	Gilphy	C		1800	60	Warsaw	MNW
70	Matthäus Greuter	T	Roma	1632	50	Poznań	BUUAM
71*	Franz Ludwig Güssefeld	C	Weimar (Germany)	c.1805?	9	Cieszyn	MSC
72	Isaac Habrecht	C	Strasbourg	1630	20	Wrocław	MUWr
73*	Hoene-Wronski	T	Warsaw?	before 1853	32	Warsaw	PK
74	Jodocus Hondius II	C	Amsterdam	1623/1630	44	Warsaw	BES
75	Josef Jüttner	T	Prague	1827	35	Wadowice	ŁO
76*	Josef Jüttner	T	Prague	1839	62	Cieszyn	KC
77*	Kiepert KG Buchhandlung	T	Berlin	1846	31	Wrocław	MUWr
78	Johann Georg Klinger	T	Nuremberg	c.1840	20	Kraków	MUJ
79	Johann Georg Klinger	T	Nuremberg	1805	31.5	Wrocław	MNWr
80	Johann Georg Klinger	C	Nuremberg	1792	62	Kórnik	KPAN

81	Jacob Floris van Langren	T	Amsterdam	1586	50	Wrocław	BAW
82	Gerard Mercator	T	Louvain	1541	41	Kraków	MUJ
83	Gerard Mercator	C	Louvain	1551	41	Kraków	MUJ
84	Gerard Mercator	C	Louvain	1551	41	Toruń	KKT
85*	Gerard Mercator	C	Louvain	1595	41	Poznań	BUUAM
86	Jean Pigeon	T	Paris	1717	7	Wrocław	BWŕ
87	J.G. Plütos	T	Dresden	1828	24	Kraków	MUJ
88	B. Ritter, J. David	T		1839	11	Cieszyn	MSC
89	Franz Leopold Schöninger	T	Vienna	1841	23	Kraków	MUJ
90	John Senex	C	London	1725	30	Warsaw	ZKW
91	Eduard Sérin	T	Paris	c.1830	11	Warsaw	MNW
92	Gerard & Leonard Valk	C	Amsterdam	1715	46	Wrocław	MUWŕ
93	Didier Robert de Vaugondy	T	Paris	1792	30	Poznań	RMNP
94	Didier Robert de Vaugondy	C	Paris	1792	30	Poznań	RMNP
95	Gilles & Didier Robert de Vaugondy	T	Paris	1751	45	Kraków	MUJ
96	Gilles & Didier Robert de Vaugondy	C	Paris	1751	45	Kraków	MUJ
97	Erhardt Weigel	C	Jena	1699	36	Wrocław	MUWŕ
98	Thomas Wright H & Dollard	C	London	Before 1750	32	Poznań	BUUAM

Institutions

BAG Biblioteka Archidiecezjalna w Gnieźnie [Archdiocesan Library in Gniezno]

BAW Biblioteka Archidiecezjalna we Wrocławiu [Archdiocesan Library in Wrocław]

BES Biblioteka Wyższego Seminarium Metropolitalnego Duchowego w Warszawie [Library of the Higher Metropolitan Seminary in Warsaw]

BPAN Biblioteka Państwowej Akademii Nauk w Gdańsku [Library of the Polish Academy of Sciences in Gdańsk]

BUUAM Biblioteka Uniwersytecka Uniwersytetu Adama Mickiewicza [Library of the Adam Mickiewicz University]

BW Biblioteka Uniwersytecka Uniwersytetu Warszawskiego [Library of Warsaw University]

BWŕ Biblioteka Uniwersytecka Uniwersytetu we Wrocławiu [Library of Wrocław University]

BWUW Biblioteka i Wydawnictwo Wydziału Geografii i Studiów Regionalnych Uniwersytetu Warszawskiego [Library and Publishing House of the Faculty of Geography and Regional Studies at Warsaw University]

IGiGP Instytut Geografii i Gospodarki Przestrzennej Uniwersytetu Jagiellońskiego [Institute of Geography and Spatial Management at the Jagiellonian University]

JG Muzeum Karkonoskie w Jeleniej Górze [Karkonosze Museum in Jelenia Góra]

KA Klasztor Augustynów w Żaganiu [Augustinian Monastery in Żagań]

KC Książnica Cieszyńska [Cieszyn Library]

KJG Klasztor oo. Paulinów na Jasnej Górze [Jasna Góra Pauline Monastery]

KKT Książnica Kopernikańska w Toruniu [Copernicus Library in Toruń]

Kp kolekcje prywatne [private collections]

KPAN Biblioteka Państwowej Akademii Nauk w Kórniku [Library of the Polish Academy of Sciences in Kórnik]

LO Liceum Ogólnokształcące w Wadowicach [Secondary School of General Education in Wadowice]

MMG Muzeum Morskie w Gdyni [Maritime Museum in Gdynia]

MMGd Narodowe Muzeum Morskie w Gdańsku [National Maritime Museum in Gdańsk]

MNK Muzeum Narodowe w Krakowie [National Museum in Kraków]

MNP Muzeum Narodowe w Poznaniu [National Museum in Poznań]

MNW Muzeum Narodowe w Warszawie [National Museum in Warsaw]

MNWŕ Muzeum Narodowe we Wrocławiu [National Museum in Wrocław]

MOT Muzeum Okręgowe w Toruniu [Regional Museum in Toruń]

MP Muzeum im. Przypkowskich w Jędrzejowie [Przypkowski Museum in Jędrzejów]

MSC Muzeum Śląska Cieszyńskiego [Museum of Cieszyn Silesia]

MUJ Muzeum UJ [Jagiellonian University Museum]

MUWŕ Muzeum Uniwersytetu Wrocławskiego [Wrocław University Museum]

PK Pałac Krasieńskich, Biblioteka Narodowa [Krasieński Palace, National Library]

PRN Pałac Radziwiłłów w Nieborowie, Muzeum Narodowe w Warszawie [Radziwiłł Palace in Nieborów, National Museum in Warsaw]

RMNP Ratusz Poznański, Muzeum Narodowe w Poznaniu [Poznań Town Hall, National Museum in Poznań]

ZKBN Zbiory Kartograficzne Biblioteki Narodowej [Cartographic Collection, National Library]

ZKW Zbiory Kartograficzne Biblioteki Narodowej w Wilanowie [Cartographic Collection in Wilanów, National Library]

Notes

- 1 T. Przypkowski was a famous Polish historian of science and art historian. As one of the best known gnomonists, he calculated and designed many sundials, many of which he made himself. Among others, in the 1960s, he designed seven for Flamsteed House at the Royal Observatory in Greenwich. They did not survive. However, in 2012, Royal Museums Greenwich reconstructed his Noon Dial. His father, Feliks Przypkowski (1872–1951), collected sundials from 1895 for which he created a museum in Jędrzejów.
- 2 The inventory results were not published in full. The materials are stored in the archives of the Przypkowski family in Jędrzejów.
- 3 Olszewicz (1967). The inventory of the globes was completed in 1965 (Bernleithner 1973). B. Olszewicz was a Polish geographer, famous historian of geography and cartography, Professor at the University of Wrocław. He was a co-founder of the Polish Geographical Society (in 1918) and a member of the International Academy of History of Science in Paris.
- 4 J. Piasecka was a geographer, a specialist in Polish language globes, and founder of the Globe Section at the Polish Cartographic Society.
- 5 B. Olszewicz, 'Alte Globen in Polen', *Der Globusfreund*, No. 15/16, 1967, pp. 263–77.
- 6 E. Bernleithner, 'Alte Globen in Österreich und in Polen', *Studia z Dziejów Geografii i Kartografii*, 1973, pp. 227–249.
- 7 The Commonwealth of Poland (Polish–Lithuanian Commonwealth, 1569–1795) was a state that comprised the Kingdom of Poland and the Grand Duchy of Lithuania. During the consecutive partitions (1772, 1793 and 1795) the lands were annexed by neighbouring countries: Prussia, Russia and Austria. Poland regained independence in 1918 with different boundaries, while the present boundaries were delineated in 1945.
- 8 The oldest Polish institution of higher education is the Jagiellonian University, established in 1364 as *Studium Generale*. Its name changed: Kraków Academy or University of Kraków (1400–1782), Main Crown School (1782–1801), Main School of Kraków (1814–1816). In 1818 the name Jagiellonian University was adopted and used in this paper.
- 9 The Archives of the Monastery in Jasna Góra.
- 10 Archives of the Jagiellonian University. The globes belonged to the collections of scientific instruments and art monuments kept at the Collegium Maius Library. They were used for teaching. Some instruments (e.g. surveying) were loaned to teachers and students. Unfortunately, due to the wars in the 17th and 18th centuries, fires and loss of archives during World War II, many did not survive. There are no complete lists of objects, and their existence can only be inferred.
- 11 The suppression of the Jesuit Order in 1773 led to the establishment of the Commission of National Education.
- 12 J. Śniadecki was a famous Polish astronomer, mathematician, geographer and philosopher, professor at the Jagiellonian University.
- 13 Table 2 Nos: 7, 9, 11, 22, 43, 52, 65, 69, 75, 88, 98.
- 14 Table 2 Nos: 6, 13, 17, 18, 20, 21, 23, 41, 44, 55, 71, 73, 76, 77, 85, 89.
- 15 For instance, the sphere of Blaeu's globe from the Museum in Cieszyn is 23 cm (French and Kapalski, 2011), not 32 cm (Olszewicz 1967) in diameter.
- 16 The globe was probably made by Thomas Wright II (fl.1730–1773) in London. Unfortunately, only the base has survived, information about the manufacturer from University document.
- 17 Dr Rafał Mielerski, verbal information.
- 18 Olszewicz (1967).
- 19 Piotr Galik, verbal information. The Ossolineum were unable to provide information about the institutions with which the professor was associated. The National Ossoliński Institute or

- Ossolineum, is an historic cultural foundation and publishing house. Ossolineum is one of the most important and oldest centres of Polish culture, founded in 1817 by Józef Maksymilian Ossoliński (1748–1826) in Lviv. One of the largest and most valuable collections of books, manuscripts, maps and autographs in Poland and specialising in Polish and Slavic humanities. After World War II, it was partially transferred to Wrocław. Currently, it is the national foundation. A large part of the collection remained in Lviv, after 1945.
- 20 Stefan Butryn, 'Tajemnice Starego Dworu', 2001, portal Naleczów on 16 July 2001 <https://www.naleczow.com.pl/turystyka/wille/89-tajemnice-starego-dworu.html>
- 21 Ewa Leszczyńska, Katarzyna Toporska, verbal information.
- 22 Jagiellonian University Museum.
- 23 <https://www.wilanow-palac.pl/files/Warszawa-Wilanow-porcelana-publikowane.pdf> item. 81
- 24 Jagiellonian University Museum.
- 25 M. Taborska, 'Dziewiętnastowieczny plastyczny globus Ziemi w zbiorach Instytutu Geografii i Gospodarki Przestrzennej Uniwersytetu Jagiellońskiego w Krakowie', *Polski Przegląd Kartograficzny*, No. 42: 33, 2010, pp. 248–51.
- 26 Jagiellonian University Museum.
- 27 Catalogue of the Wrocław University Museum.
- 28 Anna Szczodrak, verbal information.
- 29 Irena French, Maksymilian Kapalski (eds.), 'Instrumenty astronomiczne i naukowe z kolekcji Leopolda Jana Szersznika w zbiorach Muzeum Śląska Cieszyńskiego', Cieszyn: Muzeum Śląska Cieszyńskiego, 2011.
- 30 J. Babicz, 'The Terrestrial Globe of J. M. Hoene-Wroński (1776–1853) as an Illustrative Object of the System of Absolute Philosophy', *Der Globusfreund*, No. 25/26, 1978, pp. 265–71.
- 31 French and Kapalski, (2011).
- 32 Deposit database of the Jagiellonian University Museum.
- 33 Rafał Mielerski, verbal information.
- 34 Jagiellonian University Museum.
- 35 Anna Szczodrak, verbal information.
- 36 T. Estreicher, 'Globus Biblioteki Jagiellońskiej z początku w. XVI', *Rozprawy Wydziału Filologicznego Akademii Umiejętności w Krakowie*, 1900, vol. 32., pp. 96–105; Bożena Modelska-Strzelecka, 'Globus Jagielloński', Kraków: Zeszyty Naukowe Uniwersytetu Jagiellońskiego, 1974, pp. 9–35; M. Taborska, 'Złoty Globus Jagielloński ze zbiorów Muzeum Uniwersytetu Jagiellońskiego – niezwykle obiekt z fascynującą historią', *Opuscula Musealia*, No 26 (in publication); M. Taborska and M. Banaś, 'The Jagiellonian Globe as a mechanical armillary sphere – history, construction, operation', *Der Globusfreund*. (submitted for publication)
- 37 Taborska and Banaś (2020).
- 38 J. Babicz, 'The Terrestrial Globe of J. M. Hoene-Wroński (1776–1853) as an Illustrative Object of the System of 'Absolute Philosophy', *Der Globusfreund*, No. 25/26, 1978, pp. 265–71.
- 39 R.T. Prinke, 'Uczeń Wrońskiego – Éliphas Lévi w kręgu polskich mesjanistów', *Pamiętnik Biblioteki Kórnickiej*, 2013, No30, pp. 153–54.
- 40 M. Bylica was an astronomer, astrologer and physician. He lectured at the universities of Padua and Bologna, then in Hungary (Academia Istropolitana and Academia in Buda). Court astrologer and physician of the Hungarian king Matthias Corvinus (r. 1458–1490). Hans Dorn (maker of scientific instruments), made for Bylica a set of three astronomical instruments: torquetum, large astrolabe and celestial globe with astrolabe. Professor of instruments, he bequeathed his instruments and books to the Jagiellonian University. Currently they are stored at the Jagiellonian University Museum.
- 41 J. Brożek (*Joannes Broscius*) was a polymath, a mathematician, astronomer, physician, cartographer, surveyor etc., rector of the Jagiellonian University. He was the first Polish science historian.

Among others he documented the life and research of Nicolaus Copernicus. He bought the globe during his research stay in Italy (1623–28) which already then, had historical significance.

42 Olszewicz (1967), p. 263.

43 Olszewicz (1967), p. 263.

44 T. Czacki was a Polish historian, economist and educational activist, co-founder of the Warsaw Society of Friends of Sciences. He founded Krzemieniec Lyceum, so-called 'the Volhynian Athens'. It was a model high school, educational and cultural centre.

45 Ewa Wyka, '... Ciekawym wiedzieć i widzieć skutki... czyli dzieje i znaczenie kolekcji przyrządów naukowych Stanisława Augusta', Kraków: Księgarnia Akademicka, 2015, p. 58; and K. Kozica, 'Zarys historii globusów i ich datowanie' [in:] Grażyna Połuszejko, Kazimierz Kozica (ed.), '100 Globusów na 100-lecie ...', 2018, pp. 22–36.

46 'Inwentarz Obserwatorium Astronomicznego zawierający w sobie opisanie wszystkich instrumentów...', Kraków, 1792 (manuscript), items A 17 and A 18.

47 Wyka (2015), annex 2, p. 247.

48 Op. cit., p. 106, apart from Endersch's globes; we do not know what happened to them.



49 Originally from the Jesuit Collection in Poznań, Inwentarz... (1792), item 4.1 and 4.2.

50 Jagiellonian University Archive, manuscript 398, cards 14–15, after Wyka 2015 p. 107.

51 Inwentarz... (1792), items 4.3 and 4.4.

52 Inwentarz Gabinetu Fizykalnego w c.k. Uniwersytecie Jagiellońskim w Krakowie, sporządzony w roku 1883 staraniem Profesora Dra Wróblewskiego', Kraków, 1883, (manuscript), item XI. 1.

53 Inwentarz... (1883), item XI.10.

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Lucas Janszoon Waghenaer, 'Universe Europe Maritime Eiusque Navigationis Descriptio. General Paschaerte van Europa', circa 1583. Sold for £6000 (March 2019).

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EDMUND HALLEY'S WORLD MAP (1701) WITH COMPASS VARIATIONS

Re-issues by Reinier and Josua Ottens in Amsterdam between 1703–1745

Hans Kok

This article was previously published in Caert-Thresoor the Dutch magazine for the history of cartography in its 4th issue of 2018. The article has been translated and adapted slightly for international readers.

Edmund Halley (1656–1742), the famous English scientist – who also lent his name to the well-known comet – made a trip of exploration with the *Paramour* between 1698 and 1700, intending to determine the variation of the magnetic compass for a large number of positions worldwide on the high seas. The results were first published in 1701 in a world map with isogon lines – imaginary lines on the earth's surface where the compass variation is constant (Fig. 1). On Halley's map, these lines were lacking for the Pacific Ocean, as insufficient observations had been made there.

Compass variation

Compass variation is the angular difference between magnetic north (the direction indicated by the compass needle) and true north (the direction of the geographical North Pole on earth). Its importance for navigation lies in the need to correct courses for steering by the magnetic compass, to ensure that the desired true course over the earth's surface is followed. The course from A to B is measured in a chart, relative to a meridian of longitude, which by definition runs true north. Magnetic variation, also called magnetic declination on occasion, may be westerly or easterly. In the first case, magnetic north is to the west of true north, in the latter case magnetic north is east of it. Its maximum value theoretically amounts to 180 degrees on a line between both poles, that is between the constantly moving magnetic North Pole in northern Canada and the geographical North Pole. At sea, the maximum value is in the order of 40 degrees, for example off the coast of Labrador, which certainly is a value worthy correcting. In case of an inadvertent error, when calculating a course (e.g. applying 'plus' instead of 'minus') the resulting course error would be 80 degrees off course, resulting in an almost

perpendicular progress to the desired track. Smaller variation values will also considerably affect long-range navigation, causing an off-track situation of one mile for each degree of error over every 57 miles covered.

Before Halley's map, the magnetic compass variation needed to be calculated a number of times a day from bearings taken from the sun. This could be done without using astronomical tables but only at noon sharp. However, taking bearings at either sunrise or sunset, with the use of proper tables would also yield the value of the magnetic variation. Additionally, taking bearings at both sunrise and sunset would allow the average value to be determined, as applicable to the midday position without the need of tables. Compass variation is subject to a slow change over time, as the position of the magnetic pole is changing; consequently, the predicted annual change needs to be reported on charts. The current value can be applied until an updated chart becomes available.

Geographical longitude at sea; from nought to ought

Robert Dudley (1574–1649) was the first to mention values for magnetic variation in 1646 on his charts in the *Dell'Arcano del Mare* sea atlas. He took spot values for positions far apart. He reported values to a quarter of a degree in resolution and 'Grecale' (northeast) and 'Maestrale' (northwest) for westerly and easterly variations. These names were borrowed from antiquity to describe the wind directions in the Mediterranean Sea (Fig. 2).

Halley's chart was first published by Mount & Page in 1701 in their sea atlas *The English Pilot, Vol. IV, describing the West-India Navigation*. Soon after, in 1703, it was also published by Reinier and Josua Ottens in Amsterdam. Thereafter it was

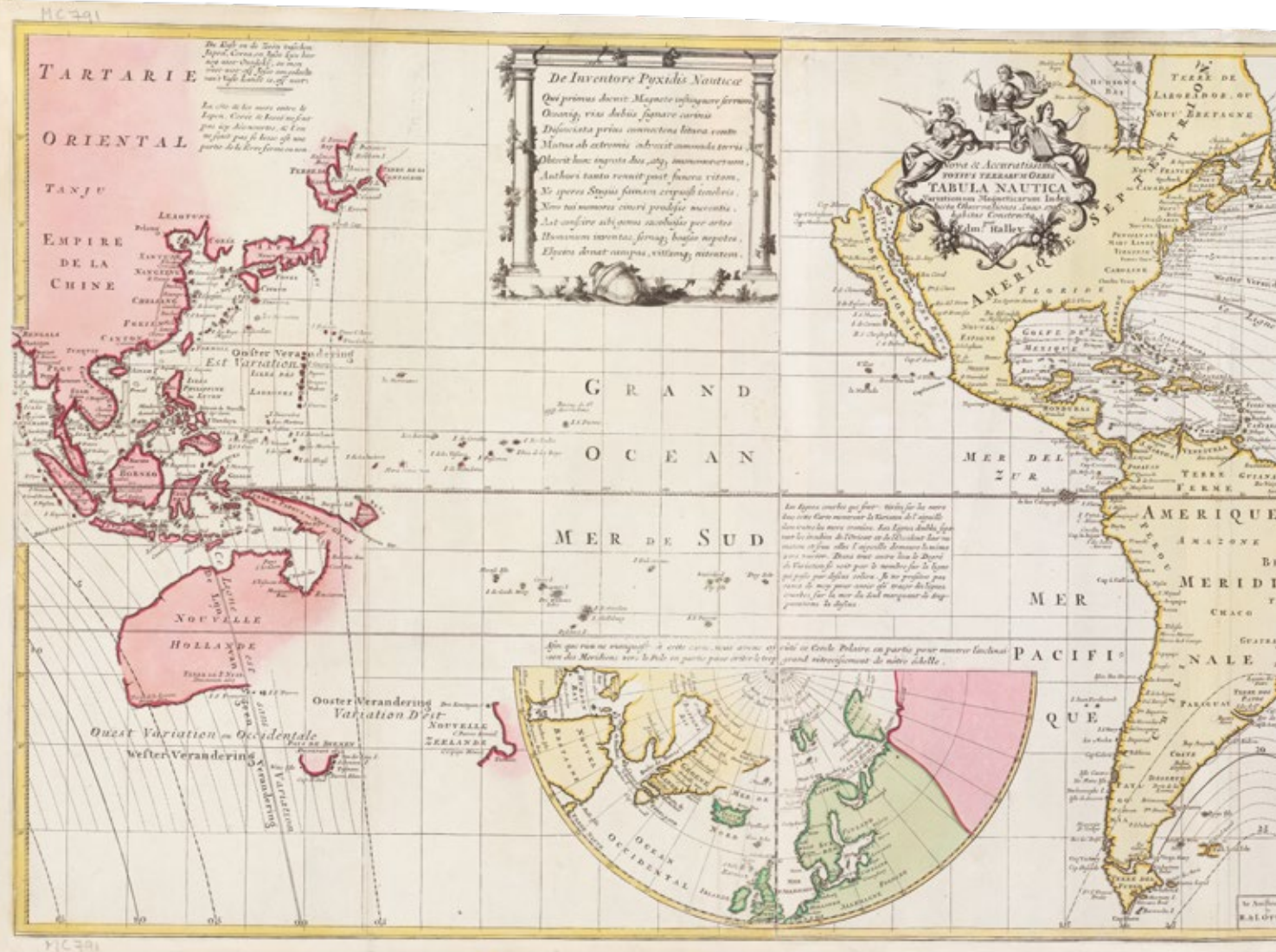


Fig. 1 Nova & Accuratissima/Totius Terrarum Orbis/TABULA NAUTICA/Variationum Magneticarum Index/Juxta Observaciones Anno 1700/habitas Constructa/per/Edm: Halley. World map in Mercator projection, copper engraving on paper, 52.5 x 145.5 cm, scale at the equator: 1:33 million. RE-issue of the well-known Halley chart of 1701 by Reinier and Josua Ottens (fourth state, after 1730). (HEK Collection)

modified a number of times and reprinted; the last Dutch version is most probably the 1745 Ottens issue in the *Atlas van Zeevaart en Koophandel door de Geheele Wereldt* (Atlas of Navigation and Commerce for the Whole World).

Petrus Plancius (1552–1622), who at the end of the sixteenth century moved from Flanders to Amsterdam, was a Protestant clergyman and active cartographer. Having acquired Iberian sea charts, he compiled his own and instructed navigators. He exerted considerable political influence, playing a key role in establishing the Dutch East India Company (VOC) in the Netherlands. Initially, he held the opinion that magnetic variation could be used as a substitute for establishing longitude on earth which could not be determined at sea. He

assumed that magnetic variation would vary over eight sectors on earth from zero to maximum, down to a negative maximum and then back starting the next geographical sector at zero again. This concept turned out to be incorrect, but in the absence of geographical longitude, variation could sometimes be used to limit an east or westward drift off track by defining a limiting value on condition that the variation would not change too quickly away from the stipulated limit. An example can be found below the east coast of Brazil, where a variation limit would be stipulated to avoid too close proximity to the coast. At locations where the isogon lines run predominantly north-south they may, in a way, serve as a substitute for longitude.



Consultation and reference, not actual navigation

A French-language catalogue of the stock available from Reinier and Josua Ottens exists in the Herzog August Bibliothek in Wolfenbüttel, Germany. It is dated between 1737 and 1750. The chart, discussed in this article, is mentioned under entry number 15. Herman Moll published a similar world chart, albeit in a slightly smaller format, in London in 1719. On later Dutch issues of Halley's chart, the compass variation was updated; also, sea currents, trade winds and monsoons were added. This was not yet the case in the first Dutch state of 1703. The chart is of exceptional size, as a result of showing 'Nouvelle Hollande' (Australia) twice, in order to cover a crossing of respectively the Pacific Ocean and the Atlantic/Indian Ocean on one chart half. A matter of note is the absence of isogonal lines on the Pacific Ocean. Halley explains that he was unable to make



Fig. 2 Detail of a Dudley/Lucini chart of the Pacific Ocean (Florence, 1646, 1661), mentioning a fixed variation value of 4 degrees 'Maestrale'. (HEK Collection)



Fig. 3 Detail of the Latin title cartouche, referring to Edmund Halley's observations in 1700. (HEK Collection)



Fig. 4 Detail of the fourth state with imprint of R. and J. Otten in Amsterdam, at the lower border. (HEK Collection)

a sufficient number of observations to achieve this goal. California is still shown as an island with the three-pronged northern coastline. The chart's title as well as the reference to Edmund Halley's origin is shown in one of the three Latin cartouches (Fig. 3). Reinier and Josua Otten's imprint has been added centrally in the lower margin (Fig. 4).

The chart has been made according to a Mercator

projection; as a consequence, no scale bars are shown, because in a Mercator projection the scale will vary over the chart, depending on geographical latitude. The chart's scale equals 1:33,000,000 at the equator. The Arctic areas cannot be shown either, as in a regular Mercator chart both poles would be at infinity from the equator. An inset map, at the lower left, shows half of the Arctic area in azimuthal



Fig. 5 Inset of a half Polar map, referring to the Mercator projection with its progressive scale increase in this region. (HEK Collection)

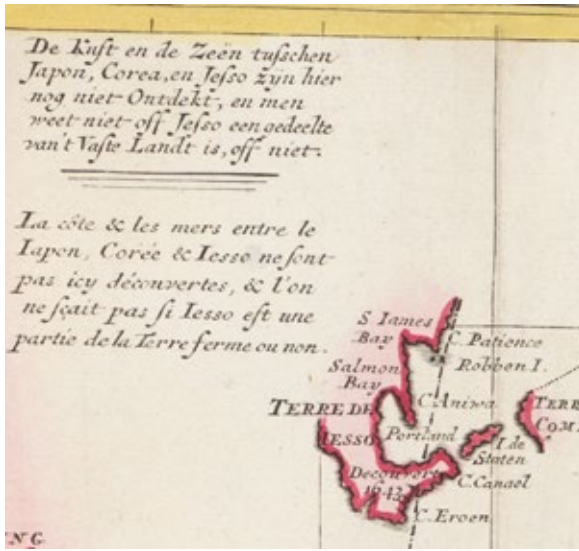


Fig. 6 Detail of the fourth state with text in the Sea of Japan, explaining that the area has not yet been charted adequately and that The Land of Jesso could well be part of the mainland. (HEK Collection)

projection with an explanation, in French, setting out why this is necessary (Fig. 5). Noteworthy is that the Greenwich meridian is chosen as the prime meridian, a remarkable choice for a Dutch chart; most probably the selection had already been made by Halley for his first 1701 chart and later retained by Ottens.

In addition to the Latin cartouches, the chart shows notes and toponyms in Dutch and French. The customary indication of 'Oostering' and 'Westering' for compass variation has been replaced by 'Óostelijke Verandering' and 'Westelijke Verandering' respectively (Change for the East and Change for the West). The Polar chart section also shows English inscriptions, for example, 'Barentsz wintered here in 1597' at the northern tip of Novaya Zemlya. Clearly, the chart was destined for consultation rather than navigation proper. The compass roses with their rhumb lines are missing, although they would be shown normally on navigation charts. In need, the chart could be used for navigation with the aid of a protractor and a pair of compasses, but the scale would be so impractically small to be of little use. There is a note near Japan which mentions that the area between Japan, Korea and Jesso (Hokkaido) has not yet been charted and that it is unknown whether Jesso is part of the mainland or not (Fig. 6). Halley did not use isolated spot values for variation as Dudley had; he is the first



Fig. 7 Detail of the fourth state with isogonals and 0-degree isoline as boundary between Westerly and Easterly variation. (HEK Collection)

to present the change in variation as isogonal lines, lines of equal compass variation. An important ergonomic feature which prevented errors and was visually informative is the coding of the lines in tens (solid lines), fives and ones (different stippling). The line of zero compass variation (isoline) is shown as a double solid line, ensuring that a low variation value could not inadvertently be read with the wrong sign (Fig. 7).

Delineation of outbound and homebound routes

A most interesting feature of this chart is the presentation of sea routes which are adapted according to the season. Shown are the outbound and homebound routes from Patria (the Netherlands) in Western Europe to the Far East; they are identified and colour coded. Remarkably, the phantom island St Helena Nova is no longer shown (south of West Africa) and the islands Dina and Marsveen (now Prince Edward Island and Marion Island) to the southeast of the Cape of Good Hope are shown with their corrupted Dutch toponyms. The latter islands were named after the ships that first sighted them in 1663. In the Indian Ocean, a larger island is shown halfway between Australia and South Africa; only one name is reported (St Paulo) but Amsterdam Island is missing. These islands served as waypoints for the Dutch en route to the Sunda Straits; they were

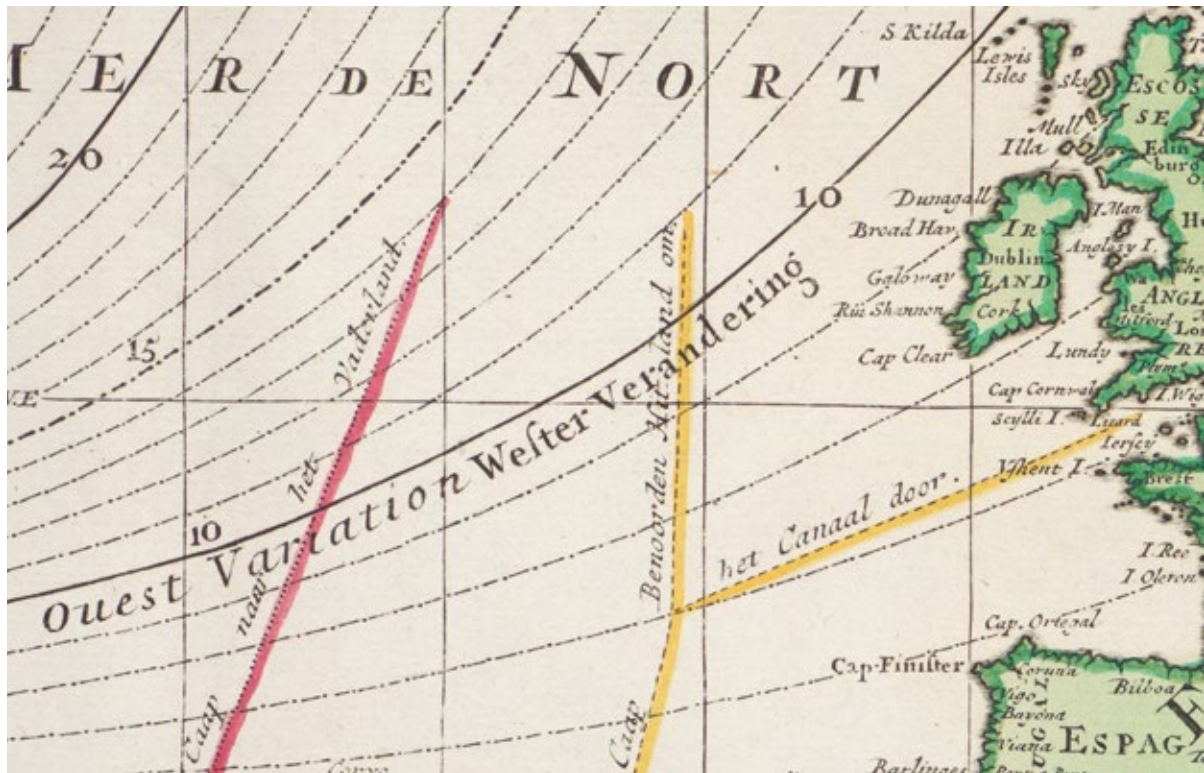


Fig. 8 Detail of the fourth state showing red and yellow sea routes (inbound and outbound) from/to the Far East. Note the homebound route travels north around Scotland, not through the English Channel. (HEK Collection)

uninhabited at the time and easily missed in the dark or in inclement weather. On our Ottens chart, the navigation routes from Western Europe to Batavia (now Djakarta), Ceylon (now Sri Lanka) and India are presented in yellow; the return routes to Patria are shown in red. The outbound route selection offers a choice between sailing either through the English Channel or ‘North-around’ Scotland (Fig. 8). The decision depended on wind direction, the political situation, size of the fleet and risks of piracy. The so-called *Karrepad* (Wagon trail) – always shown off Africa to the north of the equator on VOC charts as the best way to cross the doldrums – is not presented here, but the track shown closely follows that route. In a later state a note appears in that area, warning of *Stiltens en Stormen*, the dreaded long periods of calm and gales in the intertropical convergence zone. The change of course thereafter to the southwest and later still south and east in order to intercept the westerly winds to the Cape of Good Hope is duly marked, also allowing to ‘straddle the latitude’ of the Cape for a safe arrival. Beyond the Cape, there are a number of route options. For destinations to Ceylon and India,

there is a route along the African coast west of Madagascar (the old Portuguese route to Goa) or one that continued east from the Cape before turning north to sail between Madagascar and Africa. Staying with the westerly winds much longer also was an option, turning due north at St Paul Island and passing through or north of the Maldives Islands (Fig. 9). A distinction is made according to the monsoon. During the West monsoon, to avoid cumbersome cruising against the wind, vessels aimed to arrive west and during the East monsoon to come up east of their destination. The final stretch then could be covered sailing before the wind which would have been much easier for a worn-out crew. The same principle applied to the Sunda Straits route to Batavia. Turning northeast from St Paul Island and the Tropic of Capricorn gave crews the option to arrive upwind of Sunda Straits. Verification of arrival position was done according to a simple rule: meeting a coast running east-west meant arriving below Java, which required a turn to the west to find the Sunda Straits. While coming up a coast running northwest to southeast meant Sumatra, which required a turn to starboard to

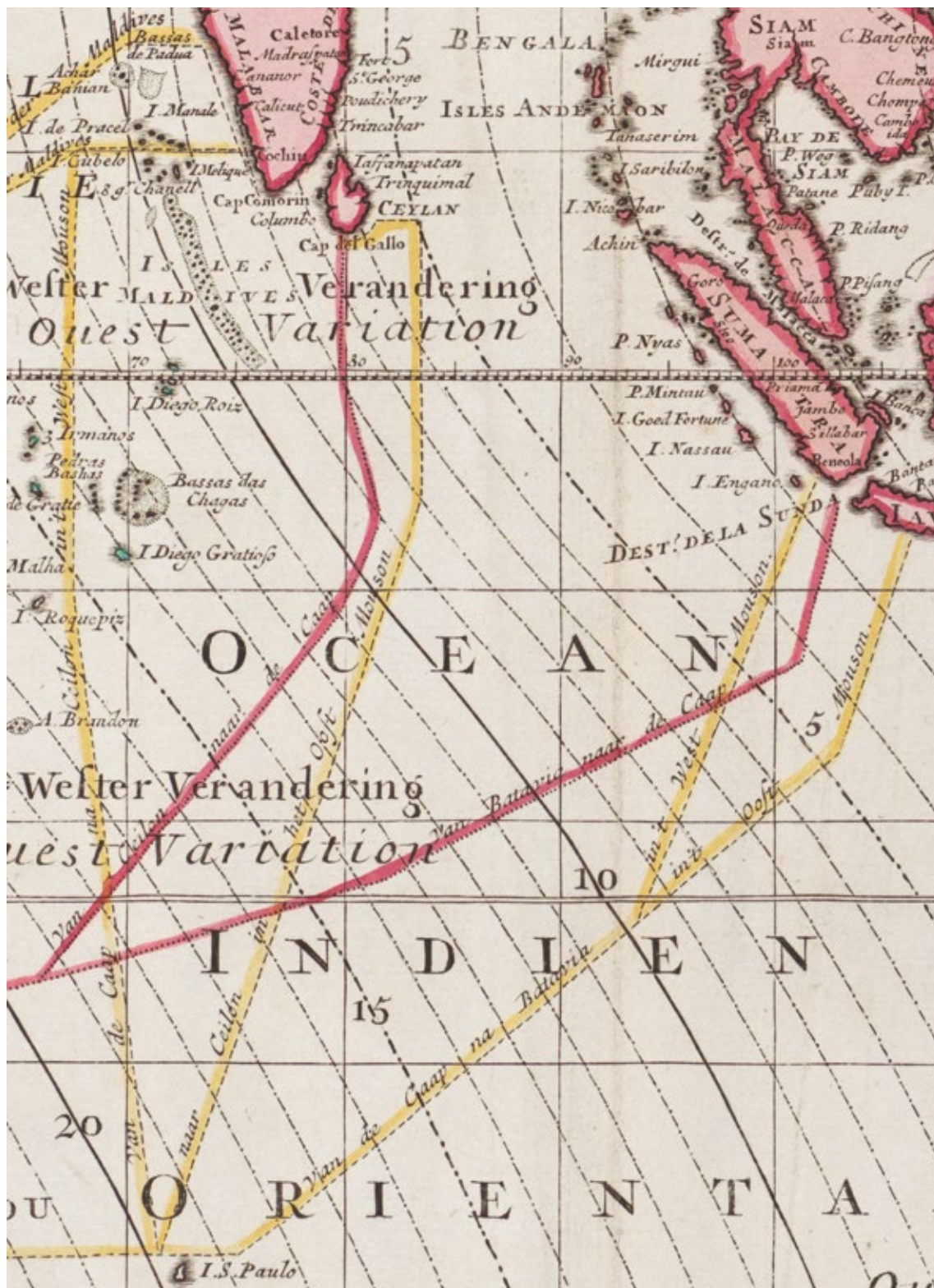


Fig. 9 Detail of the fourth state showing optional routes to Ceylon in yellow. (HEK Collection)

find the Strait. The red route for the return trip is logical for the same considerations. Clearly shown is that a low southern latitude was aimed for, but not so low as to miss the African continent altogether and sail out into the Atlantic Ocean instead. After identifying the coast at a less southerly latitude, following the coast south would lead to the Cape of Good Hope, albeit with a warning to give the dangerous shallows and rocks south of Cape Agulhas, the most southerly point of the continent, a wide berth. It was earlier known as the ‘Cape of the Needles’, where the magnetic variation had been zero degrees at the time the Cape was named by the Portuguese. Past the Cape of Good Hope, the homebound route went by St Helena and Ascension Island. The inbound route through the English Channel is not drawn, presumably richly laden vessels preferred the safer passage of passing north of Scotland, avoiding greedy neighbours and Dunkirk pirates (see Fig. 8). The VOC had smaller yachts cruising to the north of Scotland to provide incoming fleets and single stragglers with mail, fresh water and food. Also, information was supplied for the decision whether to continue to Amsterdam or seek the protection of the Danish/Norwegian king, by sailing into Bergen or Stavanger. The Dutch had a treaty with the Danish king to the effect that an incoming fleet could wait in relative safety for the Dutch Navy (‘Admiralty’) to arrive and escort them home.

Multiple states of the Halley/Ottens chart

At the time that this article was written, no research into the various states of the chart had been published. Luckily, it turned out that Dr Peter van der Krogt had delved into the subject during his research for the upcoming publication of *Koeman’s Atlantes Neerlandici* Volume V. The following information on the six states of the chart refers to his research. The first known state published in the Netherlands dates from c.1703, has a title in French along the upper border and the imprint of Pieter Mortier. This first state has no text in Dutch. On the second state the name of François Halma has been added in the title cartouche. A Dutch translation of the French explanatory texts has been supplied (see Fig. 6). Thereafter, the Ottens Brothers obtained the copperplates; initially they only removed Halma’s name and added their own (see Fig. 4) without any further alterations. This third state must have been published shortly after 1726. In the 1730s, they produced the fourth state, discussed in this article. To this they added the navigation routes, as seen on Figures 7–10. The fifth state of around 1740 presents real improvements (e.g. Spitsbergen) and corrects the situation north of Japan (see Fig. 1 for comparison). In the Arctic region new information obviously had become available and the area to the north of Japan is much improved now (Fig. 11). In the South Atlantic Ocean, the discovery of Cap de la Circoncision and a number of phantom

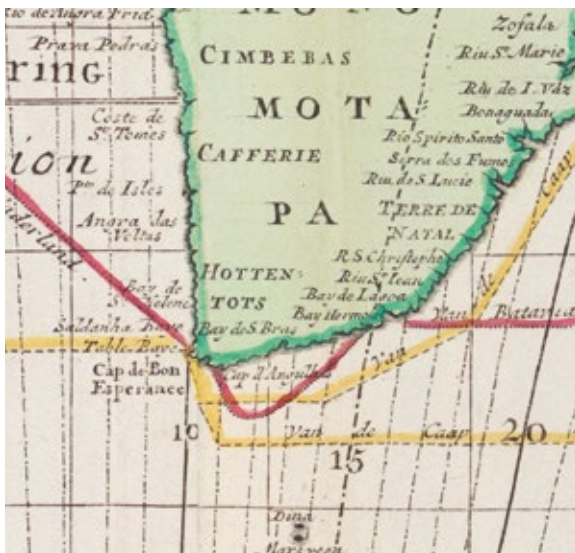


Fig. 10 Detail of the fourth state showing routes at the halfway stop at the Cape of Good Hope with Dina and Marsveen [sic] (now Prince Edward Island and Marion Island). (HEK Collection)



Fig. 11 Improved information to the north of Japan on the fifth and sixth states of c.1740 and 1745. (HEK Collection)



Fig. 12 Surprising information on the fifth and sixth states of c.1740 and 1745 in the South Atlantic Ocean. Terra Australis is marked and several phantom islands are included. (HEK Collection)

islands is reported. They were presumably sighted by the French discoverer Jean-Baptiste Charles Bouvet de Lozier on his ships *L'Aigle* and *Marie*. These names were translated into Dutch, as shown in the note *ontdekt door de Schepen d'Adelaar & de Maria in 1738 & 1739* (Fig. 12). These islands are reminiscent of Saxenburgh, the phantom island that appeared on VOC charts with the note *opgedaan door Willem Schellinger, Anno 1669*. It was repeatedly shown on charts of the VOC and Dutch West Indies Company since then. A northern cape of Australia is also shown as copied from a chart by Guillaume de l'Isle, although Bouvet had been unable to locate it. Surprisingly, however, the chart also depicts an outdated and incorrect rendition for Halley's routing (see Fig. 12). In the Indian Ocean the toponym Amsterdam is added to an island next to St Paul. Finally, on the sixth state, the prevailing winds and currents are given in hachuring with directional arrows. This state was bound into the *Atlas van Zeevaart en Koophandel door de Geheele Wereldt*, as published by the Ottens Brothers in 1745.

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Hans Kok is a retired airline captain and Management Pilot. He has co-authored two books with Günther Schilder on Dutch maritime charts 1580–1799. The most recent, *Sailing Across the World's Oceans, History & Catalogue of Dutch Charts Printed on Vellum 1580–1725*, was published in 2019. He has been collecting charts since 1981, initially focusing on those which documented the sea routes between Amsterdam and the East Indies. However, over the years his interests have broadened to include celestial and aviation charts. He is Chairman of IMCoS and on the Board of Editors of the Dutch magazine *Caert-Thresoor*. (hekholland@gmail.com)



Fig. 1 Ronald Vere Tooley pictured in 1984 with the Klenke atlas at the British Library. Courtesy of the author.

R.V. TOOLEY

Twentieth-century map trade pioneer

Valerie G. Newby (formerly Scott)

There is no doubt that R.V. Tooley ('Mick' to his friends) was pivotal in establishing the antiquarian map trade and inspiring an excitement for antique map collecting. He was an authority on early maps and their makers, and it was undoubtedly his enthusiasm, foresight and courage which provided the impetus to start the map trade, initially in Great Britain and later in Europe, the United States, and eventually worldwide. I was honoured to have known him.

Queen Victoria was still on the throne in 1898 when Ronald Vere Tooley was born in Islington, London. It was, in his own words:

*an enchanted world of hansom cabs and gas lamplighters who came with long poles at dusk to turn on each street lamp individually. No motor cars were on the streets, no planes in the sky, no electricity or television. The Pax Britannica prevailed in the world and the pound was really sterling.*¹

These reminiscences appeared in the introduction to a catalogue that marked the opening of a new map shop appropriately named R.V. Tooley Ltd. It was at 33 Museum Street close to the British Museum. Tooley was in his eighties at the time the shop was launched in 1979, and he did not run it personally but gave it his support and the benefit of his hard-earned and expansive expertise.

Tooley was educated at the City of London School and towards the end of World War I he enlisted in the Queen's Westminster Rifles. After his basic training, he became a Quarter Master Sergeant and was posted to France. He took part in the Battle of Cambrai where he was one of a hundred and twenty survivors from an initial force of four hundred men. In 1919 he was demobilised and having no career plans, he fell upon a catalogue of antiquarian books published by London dealer James Tregaskis (1896–1936) of Great Russell Street. Tooley was attracted to the idea of working with books and applied for a job at Francis Edwards Ltd which was based in Marylebone High Street, London. This was a lucrative time for booksellers, but with the Wall Street collapse in 1929,

economic depression set in and Tooley left Edwards to open The Atlas Bookshop just off Charing Cross Road. Here he started dealing in early maps and put pen to paper to write his first book entitled *Some English Books with Coloured Plates* (1935). The outbreak of World War II saw him taking a job as a telephone operator but his leisure time was still devoted to old and rare books and maps.

Working with Francis Edwards Ltd

After the War he rejoined Edwards and became one of its directors. Most of his remaining career would be spent running the firm's map department where he reigned supreme for half a century in a dusty first-floor room reached by a rickety old lift. He built up the department to be the biggest and most influential of its kind in the world (Fig. 2).

The late Kenneth Nebenzahl, a prominent map dealer in Chicago, who started his business in 1957, remembered how important the firm of Edwards was at that time. The majority of cartographic materials entering the marketplace arrived via London auction rooms where Edwards was a major player. The firm bought most of the atlases that came under the hammer.

The collecting of maps grew very slowly. To begin with a few single maps were slipped into a catalogue of atlases and then eventually merited an entire section or dedicated catalogue. In some reminiscences which Tooley wrote for *The Map Collector* he revealed a great deal about those early days and his role in them.

*It is a subject that has grown enormously in my lifetime ... Maps which are now recognised as beautiful and valuable parts of our heritage were not always appreciated and cherished as they are now.*²

It was the advent of the breakers which popularised map collecting.

*By selling each map from an atlas separately we opened up a field of pleasure to hundreds of people and a source of profit for themselves. This increased attendance in museum libraries and created new jobs, both in the academic and trade worlds. Libraries needed extra staff and the public was then in place to support articles, books, and even exhibitions on the subject.*³



Fig. 2 Map room in Francis Edwards's shop at 83 Marylebone High Street, London. Photograph by Richard Brown from his book *The London Bookshop Part 2* published by the Private Libraries Association in 1977. Courtesy of the Private Libraries Association.

The splitting of atlases has always been a controversial topic, particularly today when early material is so scarce, but it must be seen in context. When Tooley started work at the beginning of the last century there was an abundant supply of atlases and travel books, so plentiful in fact that staff at Edwards used maps, which had no value at the time, to package sold maps for mailing.

Tooley was a great believer in colouring maps and described these as having been 'coloured by an old hand'. In other words, the colouring was done by himself! Defending the practice, he argued that:

colouring has been appreciated in all ages so that traditionally and aesthetically there should be no objection to modern colour providing – and this is important – that it should be done in the style of its period (styles varied over the centuries) and by a competent colourist with a knowledge of the subject.⁴

Nebenzahl recalled how on his first buying trip he wrote to the firm to make an appointment with the famous Mr Tooley. He described how on arriving in the map department of their shop a gentleman appeared, thrust out his hand in greeting, thereby revealing four vest pockets in his jacket. Each contained dripping paint brushes. Tooley then joked about 'colouring by a contemporary hand' as he and his wife brightened up their maps with a paint brush.

Tooley's sociability and charm were part of his success. You bought a map and then adjourned to the

pub round the corner for a pint of beer and a chat. He had a great sense of humour and told many stories about his buying trips to the Continent when socialising was as important as the business of buying and selling. Revelry featured too in the 1950s when the International League of Antiquarian Booksellers was formed by a Swiss dealer named Kundig supported by other dealers in England, France and Holland. This association made a great impact on the map world as membership was a mark of reliability governed by strict rules of conduct. Yearly congresses were started in different capital cities which deepened confidence and encouraged more conviviality. They often lasted for five or six days and ended with a ball at which Mick would 'dance until the early hours' (one of his great loves was dancing). 'Those were the days when bookselling wasn't only a means of earning a living, but a way of life', he wrote. In Tooley's own words:

these were balmy days for collectors, dealers and librarians. Material was abundant, the larger dealers having shelves full of atlases, many in duplicate. Coloured maps by Blaeu of Germany, France, Spain and other European countries were sold for two shillings each in bulk. American dealers bought quantities and sold them to interior decorators.⁵

A favourite hunting ground was the stalls of lesser dealers in Caledonian Market off the Brecknock Road where on Fridays it was always possible to buy a good

map or two. Another activity at this time was that of 'runners', dealers who had no shop but made the rounds selling to other dealers. One of these was probably the first to persuade the big department stores to start selling maps, in particular coloured Speed maps which went to Liberty's and Harrods.

In general, Tooley was more interested in helping others to find maps than in personal acquisition although at times he did turn to collecting. For example, his collection of maps of Australia was sold to the National Library of Australia in Canberra. But he was better known for advising and helping many famous collectors throughout the world including Israel, Holland, Norway, Denmark, Germany and France, not to mention England, than in acquiring material for himself.

Two good friends, Bob Tollett and Rosejeanne Slifer, New York dealers, described him as:

an inspiration to two generations through his numerous works and generous assistance to all who sought it. Mr Tooley has probably done more to disseminate interest in cartography than anyone since Henry Stevens ... His relaxed and friendly attitude, along with the casual manner he wore his incredible knowledge, attracted and

*delighted us when we first met him at Francis Edwards. On reading his first book about the subject, Maps and Mapmakers, we were impressed by its clarity and the gracefully turned phrases, qualities we very soon discovered in the author himself.*⁶

Tooley as author

Tooley's career as an author was another way in which he shared his vast wealth of knowledge with the public. Dr Helen Wallis, Map Librarian at the British Library at the time, commented that the reference shelves 'bore witness to Tooley's prolific writings which launched more than a few collectors in their chosen hobby or vocation and have provided a basic literature for numerous librarians and historians of cartography'.⁷ A complete bibliography comprising 160 published items and compiled by Terry Kay was published in the *The Map Collector*.⁸

His first book, *Some English Books with Coloured Plates* (1935) was reprinted in 1954 and 1978. He followed this in 1949 with what became one of his most popular works, *Maps and Map-makers*, which made a massive impact on the collecting world selling some 50,000 copies.



Fig. 3 R.V. Tooley celebrating his 81st birthday and the launch of his book *The Mapping of Australia* (1979) at the home of his publisher Richard Leach of Holland Press. Courtesy of the author.

Another innovation by Tooley was what could be considered the first periodical, devoted to early maps, after *Imago Mundi: The Map Collectors' Circle* series of monographs. David Schrire, a South African collector, provided the financial impetus for this and saw to its despatch while Tooley attended to the editorial content and saw it to press. The series was on a variety of subjects connected to maps which were issued regularly to subscribers. It ran from 1963 until 1975 with 110 issues covering subjects as diverse as North American city plans, early maps of Australia, printed maps of Hertfordshire, and many more.⁹

After Schrire pulled out Tooley managed it alone for a few years but it got too much for him and he sold it to a dealer. Tooley had hoped that the new incumbent would continue to publish the series, but this never materialised. However, many of the monographs formed the basis for full-length reference books compiled by Tooley. These included *Collectors' Guide to Maps of the African Continent and Southern Africa* (Carta Press, 1967), *The Mapping of Australia* (Holland Press and Richard Arkway, 1979), *Tooley's Dictionary of Mapmakers* (Map Collector Publications, 1979), and its Supplement (1985), and *The Mapping of America* (Holland Press and Richard Arkway, 1980).

Tooley compiled his *Dictionary of Mapmakers* from a card index he kept at Edwards. Every time a map went through his hands, he recorded the title, mapmaker, publisher, and date before selling the work. This data was supplemented by visits every Saturday to the Map Room of the British Museum (which later became The British Library) or to the Royal Geographical Society Map Room in Kensington. Tooley was a constant visitor to these libraries and knew the staff personally.

Following his retirement from Edwards he joined his stepson Doug Adams and his step grandson Steve Luck in a new map selling business which became Tooley, Adams and Co. He paid frequent visits to London from his Norfolk home to give advice and plan new books.

For the last ten years of his life he acted as first editor and then associate editor of *The Map Collector* magazine. In essence he acted as a consultant and took a keen interest in its progress. He also contributed many articles, collations of atlases and a series on large-scale English county maps.

As a tribute to him Map Collector Publications compiled and published a much revised four-volume edition of *Tooley's Dictionary of Mapmakers* (1999–2004) which is still the only work of its kind and is consulted by map enthusiasts the world over.

To mark his long association with the British Library and for his 75th birthday, Dr Helen Wallis and her deputy Sarah Tyacke, published *My Head is a Map: A Festschrift for R.V. Tooley*,¹⁰ drawing from Henry Fielding's memorable line – 'Map me no Maps, Sir, my Head is a Map, a Map of the whole world' – for the book's title. In fact, Tooley was still working in the Map Room a few days before his death.

*It is still difficult to believe that Ronald (Mick) Tooley's visit to the Map Library of the British Library on October 9 1986, was his last, the final goodbye in an association of nearly seventy years. Typically, the occasion of his visit was to check various British maps with a view to our possible acquisition of some rare items. Our collections had been much enriched over the years by atlases and maps which Tooley's keen eye spotted as of interest.*¹¹

Dealer David Bannister described Tooley as 'the father of map collecting without whose efforts it is unlikely that many of us would be making a living in such a congenial way today'.¹²

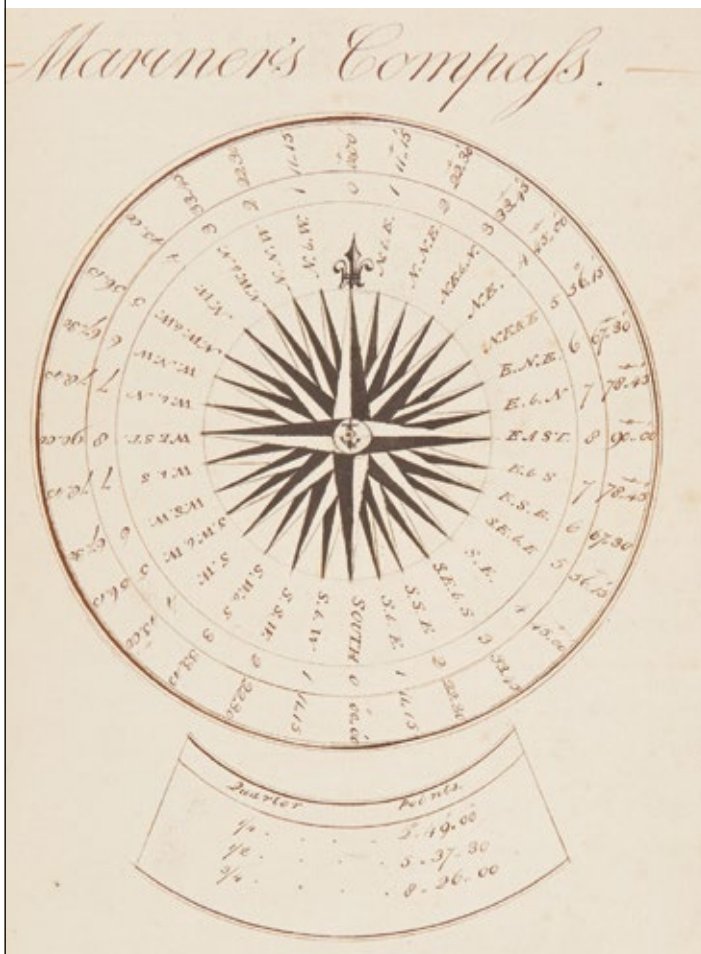
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-

Valerie G. Newby (formerly Scott) was editor and publisher of *The Map Collector* magazine (1977–2000), editor of the revised *Tooley's Dictionary of Mapmakers* in four volumes (2004), consulting editor of *Mercator's World* magazine, editor of the *IMCoS Journal* (2006–2012), author of four volumes of *County Maps and Histories* (Herts, Sussex, Berks and Bucks). She is currently Vice-Chairman of IMCoS.

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IMCS MATTERS

There are no entries for the regular 'Dates for your Diary' column. As already mentioned in the Chairman's Letter all our planned activities, nationally and internationally, have been swept away with the advent of the Covid-19 pandemic. However, plans are underway for the 37th International Symposium to take place in Brussels later next year, with destinations of Texas and Helsinki pencilled in for the following years.

Hopefully, circumstances will change for the better for us all over the next months and we can return to the drawing board to plan new events for the future and revive the Scotland trip which committee member Diana Webster had organised for us.

Remember, the journal is always looking for new contributors, so if you have a map/s or chart/s, an atlas, a travel account, a mapmaker, some cartographic ephemera that you would like to write about please send it in.

Treasurer on the accounts for 2019

The Corona virus lockdown and the cancellation of the London Map Fair means that it will not be possible to hold a physical Annual General Meeting this year. Arrangements may be possible for a virtual meeting which will be advised separately.

Our income has fallen slightly with a drop of £1,100 in advertising and a loss of a dozen members.


Eighteen months ago, when planning for 2019, there were plans for publicity, rationalisation of our archives and for restoring our volume of the *English Pilot* which did not come to fruition. As a result of these changes our actual expenditure has reduced by about £4,000. We have also benefited from having come to the end of the amortisation period (36 months) of our computer and software installations in 2016. These are working satisfactorily and no major expenditure is envisaged in 2020.

Our cash reserves remain strong and we should be able to weather the vicissitudes of Covid-19.
Jeremy Edwards

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The advertisement features a dark blue background. On the left, the text 'antiquariaat SANDERUS' is in white, with 'SANDERUS' in a larger, bold font. Below this is the address 'Nederkouter 32, 9000 Gent - Belgium' and contact information: 'Tel. +32 9223.3590 - Fax +32 9223.3971' and 'E-mail: sanderus@sanderusmaps.com'. Three logos are displayed: 'BU' (Belgian University), 'IAMA' (International Antiquary Association), and another circular logo. The central image is a highly detailed, colorful world map by Frederik de Wit from 1660, showing two hemispheres with intricate geographical details and decorative vignettes. Below the map is the text 'Frederik de Wit, 1660'. At the bottom, the text 'Early Antique Maps & Atlases' and the website 'www.sanderusmaps.com' are prominently displayed in white.

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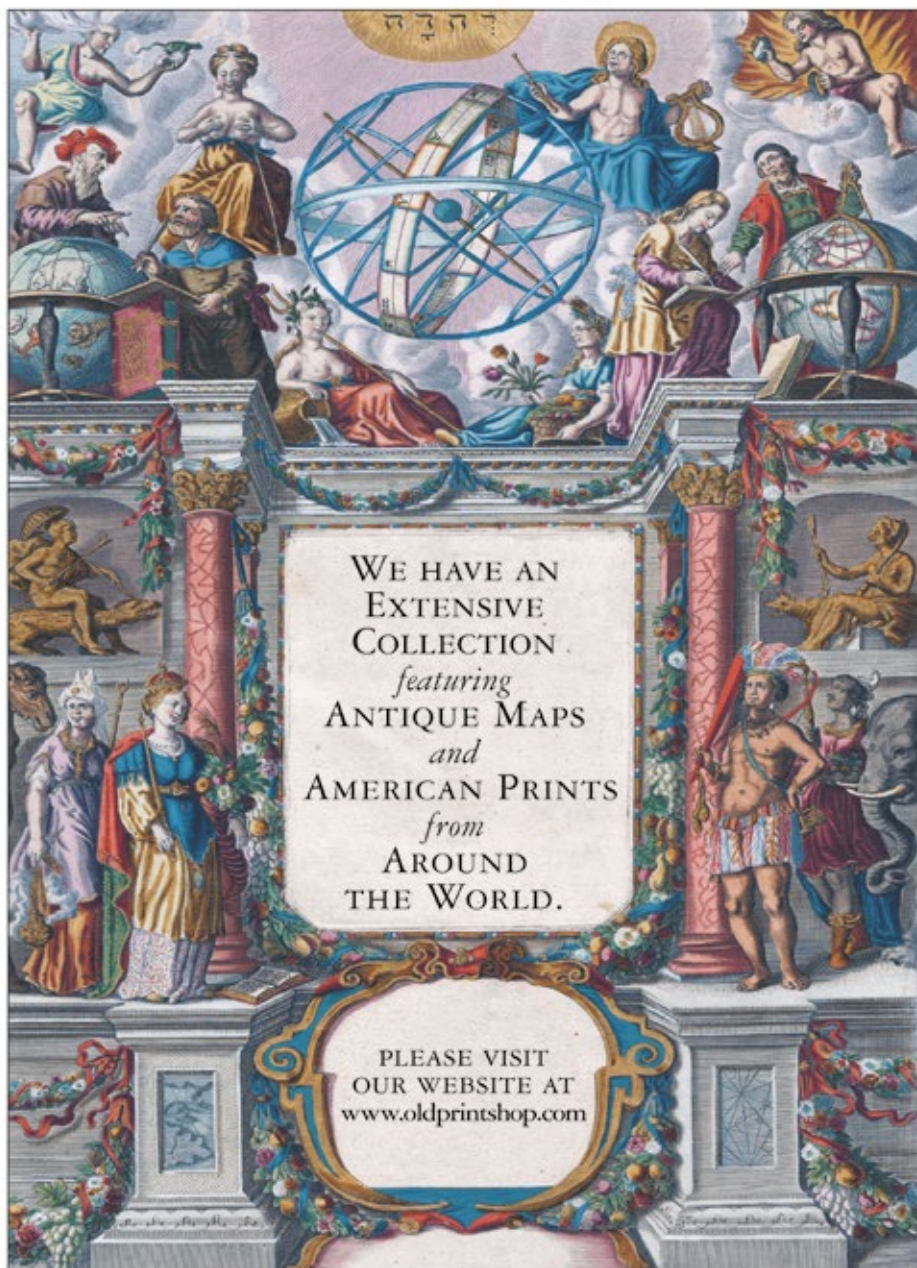
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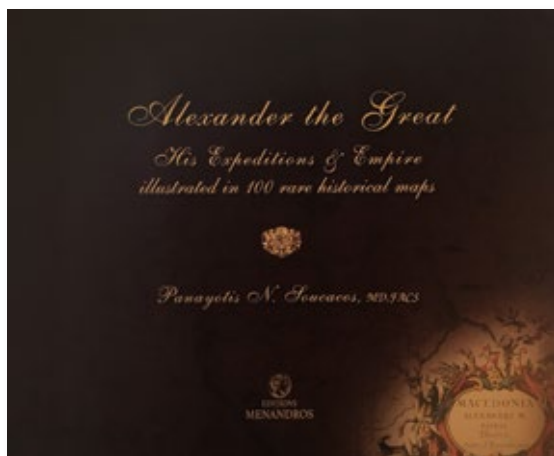
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BOOK REVIEWS

Alexander the Great: His Expeditions & Empire illustrated in 100 rare historical maps edited by Panayotis N. Soucacos. Bilingual (Greek–English) edition. Athens: Menandros, 2017. ISBN: 9786185033729. HB, 416, illustrated with maps and colour images. €90, available at www.memandros.gr



This handsome book is published in landscape format (30.5 x 24.5 cm). Each page contains the Greek original – most contributing scholars are Greek – and its fluid English translation. The boxed set includes eight maps printed in single loose sheets 40 x 30 cm. There are also smaller images of other maps that illustrate the richness of historical–mythological cartography related to Greece, from Argonautica to the battle plan of the naval battle of Salamis (480 BCE).

The book is divided into two sections, preceded by a salutation, prologue and introduction. The first of the two parts is composed of ten scholarly essays covering the life of Alexander, his world conception, his famous campaign into the far reaches of Asia, as well as his legacy and influence to date. The prologue contains a handy synopsis of each essay. The second part of the book consists of a cartobibliography comprised of one hundred maps related to Alexander and his Asian expedition (334–323 BCE). In the spread layout format, all maps are printed in very high-quality images on a single page, with extensive descriptions on the adjacent page. The prologue also provides a synopsis of these maps. The book contains

a section with biographies of all mapmakers cited and a selected bibliography, which I wish had been more extensive – although some of the essays have their own bibliography. The book lacks an index that would have been most welcome, given the rich and diverse topics, characters and places covered.

The cartobibliography could suffice as a reason for map collectors to acquire this book. However, I was fascinated by the essays, including the introduction (salutation) by the historian and Alexander biographer Sarantos Kargakos. Kargakos provides a concise presentation of the contribution of Ancient Greece to cartography, from the poet Homer – who authors like Hipparchus and Strabo declared the father of Geography – to Ptolemy who became very influential during the Renaissance once his *Geographia* was re-introduced in Europe in 1397. A later essay by Professor Geus expands on the geographical worldview of Alexander and his generals, the so-called *Diadochi*, which significantly shaped his routes and campaigns. The essay on the young Alexander by Professor Xydopoulos highlights the impact of his tutor Aristotle who supported cultural imperialism to bring the Oikoumene, including Persia, under Hellenistic political ideology. Professor Koulakiotis's essay covers Alexander's campaign into Asia, including his visit to Troy to visit the tomb of Achilles, the hero of his favourite poem, the *Iliad*. The reader gets insightful information about Alexander's military genius in famous battles like Granicus, Issus, and Gaugamela – well depicted in Oliver Stone's movie, *Alexander* and further analysed in an essay by Professor Zouboulakis. From Koulakiotis, we learn about his advance to Phoenicia and Egypt; onwards, after Gaugamela, chasing the ill-fated Persian King Darius, and the shameful destruction of Persepolis. It is here where the editors of the book could have cross-referenced the essays with battle and campaign maps in the second part of the book. Alexander's politically savvy policy of integration with local customs, and the use of Persian advanced infrastructures and bureaucracies, were met by an ever-growing trepidation among his troops – we would laud it as multiculturalism today.

Alexander's ranks frowned upon his 'orientalisation' and his growing status as a deity; his *apotheosis* is examined at length in an essay by Professor Buraselis.



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We read that the ever-increasing dissent in the soldiery was handled with brutality, and how a frustrated Alexander ended up executing, and plain murdering some of his, at a time, closest colleagues. Unfortunately, Alexander never realised his goal to reach the outer ocean beyond India that encircled the world; the exhausted expedition retreated West, and the 32-year-old Alexander died in Babylon in 323 BCE. (I was surprised there was no mention of the death in battle of his famous horse, Bucephalus, in the Punjab three years earlier.) His legacy and influence in the Greco-Roman world from the 2nd c. BCE to the 3rd c. CE is addressed in an another fascinating essay by Koulakiotis, who also covers the problems with the historical sources. The presence of Alexander in the East was closely felt as Rome expanded East. Marc Anthony saw himself in Alexander and went through his own ‘orientalisation’ while in Egypt in the company of Cleopatra – the last ruler of the Ptolemaic dynasty, originating from one of Alexander’s generals. Professor Briant discusses Alexander’s influence from the sixteenth to the nineteenth century, including in the writings of Voltaire and Montesquieu.

The last three essays centre on one aspect of Alexander’s enterprise that is often eclipsed by his formidable military campaign; that is what we now would refer to as the ‘scientific’ aspect of the expedition. As Professor Tzifopoulos explains, the Macedonian army included the so-called *hemerodromes*, a type of scout messengers like the famous Athenian Pheidippides, who reached Sparta in two days seeking help before the Battle of Marathon in 490 BCE. However, the Macedonians had created the more specialised *bematists* who had exceptional abilities for topography, geomorphology and terrain data gathering. They always preceded the main army, providing advantageous war intelligence, but also partaking in a massive knowledge-gathering excursion. Doctors Garifallos and Demertzis list explorers, navigators, geographers, and historians that accompanied Alexander, gathering information that eventually would be housed at libraries such as that of Alexandria and Pergamum. It is there where the new and influential geographical knowledge would take root, as covered in the last essay by Professor Livieratos.

In conclusion, any IMCoS reader who loves history, and of course maps, will find this rich book worth acquiring.

Juan Ceva, Los Angeles, California.

Antique Maps of Cornwall & the Scilly Isles

by R.C.E. Quixley, expanded by J.M.E. Quixley, 2nd edition, 2018. ISBN 978527215030. HB without dust jacket, 270, generously illustrated. STG £30.00.



The original of this book was an impressive work of scholarship in its time. Mr Quixley’s son has done a very worthwhile job of updating it for today’s audience. It has all the strengths of the cartobibliographical works of the early twentieth century with a greatly updated format that takes this book firmly into the twenty-first century. Most maps illustrated are particularly attractive coloured examples, for instance, and printed on gloss paper.

It is as useful, as in the past, not only as a vital guide to Cornish maps, but also for increasing one’s understanding of other counties. It is always good on what is covered; and always accurate on that too, as far as I can see in comparison with my own county of Durham. Nonetheless, the format is not as comprehensive as that provided by older scholarship of Sir Herbert Fordham, or Harold Whittaker on Northumberland, but is a great deal more interesting to read. The most common use for the genre is in identification of maps that one is considering buying or selling. Here we have an excellent companion – on what is included.

The choice of what to include or exclude is idiosyncratic. Playing card maps are given quite a lot of room, while in contrast, regional maps of the South West are almost ignored. You will not find the names of Rogier, Bertius, Langenes, Cloppenburg or Hollar here. Only the 1595 Mercator map is covered in depth, but no Mercator/Hondius from either *Atlas Minor* or *Major*, or their Blaeu and Janssonius spinoffs. A collector is unlikely to see all the playing cards in their lifetime,

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while they still stand a very good chance indeed of being able to find – and afford – the seventeenth-century regional maps. So, this does limit the contribution somewhat. Earlier sea charts are covered, particularly when the Scilly Isles are involved, but interest peters out after Grenville Collins. I am sure that most other people's interest does too, since the ornamental content disappears from the charts, but this still illustrates the very personal approach. Interest in maps of the nineteenth century seems to go the same way, with nothing after 1842. The norm is to go to 1900; again, with such later maps being often more obtainable. This is not a thorough cartobibliography of maps including Cornwall. It *is* a thorough practical guide on each map and mapmaker the Quixleys chose to include.

There are minor quirks that need to be taken into account. Firstly, and significantly, the name of publisher is always given first in entry titles, which can be disconcerting considering that many of the maps recorded are best known by the names of their engraver; (although explained in the editorial and a footnote on page 110). I found references to the 'border with England' to be distracting, not being a Cornish nationalist. 'Foreword' is once accidentally rendered 'Forward'.

Good design and production values are on display here, although colour reproduction of individual maps is slightly garish in some places and may reflect copies of copies. The format is hard cover, without a dust jacket, which is very suitable for a reference book. In fact, it is attractive enough to seem like a 'coffee-table' book, whilst in fact being an academically rigorous production, that has most use as a research tool. Having said that, there is a lot of room for just flicking through to enjoy some marvellously appealing maps. Cornwall is, by common consent, one of the most attractive of the English counties; and seems to have brought out the best in a number of engravers. They seem to have found it exotic and a bit mysterious. Of course, the connection with sea, piracy, exploration and such allows for flights of fancy very easily.

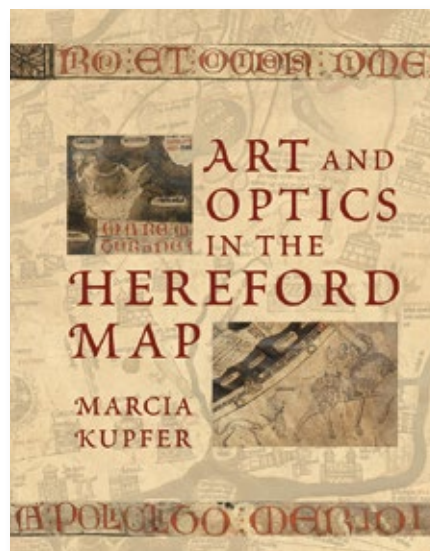
In summary, what you find in a main entry is always excellent, being succinct, informative and accurate. The first four sections are presented by century. Section five is described as Appendices; and contains ten useful short essays of a wide-ranging interest: Cornish Place Names, Mount's Bay and roads to Penzance, The Great Cross Course (mining), Sir Cloudesley Shovel and HMS Association, The Border with England, Latitude and Longitude, The Saxton–

Norden–Kip sequence (which I found particularly useful), analysis of the three main survey of Cornwall, and also an essay on surveyors and engravers. The book finishes with a page of entirely Cornish orientated references, and a half page of internet links.

For a collector of Cornish maps, I would call it indispensable. For a collector of other English county maps, I would now regard it as the second book they should buy; (maybe the first if their chosen county does not have an accessible cartobibliography). I can also see a market for this volume as a gift to those who have other Cornish interests, whether historical or maritime.

Mike Sweeting, North Yorkshire, UK

Art and Optics in the Hereford Map: An English Mappa Mundi, c.1300 by Marcia Kupfer. *New Haven CT and London: Yale University Press, 2016. ISBN 9780300220339. HB, x + 223. US \$75.*



This review makes two assumptions of its readers. First, that at some point you have studied a drawing of the Hereford map and having identified two or three items – probably places – that 'make sense', your eye then moved to the nearby items on the map, and suddenly, the map's strangeness simply overwhelms. We can 'sort out' so many of its features, but know that somehow we are not its intended viewers: it answers questions that we not only do not ask but do

not understand, and it falls short in answering the questions we ask about it. Despite more than a century of critical scholarship – taking C.R. Beazley as the starting point – all the great *mappae mundi* call forth new studies simply because there is so much we do not understand about them.

The second assumption is that you have seen, and possibly own, many books on this particular map: scarcely a year goes by without another monograph or collection dedicated to deciphering what inspired the cartographer to record what he did, the desire behind those who sponsored the work, and the who, when, and where of its making. In this well populated area of research there are few *new* books.

But Kupfer's book is new, fully acknowledges the strangeness of the map, and takes us in some new directions towards understanding the Hereford map and, by extension, the genre.

The book's first part is a general argument that this map has to be seen as an expression – in human handiwork – of a relationship between the divinely created spectacle of nature and the humanly created marvel that is the work of art. The artwork becomes the vehicle, in its marvellousness, of the spectacle of which the viewer is a part. She expands and defends her thesis by appeals to literary texts and to other works of art, and then comes to this pithy expression of her position: 'it [the Hereford map] is the work of art that validates the cartographic enterprise, turning the *mappa mundi* into a mirror of the radical difference between human handiwork and divine creation, between mortal vision and God's omniscience. What we have dismissed as a "mistake whose dimensions inspire a certain awe" is the work's chief allegorical conceit' (page 29).

By now it should be clear that Kupfer believes she is working with a masterpiece, and in the second part of the book she sets out her 'speculations' about how we can appreciate the viewpoint and the epistemology of its creators and viewers. This is a demanding section for the reader for we have to abandon much of what seems 'obvious' to us, while she has to reverse engineer from artistic products to what inspired their making. But working our way through it we not only encounter almost every other *mappa mundi* (not just the 'easy' ones such as that in the Southampton Psalter (page 52) but the 'awkward ones such as Albi (page 56) and that in Vat. Lat. 6018 (page 57), but a great deal of other art besides. Kupfer's argument that the Hereford map is a work of medieval art demands that we need to

study a great deal of non-map art in these pages to appreciate – note that I did not write 'understand' – these *mappae mundi*. This is new work, it makes a great case, and it will take us many years to absorb.

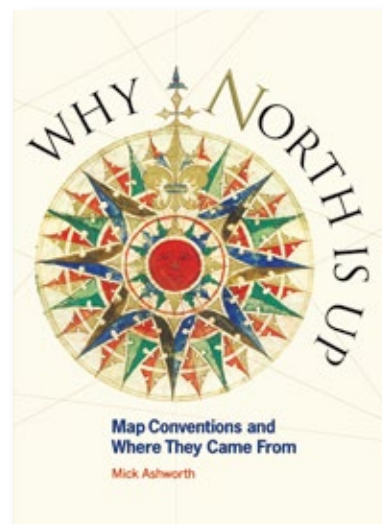
The book's final part argues that only by accepting that there was a difference sense of perspective: who is looking at the world and from where? This forms a conclusion to a book whose central premise is that only by knowing that we view the world wholly differently, not simply in a technically distinct way, can we see that the Hereford map is both unique and a surviving fragment of another world.

This book is lavishly produced, and the arguments supported by many excellent colourplates, always convenient to where they are been discussed, is that one follows the argument both in text and image. The richness of these plates will no doubt make it a coffee-table book (and I hope it succeeds as such), but this is no mere book of images: this is work of pioneering erudition with detailed endnotes and bibliography. Anyone who wants to engage with the *mappae mundi* needs to take note of this volume.

Thomas O'Loughlin
University of Nottingham, UK

Why North is Up: Map conventions and where they came from by Mick Ashworth.

Oxford: Bodleian Library, 2019. ISBN 9781851245192.
HB without dust jacket, 224, generously illustrated.
STG £20.00.



This is a deceptive book. It has the weight and art-paper format of a coffee-table offering, which of course allows excellent reproduction of a large number of maps. However, it is much smaller in dimensions than the norm, whilst containing text that, though brief, is highly illuminating. This slight mismatch leaves one with visuals that are often heavily cropped and ideas that deserve greater exposition. It would be tempting to proclaim the result a mess, but that is far from the case.

Although one does like to see the whole map, it has to be said that, when investigating details there is little harm in providing detail. The text is indeed far more sophisticated than the populist title might indicate. It does presume an existing knowledge of mapping, map history, and even some of the mapping conventions that Mr Ashworth investigates. Often the author remembers that his reader may lack specialist knowledge; sometimes he does not. However, the outcome is that the reader is never talked down to or treated to banal ‘book-slush’. It is a book that educated me further – to my surprise. Perhaps those with more than thirty years of map interest could find the content basic, but it would set even the most sophisticated map lover thinking.

Why North Is Up is divided into seven sections, with a total of thirty short essays divided between them, all by the author. The approach is systematic – starting with map structure, moving on to symbols used, relief, then names and boundaries. With the ‘skeleton’ of his topic handled, Ashworth moves on to thematic issues. Part V looks at qualitative and quantitative conventions, while Part VI investigates geological, hydrological, military and global mapping.

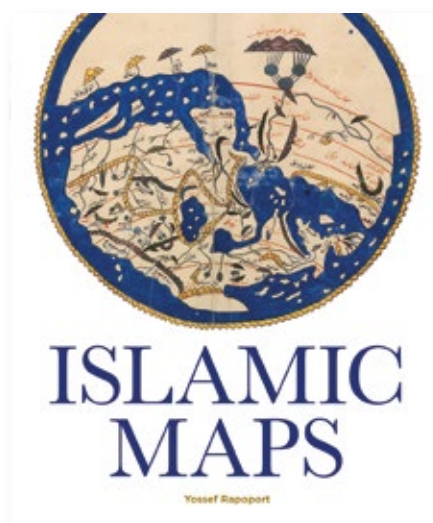
You may be charmed with the sub-title so lovingly provided for each essay; you may find them contrived. They are certainly both creative and unnecessary. They give further indication as to the divided intent. It seems that the imprimatur of the Bodleian could not be given to inadequate writing, but nonetheless someone wanted it ‘jollied up’ to ensure copies sold in their shop and on their website.

In summary, was I glad to get this book for review? No. At first view it seemed too basic. At second view it seemed too conflicted. However, am I glad that I have read it? Yes. Mick Ashworth displays real skill in synthesising material from a particularly wide range of sources and cultures. The casual, fluid display of relevant knowledge is, in itself, arresting. Not every

map illustration is needed by those who are familiar with map history. Some must have been inserted to assist the casual purchaser who cannot conjure up for themselves what a Blaeu map looks like or what hachures are. The great majority are rare, unusual, or assessed in a fresh manner. Not a reference book, but still one to be referred to.

Mike Sweeting, North Yorkshire, UK

Islamic Maps by Yossef Rapoport. Oxford: Bodleian Library Publishing, 2019. ISBN 9781851244928. HB, 192, c.60 colour illustrations. STG £35.00.



The title *Islamic Maps* maybe slightly misleading because only at the end of the book does the author briefly refer to ‘Islamic maps proper’ such as Kiblah maps which show the direction of Mecca to which Muslims turn to at prayer. He refers mainly to a few important world maps made by the geographers/mapmakers of the Islamic societies from the ninth to seventeenth centuries. There is no equivalent phrase to ‘Islamic maps’, such as ‘Christian maps’ in European cartography.

The author Yossef Rapoport, a reader of Islamic history at Queen Mary University, London, states in his Introduction: ‘The term pre-modern Muslims used for map was Surah [Surat], meaning simply “Image”, often in conjunction with “Arz”, meaning “Earth” – for them a map was an image of the world, equivalent to the Latin Imago Mundi... I employ here

a broad definition of maps, and my definition of Islam is likewise expansive, not limited to religious beliefs and ritual practices... maps were not displayed in mosques or in other religious structures... different from late-medieval European practice, where world maps were hung on the walls of churches and monasteries’.

The original Islamic maps (manuscripts) and their later copies, produced by copyists from different periods, usually not identical to the original, were made to be included in the original Islamic geographical works and their later editions. Therefore, their measurements should have matched the size of those volumes.

Islamic Maps contains an Introduction, six main chapters, Timeline, Notes, Further Reading and Index.

Chapter 1, ‘A Mathematician’s Map of the Nile’, depicts and describes the Khwarazmi’s map of the Nile from his book *Surat al-Arz* (Image of the Earth). Khwarazmi lived and worked in Baghdad in the first half of the ninth century, during which he produced many treatises. The translation of one of his works into Latin reads *Lieber Alghoarism*, the origin of the term ‘Algorithm’. He believed in the ability of mathematical tools to control time and represent geographical space. Khwarazmi’s work was essential in creating the first Islamic world map, known as Map of Ma’mun, made at Bayt al-Hikmat (House of Science) in Baghdad, of which no copy was known until 1986 when an Arabic medieval geographical work produced by Al-Umari came to light that contained a 1340 manuscript copy of it.¹

Abu Ishaq Istakhri Farsi, the most successful mapmaker in Islamic history, is discussed in Chapter 2 ‘A world of Islam in Circles and Lines’. Born in the city of Istakhr of the Province Fars in Iran towards the end of the ninth century, he travelled widely in the Islamic world of that time and produced an important geographical book *Al-Masalik wa al-Mamalik* (Routes and Kingdoms – Mamalik can also be translated as Regions, States or Countries). A set of 22 maps accompanied his text, a few of which have been depicted and described in this chapter. Particularly eye-catching is his famous circular world map. Istakhri explains that the purpose of his map is to show the regions of the world in relation to each other. He sees no need to name individual cities, to indicate mountains, or reproduce any realistic coastlines. Istakhri’s map had a long-lasting impact on

later generations of Islamic mapmakers, particularly on Ibn Hawqal, another famous mapmaker of the same period, whose map of the Maghreb, which includes the entire Mediterranean Sea, (copy 1086) can be viewed in this chapter. Ibn Hawqal, opted for a much more recognisable, more elaborate, more detailed, and less schematic map of the Mediterranean Sea. The map of the Indian Ocean by al-Muqaddasi is also depicted in this chapter.

The third chapter ‘The Mysterious Book of Curiosities’ is an extremely curtailed version of the volume *An Eleventh-Century Egyptian Guide to the Universe, The Book of Curiosities and Lost Maps of the Caliphs*, both by the same author, published in 2014 and 2018 respectively. Dr Emilie Savage-Smith was his co-author on the first volume. A rather large rectangular map of the world and a map of the Mediterranean, with its islands and ports, included in the *Book of Curiosities*, are depicted.

Chapter 4 ‘The Grid of al-Sharif Idrisi’ focuses on Idrisi’s cartographic work. His circular world map is depicted on page 94 and also adorns the book’s front cover, asserting its importance. His larger world map engraved on a large silver plate – not extant – is also described in some detail, and the reconstructed version of it, based on seventy surviving regional maps, by Konrad Miller, Stuttgart 1926, is illustrated.

‘The Expanding Horizons of an Ottoman Admiral’, the fifth chapter depicts the extant portion of the world map, drawn by Piri Reis in 1513, showing the Atlantic Ocean with West Africa and the Iberian Peninsula on the east side, and the newly discovered Central and South America to the west of it. Piri Reis’s *Kitab-i-Bahriyye* (Book of Seafaring) is also addressed in this chapter.

In the final chapter ‘An Astrolabe for a Shah or Finding the Direction of Mecca in Safavid Isfahan’ the face of an astrolabe made for Shah Abbas II of the Safavids in 1647 and a few other instruments and diagrams are discussed.

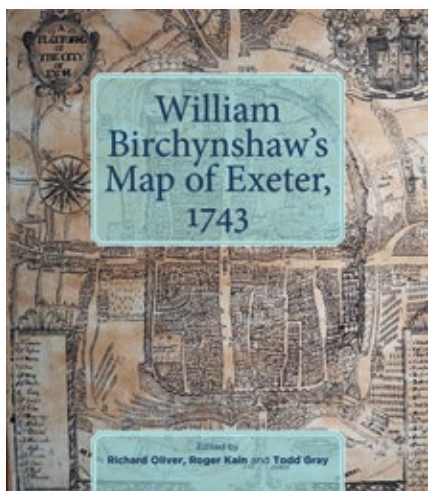
Islamic Maps is not a comprehensive history of Islamic maps. It does not describe every major cartographic achievement of Islamic mapmakers. There is no mention of Balkhi, Jayhani, Qazwini, Mustawfi, Biruni and many other well-known Islamic geographers/mapmakers. It should not be compared with *Mappae Arabicae* by Konrad Miller (1926), or ‘Islamic Cartography’ in *The History of Cartography* Vol. two, Book one, Part one (1992), edited by Harley

and Woodward. It is merely a selection of a few important Islamic geographical works and maps chosen by an able and well-informed author. It is apparently not destined for serious researchers and experts, but provides some valuable basic information about Islamic cartography to a wider audience, enabling them to obtain a general idea of the subject. Considering the book's high quality of printing and binding, which includes some seventy maps and images in colour, mainly from the Bodleian Library's rich collection, the selling price is modest and affordable.

¹ For a full description of the Map of Ma'mun see 'The Map of Ma'mun' by Cyrus Alai, *Mercator's World*, Vol. 3.1, January/February, 1998, pp. 52–57.

Cyrus Alai, London

William Birchynshaw's Map of Exeter, 1743, edited by Richard Oliver, Roger Kain and Todd Gray. *Devon and Cornwall Record Society, Extra Series 3*. Woodbridge: Boydell Press, 2019. ISBN 9780901853974. HB, 74, 35 illust. STG £25.00.



The Devon and Cornwall Record Society and the authors are to be congratulated on the publication of this volume on the mapping of Exeter. The publication combines the extensive expertise and publication record in the history of cartography of Richard Oliver and Roger Kain, with that of Todd Gray, the leading historian on Exeter and beyond. It makes a fitting addition to the Record Society's

publications, many of which are on topographical subjects including maps.

The publication of this book is prompted by the recent discovery of a map of Exeter, seemingly dated 1743, by a William Birchynshaw of that city. This framed map was sold at auction in 2018 and was purchased by Todd Gray himself. Little is known of its provenance save that it was found in the attic of an elderly lady after she had died. Gray offered it for publication by the Devon and Cornwall Record Society. It seems to be the only copy and indeed a unique cartographic production by Birchynshaw. The discovery of a hitherto unknown town map is a rare thing and it is offered to illuminate the history of mapmaking in Exeter and to enrich our knowledge of that city's history more generally. Exeter, it seems, was a relatively early adopter of town mapping, perhaps a reflection of its importance in the early modern urban hierarchy of England. This makes a systematic treatment of its maps a serendipitous and timely thing.

The first section of the book by Oliver and Kain examines, in turn, seven main maps of the city including the Birchynshaw map, each regarded as original, from which derivatives were made and are here described. The second section gives the historical context of Exeter in 1743. The book is published in a generous large format hardback form, appropriate for the reproduction of maps and at £25 represents very good value.

The book is copiously illustrated with 35, mainly colour, illustrations including all the seven maps and many of their derivatives. There are also marginal vignettes from Rocque's map of 1744 as well as some enlargements of map details. The reproductive clarity is good, though it is a pity that a few of the maps have poor contrast especially the map by Birchynshaw, the focus of the book. Indeed, there is a better reproduction of part of this map on the cover than that shown in the pages of the book. There are also two tables in the 1743 history section which give useful background information on the occupations of Exeter Freemen and the prevalence of non-Anglicans in the city around the time Birchynshaw's map was drawn. The book has a readable and engaging style, being accessible and fluent. The result is an authoritative account nicely balancing description with analysis.

This publication makes a valuable contribution to scholarship and map collecting in a number of ways. Firstly, to the development of the mapping of Exeter.

We have town maps from the sixteenth century to the twentieth. The earliest, by John Hooker in 1587, is a splendid early example: Indeed, London and Norwich had only been mapped about three decades earlier. This attractive bird's-eye view, buildings in elevation and not strictly to plan, was prevalent at the time. A well-reproduced colour plate of Hooker's map accompanies the text. It is found that there were seven derivatives of this 1587 map including by the well-know John Speed, the continental enterprise of Braun and Hogenberg, and lastly by Philip Lea over a century later.

This pattern of carto-bibliographical analysis is sustained through the remaining survey of the seven maps. When we come to the third, we arrive at the book's focus: the Birchynshaw map entitled 'A 1743 Platforme of the City of Exon'. Oliver and Kain were intrigued by its antiquated style, more reminiscent of a map made two centuries earlier. The problems of dating this map are helpfully related. Though the style may be sixteenth century, topographic features only built soon before the time of the map such as the hospital are depicted.

The Birchynshaw map is valuable not only in augmenting our picture of the mapping history of Exeter, but in filling out and making more vivid the general historical development of the city too. Exeter is depicted at the height of its dominance by the woollen cloth trade. The map shows how widespread cloth drying racks were in the city's surroundings, and this is reckoned to be the last cartographic depiction of this industry before its demise and before the street plan was changed and augmented by Georgian streets and crescents. The map is also one of the few depictions of the former friary which became Bedford House; this was demolished to build Bedford Circus later in the century.

Perhaps rather sadly, Birchynshaw's map seems to have been eclipsed the very next year by John Rocque's, also illustrated and analysed here. Having completed his map of London, Rocque was encouraged by the city council of Exeter to map their town, and this he did in 1744. Rocque's map and its derivatives are evaluated. This is followed by a consideration of the remaining three elemental maps and those based on them. For instance, John Wood's 1839 map is found to be 'the most detailed record of the early Victorian city'. Thus, the book provides a sustained and consistent conspectus of the mapping of the Devonian capital.

Secondly, the book makes a contribution to the history of Exeter *per se*, especially its second section, Todd Gray's account of Exeter in 1743. We are reminded that the mid-eighteenth-century city was still acclaimed as prosperous and attractive. The topography, society, economy, government and religion of Exeter are considered in turn, thus illuminating the era when the map was made. Gray's account combines a description of these elements woven together with Birchynshaw's contribution to illuminating them. Thus, we learn how the 1743 map portrays salient features like the city gates and the then intact wall as well as the sixteen parish churches crowded within its confines: Exeter was then almost entirely *intra mural*. Gray's account is helpfully interspersed with extracts from contemporary topographic writings such as those of Andrew Brice. These usefully repopulate the otherwise empty streets on the map, at least in the mind's eye.

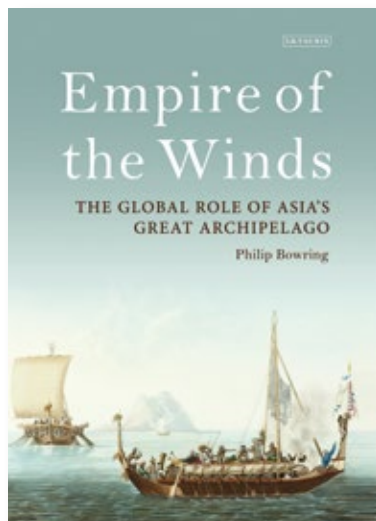
Lastly, this book contributes to the history of cartography more widely. The reconstruction of the mapping of Exeter reveals the working out in one location of the more general technological and socio-economic changes which led to the adoption and progressive refinement of urban mapping. The Birchynshaw volume can be read alongside the recently published *British Town Maps: A History* (2015), also by Kain and Oliver. This is accompanied by the invaluable Catalogue of British Town Maps (CBTM), available free online. The CBTM references are usefully included in the present Birchynshaw book.

It is heartening to see in print a large format publication of maps and related topographic records almost two decades into the twenty-first century. It is a rare publication in the Society's Extra Series, with only two predecessors in 1973 and 1979; hence emphasising the importance of this cartographic find. This book makes a welcome contribution to the history of mapping of Exeter in particular and of town mapping and the history of cartography of Britain more generally. It is a very important and impressive addition to the growing number of studies of the mapping of particular towns. Those interested in the history of Exeter and the history of mapping, or both, are warmly recommended to add this book to their shelves.

David Fletcher, University of Sussex, UK

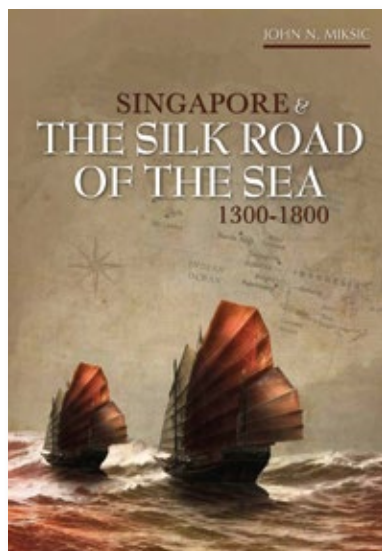
Empire of the Winds: The Global Role of Asia's Great Archipelago by Philip Bowring.

London and New York: I.B.Tauris & Co. Ltd, 2019.
ISBN 97788314466. HB / 9781350162341 PB. 317,
34 colour and 28 b&w plates, 16 maps. STG £25.00 /
US \$35.



Singapore & The Silk Road of the Sea

1300–1800 by John N. Miksic. Singapore: NUS Press
and National Museum of Singapore, 2013 (4th reprint
2019). ISBN 9789971695743 HB / 978997169553.
PB. 504, 306 photographs, drawings and maps
(colour and b&w). \$58 SGD.



Although much has been written about the history and cultures of the islands, countries and ethnic groups that constitute Southeast Asia, their maritime relationships, and the region's place in the development of global commerce, few books have had both the comprehensive scope and sufficient detail to provide a concise account of this important region as a whole accessible to non-specialist readers.

In *Empire of the Winds*, which won the Penang Book Prize 2019, Philip Bowring covers the rise and fall of the communities, kingdoms and states of 'the world's biggest, most important archipelago and its adjacent coasts', for which he uses the name 'Nusantaria'. The term comes from 'Nusantara' ('outer islands'), the name applied to its territories by the Java-based Majapahit empire. Known today as maritime Southeast Asia, Bowring's Nusantaria comprises the region bounded by the northern entrances to the Straits of Melaka in the west, the Luzon Strait in the north, the Banda Islands in the east, and Indonesia in the south. Using a combination of history, archaeology, geography, linguistics, economics and political science, Bowring describes the growth, heyday and demise of the different societies that have inhabited Nusantaria from the end of the last ice age (some 10,000 years ago) to the present; he also discusses the region's links with Rome, Egypt, Madagascar, Taiwan, the Marianas, and the coastal regions of Thailand, China and southern India.

After discussing the early history of Nusantaria and its cultural exchanges, the book has chapters on the kingdom of Funan, the empire of Srivijaya, the Sailendra dynasty of Java, the Tamil Chola dynasty, the kingdom of Champa, Madagascar, trade with China from the Tang to the Ming dynasties, the Majapahit empire, the voyages of Zheng He, and the centre of Malay culture, laws and customs: the sultanate of Malacca (Melaka). Unlike other histories of Southeast Asia, in which the Philippines is often overlooked, Bowring includes four chapters in which he addresses the complex history and multifaceted cultures of the Philippine archipelago. Later chapters cover the arrival of Portuguese, Spanish, Dutch and British traders, Western colonial occupation, the growth of Chinese settlements, and the rise of nationalism in the aftermath of World War II.

Empire of the Winds provides a sweeping narrative of the vibrant history of maritime Southeast Asia. Notwithstanding its divisions between political states,

religions and ethnic groups, Bowring argues that Nusantara has retained a unique identity as a consequence of its dependence on the sea. Unfortunately, this common identity has been lost in today's individual modern states, but if the region's 500 million inhabitants looked deeper into their shared histories they could use the strength of a united people to resist intimidation by larger nations with interests in Southeast Asia, notably China.

In the early chapters of *Singapore & The Silk Road of the Sea*, John Miksic also covers the broad sweep of history across 'the Three Seas of the Southern Ocean', including Southeast Asia's first great trading kingdom, Funan; the island empires of Kedah, West Java, Jambi, Srivijaya and Barus; and, in particular, the early history of Singapore. The popular misconception is that the history of Singapore began with the arrival of Sir Thomas Stamford Raffles and Colonel William Farquhar in 1819, but Raffles himself believed that 'he was going to revive an ancient seaport that already had a glorious history'.

According to the Chinese trader Wang Dayuan, who visited and wrote about the island in the mid-fourteenth century; the *Malay Annals*, a collection of manuscripts first written in the fifteenth century; and the records of Portuguese explorers in the sixteenth century, by 1350 Temasik (the original name) or 'Singapura', founded in c.1299, was a thriving urban centre in regular communication with the rest of Southeast Asia and the Indian Ocean. Perhaps 10,000 residents were divided between 'the unsavoury pirates of the Dragon's Tooth Strait and the honest merchants of Pancur'. The city went into decline after the then ruler Parameswara (*aka* Iskandar Shah) was driven out in c.1396; he subsequently founded Melaka, which lured away Singapore's trade along the Silk Road of the Sea.

In 2018 Professor Miksic's book won the inaugural Singapore History Prize (awarded by the National University of Singapore), and his narrative differs significantly from Bowring's in two respects. First, as the title indicates, *Singapore & The Silk Road of the Sea* emphasises the trade flows between Southeast Asia and China. Recorded missions to China in the Tang, Sung, Yuan and Ming dynasties are listed for each of the tributary kingdoms. The cycles of maritime trade with China are discussed at some length, as are the arrival and subsequent settlement of Chinese traders, merchants and artisans in the region (often despite imperial prohibitions on overseas trade).

Secondly, as an archaeologist based in the region for over forty years, Miksic goes into considerable detail on the archaeological evidence that supports and supplements the recorded history. Excavations in many locations are listed, with details of the finds made (whether or not scientifically recorded). Shipwrecks are of particular importance, notably those found off Belitung (the ninth-century 'Batu Hitam'), northwest Java, southeast Sumatra (the tenth-century 'Intan' and late-thirteenth-century 'Java Sea'), Riau, Malaysia, Vietnam, Borneo, Palawan and Busuanga.

Chapters Five to Eight address the (fairly recent) growth of archaeology in Singapore, with detailed descriptions of the sites excavated, interpretation of the items unearthed, and analysis of the items imported into, manufactured in, and exported (or re-exported) by Singapore. Because of their durability, ceramic items (principally sherds) dominate both the finds and the text, but glass, metals (including gold, brass and iron), coins and perishable materials are also included. The discovery of a large number of complete, conical stoneware 'mercury jars' at one site in Singapore leads to a discussion of the early and extensive trade in mercury and cinnabar (mercury sulphide) along the Silk Road of the Sea. The book concludes with four shorter chapters on 'Singapore in Regional Context'.

Both books have a good selection of modern maps (at different scales) showing the areas being described, and although cartography is not a focus for either book the images in both include a number of early maps. Bowring reproduces the important Ming-dynasty chart known as the Selden map; 'Terza Tavola', the first (c.1554) map to use the name 'Filipina', by Giovanni Ramusio; and early-seventeenth-century Dutch maps of Nusantara and regional cities. Miksic shows details from the earliest maps to show Singapore, including an English map of 1709 that shows the western entrance to Keppel Harbour; the Bute map, the earliest known landward map of Singapore; Lieutenant Jackson's 1822 'Plan of the Town of Singapore'; and a map of the 'Reserved Plain' of Singapore drawn by Edward Lake in 1827. Details from later nineteenth-century maps of Singapore by J.B. Tass, J.T. Thompson and Frederic A. Weld are also included.

These complementary books are to be recommended to anyone interested in the history of Southeast Asia. Both cover the pre-colonial history of

the region in some detail, with an emphasis on trade within Nusantara and along the Silk Road of the Sea. *Empire of the Winds* then widens the scope of its narrative, to include the Philippines and historical developments up to the present day, whereas *Singapore & The Silk Road of the Sea* turns its attention specifically to the history and archaeology of Singapore. Although both books would have benefitted from better copy-editing, the authors' enthusiasm for their subjects is manifest and will encourage the reader to keep turning the pages.

Peter Geldart, Manila, The Philippines

BOOKS RECEIVED

Poly-Olbion: New Perspectives edited by Andrew McRae and Philip Schwyzer. Woodbridge, Suffolk: D.S. Brewer, 2020. ISBN 9781843845485 (HB) / eBook (ePDF) 9781787448919. HB, 249, b&w illustrations. STG £75.00/ eBook £19.99.

New in the Studies in Renaissance Literature series is *Poly-Olbion: New Perspectives*. This volume of ten essays sheds fresh insights into the remarkable, early modern collaboration between poet Michael Drayton, legal scholar John Selden, and engraver William Hole who was responsible for its thirty, idiosyncratic county maps. Drayton's unique literary survey of the history, topography and natural history of England and Wales ranges in interests from the supernatural to the habits of beavers, the loss of woodlands, and national and local glories and disasters. Of particular interest are the essays which address Drayton's approach to ecology and the environment.

Fifty Maps and the Stories They Tell by Jerry Brotton & Nick Millea. Oxford: Bodleian Library, 2019. ISBN 9781851245239. PB, 144, 50 maps. STG £12.00. The book is a brief introduction to highlights of the Bodleian Libraries' remarkable map collection. Organised chronologically, the 'stories' begin with Ptolemy's *Geographia* and conclude with a 2018 computer-generated cartogram by Benjamin Henning.

Mapping the Great Game, Explorers, Spies and Maps in 19th-Century Asia by Riaz Dean. Oxford and Philadelphia: Casemate, 2019. ISBN 9781612008141. HB. 293. STG £20.00 / US \$32.95. Britain and Imperial Russia jostled for power in

Central Asia during the nineteenth century. Accurate maps were scarce but much needed by the contesting parties. *Mapping the Great Game* follows those explorers, spies and cartographers who produced them.

The Map Tour, A History of Tourism Told through Rare Maps by Hugh Thomson. London: Royal Geographical Society with IBG / Andre Deutsch, 2018. ISBN 9870233005560. HB, 224, 200 colour and b&w illustrations and maps. STG £30.00.

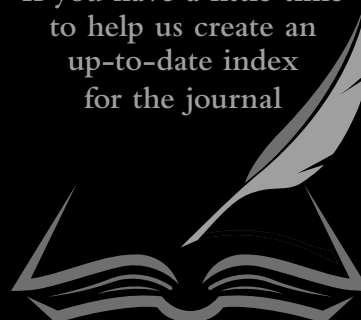
Using an excellent selection of maps and illustrations, the book charts the evolution of tourism from the days of the Grand Tour to steam ship voyages, the golden age of train travel through to global tourism of the twentieth century.

The Magnificent Maps Puzzle Book by Philip Parker. London: The British Library, 2019. ISBN 9780712352994. PB, 256, 40 maps. STG £14.99.

This puzzle book asks readers to scrutinize forty maps, to read the accompanying description of their creation and use, and then to answer a series of historical and geographical questions based on what they can discover in the maps. The maps, selected from the British Library's collection, are chronologically presented and range from medieval portolan charts to the latest digital renderings of the moon.

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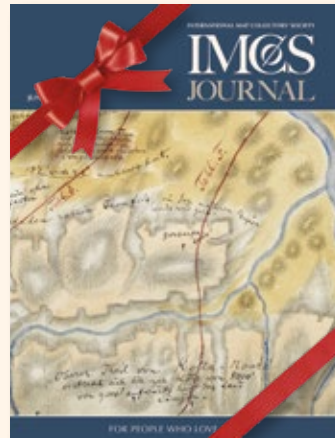
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